

NAVAL SHIPS' TECHNICAL MANUAL  
FOR  
[*SGML VERSION; SEE RECORD OF  
REVISIONS*]

## **ELECTRIC POWER DISTRIBUTION SYSTEMS**

### CHAPTER 320

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**NOTE**

THIS TECHNICAL MANUAL (TM) HAS BEEN DEVELOPED FROM AN INTELLIGENT ELECTRONIC SOURCE KNOWN AS STANDARD GENERALIZED MARKUP LANGUAGE (SGML). THERE IS NO LOEP. ALL CHANGES, IF APPLICABLE, ARE INCLUDED.



## TABLE OF CONTENTS

Chapter/Paragraph	Page
<b>320 ELECTRIC POWER DISTRIBUTION SYSTEMS</b> . . . . .	1-1
<b>SECTION 1 DESCRIPTION OF ELECTRICAL SYSTEMS AND EQUIPMENT</b> . . . . .	1-1
320-1.1 GENERAL. . . . .	1-1
320-1.1.1 IMPORTANCE OF ELECTRIC POWER. . . . .	1-1
320-1.1.2 SAFETY PRECAUTIONS. . . . .	1-1
320-1.1.3 DISTRIBUTION SYSTEMS. . . . .	1-1
320-1.1.3.1 Alternating Current or Direct Current. . . . .	1-1
320-1.2 ALTERNATING CURRENT DISTRIBUTION SYSTEMS. . . . .	1-1
320-1.2.1 VOLTAGE, PHASE, AND FREQUENCY. . . . .	1-1
320-1.2.1.1 System Grounding. . . . .	1-1
320-1.2.1.2 Types of Power. . . . .	1-2
320-1.2.1.3 Special Power Types. . . . .	1-2
320-1.2.1.4 Key Power Characteristics. . . . .	1-3
320-1.2.1.5 Power Interruption. . . . .	1-5
320-1.2.1.6 Phase Loading. . . . .	1-6
320-1.2.2 SHIP SERVICE DISTRIBUTION SYSTEM. . . . .	1-6
320-1.2.2.1 Zone Distribution. . . . .	1-10
320-1.2.2.2 Power Distribution to Ventilating Systems. . . . .	1-10
320-1.2.3 EMERGENCY DISTRIBUTION SYSTEM. . . . .	1-11
320-1.2.3.1 Location. . . . .	1-11
320-1.2.3.2 Interconnections Between Emergency and Ship Service Distribution Systems. . . . .	1-12
320-1.2.3.3 Restoring Power from Emergency Switchboards. . . . .	1-12
320-1.2.3.4 Emergency Generator Capacity. . . . .	1-12
320-1.2.4 SPECIAL FREQUENCY POWER SYSTEMS. . . . .	1-12
320-1.2.4.1 Aircraft Starting and Servicing Systems. . . . .	1-13
320-1.2.5 LIGHTING SYSTEM. . . . .	1-14
320-1.2.5.1 Lighting Distribution System. . . . .	1-14
320-1.2.5.2 Lighting Transformers. . . . .	1-14
320-1.2.5.3 Lighting Control. . . . .	1-14
320-1.2.5.4 Isolated Receptacle Circuits. . . . .	1-15
320-1.2.5.5 Phase Loading. . . . .	1-15
320-1.2.6 SHORE POWER. . . . .	1-15
320-1.2.7 ALONGSIDE POWER. . . . .	1-15
320-1.2.8 CASUALTY POWER. . . . .	1-16
320-1.2.8.1 Casualty Power Supply Connections. . . . .	1-16
320-1.2.8.2 Components of the Casualty Power Distribution System. . . . .	1-16
320-1.3 POWER PLANT RELIABILITY. . . . .	1-17
320-1.3.1 GENERAL. . . . .	1-17
320-1.3.2 NORMAL AND ALTERNATE SOURCES OF POWER. . . . .	1-17
320-1.3.2.1 Bus Transfer Equipment. . . . .	1-17
320-1.3.2.2 Routing of Normal and Alternate Feeder Cables. . . . .	1-20

**TABLE OF CONTENTS - Continued**

Chapter/Paragraph	Page	
320-1.3.3	LOAD SHEDDING SYSTEMS. . . . .	1-20
320-1.3.3.1	Staged Load Shedding. . . . .	1-20
320-1.3.3.2	Load Shedding Devices. . . . .	1-21
320-1.3.3.3	Turbine Overtemperature Protection System. . . . .	1-21
320-1.3.3.4	Splitting the Plant. . . . .	1-21
320-1.3.3.5	Automatic Starting of a Standby Generator. . . . .	1-21
320-1.3.4	PLANT RELIABILITY. . . . .	1-22
320-1.3.5	PROTECTION AGAINST POWER LOSS. . . . .	1-22
320-1.4	POWER OUTLETS. . . . .	1-22
320-1.4.1	MULTIPURPOSE POWER OUTLETS. . . . .	1-22
320-1.4.2	120-VOLT GROUNDED RECEPTACLES. . . . .	1-23
320-1.4.2.1	Extension Cords. . . . .	1-23
320-1.4.2.2	120-Volt Receptacle Spacing. . . . .	1-23
320-1.4.2.3	Precautions for Maintenance and Use of 120-Volt Receptacles and Extension Cords. . . . .	1-23
320-1.5	DIRECT CURRENT DISTRIBUTION SYSTEM. . . . .	1-23
320-1.5.1	SURFACE SHIP BATTERY CHARGING SYSTEMS. . . . .	1-23
320-1.5.2	SUBMARINE SYSTEMS. . . . .	1-24
320-1.5.3	SMALL BOAT LOW VOLTAGE SYSTEMS. . . . .	1-24
320-1.5.4	HELICOPTER STARTING AND SERVICING SYSTEMS. . . . .	1-24
320-1.6	DISTRIBUTION SYSTEM EQUIPMENT. . . . .	1-24
320-1.6.1	RELIABILITY AND MAINTENANCE. . . . .	1-24
320-1.6.2	KINDS OF EQUIPMENT. . . . .	1-24
320-1.6.3	SWITCHBOARDS. . . . .	1-24
320-1.6.3.1	Functions. . . . .	1-25
320-1.6.3.2	Construction. . . . .	1-25
320-1.6.3.3	Arrangements. . . . .	1-25
320-1.6.3.4	Electric Plant Control Panel and Electric Plant Control Console. . . . . .	1-26
320-1.6.3.5	Interior Communication and Weapons Control Switchboards. . . . .	1-27
320-1.6.4	MEASURING EQUIPMENT. . . . .	1-27
320-1.6.5	CIRCUIT BREAKERS. . . . .	1-27
320-1.6.5.1	ACB Type. . . . .	1-27
320-1.6.5.2	AQB Type. . . . .	1-27
320-1.6.5.3	AQB-LF Type. . . . .	1-27
320-1.6.5.4	AQB-LL Type. . . . .	1-27
320-1.6.5.5	NQB Type. . . . .	1-27
320-1.6.5.6	ALB Type. . . . .	1-27
320-1.6.5.7	NLB Type. . . . .	1-28
320-1.6.6	FUSES. . . . .	1-28
320-1.6.6.1	Fuse Characteristics. . . . .	1-28
320-1.6.7	CURRENT TIME SENSING AND SIGNALING DEVICE. . . . .	1-28
320-1.6.7.1	CTS Adjustments. . . . .	1-28
320-1.6.8	CURRENT LIMITING DEVICES (CLD). . . . .	1-29

## TABLE OF CONTENTS - Continued

Chapter/Paragraph	Page
320-1.6.9 POWER SYSTEM MONITORS. . . . .	1-29
320-1.6.9.1 Voltage Monitors and Voltage and Frequency Monitors. . . . .	1-29
320-1.6.9.2 Multi-Function Monitor I. . . . .	1-30
320-1.6.9.3 Ground Fault Detectors. . . . .	1-31
320-1.6.10 ELECTRIC CABLES. . . . .	1-31
320-1.6.11 CABLE PENETRATION OF STRUCTURES. . . . .	1-36
320-1.6.11.1 Metal Stuffing Tubes or Multiple Cable Penetrations. . . . .	1-36
320-1.6.11.2 Nipples or Collars. . . . .	1-36
320-1.6.11.3 Cable Segregation for Interference Reduction. . . . .	1-37
320-1.6.12 Transient Voltage Suppression System (TVSS) installation (for Non-Nuclear Vessels, and Non-Propulsion Spaces of Nuclear Vessels). . . . .	1-37
320-1.7 SYSTEM PROTECTION. . . . .	1-37
320-1.7.1 GENERAL. . . . .	1-37
320-1.7.2 GENERATOR REVERSE POWER AND CURRENT PROTECTION. . . . .	1-37
320-1.7.3 SHORT-CIRCUIT OVERCURRENT PROTECTION. . . . .	1-38
320-1.7.4 FUSES. . . . .	1-40
<b>SECTION 2 OPERATION . . . . .</b>	<b>2-1</b>
320-2.1 CHARACTERISTICS OF ELECTRICAL INSTALLATION. . . . .	2-1
320-2.1.1 GENERAL. . . . .	2-1
320-2.1.2 NSTM REFERENCES. . . . .	2-1
320-2.1.3 OTHER REFERENCES. . . . .	2-2
320-2.2 GENERAL PRINCIPLES OF OPERATION. . . . .	2-2
320-2.2.1 OVERVIEW. . . . .	2-2
320-2.2.2 ELECTRIC PLANT OPERATION. . . . .	2-2
320-2.2.2.1 Limits on Number of Parallel Generators. . . . .	2-2
320-2.2.2.2 Diesel Generator Set Loading. . . . .	2-3
320-2.2.3 CHOICE OF POWER SOURCE. . . . .	2-3
320-2.2.4 PREVENTION OF OVERLOADS. . . . .	2-3
320-2.2.5 OPERATION UNDER CASUALTY CONDITIONS. . . . .	2-4
320-2.2.6 APPLICATION OF GENERAL PRINCIPLES. . . . .	2-4
320-2.2.6.1 Automatic Starting of Diesel or Gas Turbine-Driven Emergency and Standby Generators. . . . .	2-5
320-2.2.6.2 Protection of Personnel. . . . .	2-6
320-2.2.6.3 Moisture in Switchboards. . . . .	2-7
320-2.2.6.4 Electric Plant Operating Rules. . . . .	2-7
320-2.2.7 SHORE POWER. . . . .	2-9
320-2.2.7.1 Shore Power Overvoltage Precautions. . . . .	2-9
320-2.2.7.2 Instructions and Procedures for Shore Power Connection. . . . .	2-9
320-2.2.7.3 Operation from Shore Power. . . . .	2-11
320-2.2.7.4 Shore Power Disconnection. . . . .	2-11
320-2.2.7.5 Addition Shore Power Precautions. . . . .	2-11
320-2.2.8 CASUALTY POWER. . . . .	2-11
320-2.2.9 INDICATOR LIGHT COLOR DESIGNATION. . . . .	2-11





## TABLE OF CONTENTS - Continued

Chapter/Paragraph	Page	
320-B.3.2	100-AMP FRAME SIZE CIRCUIT BREAKERS (AQB THERMAL MAGNETIC, AQB ELECTRONIC, AND NQB COUNTERPARTS). . . .	B-6
320-B.3.2.1	AQB-A101 Thermal Magnetic, AQB-A102 and AQB-A103 Electronic, and NQB Counterparts. . . . .	B-6
320-B.3.2.2	AQB-A100/AQB-LF100 Thermal Magnetic and NQB-A100. . .	B-10
320-B.3.3	250-AMP FRAME SIZE CIRCUIT BREAKERS (AQB THERMAL MAGNETIC, AQB ELECTRONIC, AND NQB COUNTERPARTS). . . .	B-11
320-B.3.3.1	SPD. . . . .	B-11
320-B.3.3.2	Cutler-Hammer. . . . .	B-14
320-B.3.3.3	Circuit Breaker Form, Fit, and Function Replacement Considerations. . . . .	B-15
320-B.3.3.4	Attachments for 250-Amp Frame Size AQB/NQB Circuit Breakers. . . . .	B-17
320-B.3.4	400-AMP FRAME SIZE CIRCUIT BREAKERS (AQB THERMAL MAGNETIC, AQB ELECTRONIC, AND NQB COUNTERPARTS). . . .	B-19
320-B.3.4.1	SPD. . . . .	B-19
320-B.3.4.2	Cutler-Hammer. . . . .	B-22
320-B.3.4.3	Circuit Breaker Form, Fit, and Function Replacement Considerations. . . . .	B-22
320-B.3.4.4	Attachments for 400-Amp Frame Size AQB/NQB Circuit Breakers. . . . .	B-24
320-B.3.5	SPD 800-AMP FRAME SIZE CIRCUIT BREAKERS (AQB THERMAL MAGNETIC, AQB ELECTRONIC, AND NQB COUNTERPARTS). . . .	B-26
320-B.3.5.1	SPD AQB-A800 Thermal Magnetic and NQB-A800. . . . .	B-26
320-B.3.5.2	SPD AQB-A802 Electronic and NQB-A802. . . . .	B-26
320-B.3.5.3	Circuit Breaker Form, Fit, and Function Replacement Considerations (Replacing Obsolete SPD AQB-A800/ NQB-A800 with SPD AQB-A802/NQB-A802). . . . .	B-27
320-B.3.5.4	Attachments for SPD 800-Amp Frame Size AQB/NQB Circuit Breakers. . . . .	B-27
320-B.3.6	SPD 1600-AMP FRAME SIZE CIRCUIT BREAKERS (AQB THERMAL MAGNETIC, AQB ELECTRONIC, AND NQB COUNTERPARTS). . . .	B-28
320-B.3.6.1	SPD AQB-A1600 Thermal Magnetic and NQB-A1600. . . . .	B-28
320-B.3.6.2	SPD AQB-A1604 Electronic and NQB-A1604. . . . .	B-29
320-B.3.6.3	Circuit Breaker Form, Fit, and Function Replacement Considerations (Replacing Obsolete SPD AQB-A1600/ NQB-A1600 with SPD AQB-A1604/NQB-A1604). . . . .	B-29
320-B.3.6.4	Attachments for SPD 1600-Amp Frame Size AQB/NQB Circuit Breakers. . . . .	B-30
320-B.4	COORDINATION CONSIDERATIONS FOR REPLACEMENT ELECTRONIC AQB CIRCUIT BREAKERS . . . . .	B-38
320-B.4.1	LONG-TIME DELAY CHARACTERISTICS OF OBSOLETE THERMAL MAGNETIC AND POTENTIAL REPLACEMENT ELECTRONIC AQB CIRCUIT BREAKERS. . . . .	B-38
320-B.4.2	GUIDANCE ON SETTING ELECTRONIC AQB CIRCUIT BREAKERS WHEN USED AS A REPLACEMENT FOR OBSOLETE THERMAL	

**TABLE OF CONTENTS - Continued**

Chapter/Paragraph	Page
MAGNETIC AQB CIRCUIT BREAKERS (CONVERSION TABLES). . .	B-38
320-B.4.2.1 How to Use Conversion Tables. . . . .	B-39
320-B.5 AQB/NQB CIRCUIT BREAKER OBSOLESCENCE/REPLACEMENT MATRIX. . .	B-65
320-B.5.1 PURPOSE AND OTHER CONSIDERATIONS. . . . .	B-65
320-B.5.2 HOW TO USE OBSOLESCENCE MATRIX. . . . .	B-65
320-B.5.2.1 Example of How to Use Obsolescence Matrix. . . . .	B-66
<b>C INSTALLATION GUIDANCE FOR TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS) . . . . .</b>	<b>C-1</b>
320-C.1 PARTS AND SPECIAL TOOLS. . . . .	C-2
320-C.1.1 PARTS LIST. . . . .	C-2
320-C.1.2 SPECIAL TOOLS. . . . .	C-4
320-C.2 DETERMINING LOCATION AND TYPE OF TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS) TO BE INSTALLED. . . . .	C-4
320-C.3 PRE-INSTALLATION PROCEDURES. . . . .	C-6
320-C.4 INSTALLATION PROCEDURES. . . . .	C-7
320-C.4.1 MOUNTING TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS). . .	C-7
320-C.4.2 COMPLETE INSTALLATION . . . . .	C-11
320-C.5 TESTING. . . . .	C-16
320-C.6 POST INSTALLATION PROCEDURES. . . . .	C-17
320-C.6.1 LABEL PLATE FOR TVSS. . . . .	C-17
320-C.6.2 LABEL PLATE FOR CIRCUIT BREAKER. . . . .	C-17
320-C.6.3 INSTALLATION MATRIX. . . . .	C-18
<b>D NON-STANDARD SINGLE-PHASE AND THREE PHASE POWER FOR COMMERCIAL-OFF-THE-SHELF (COTS) . . . . .</b>	<b>D-1</b>

## LIST OF TABLES

Table	Title	Page
320-1-1.	Electric Power System Characteristics at the User Interface . . . . .	1-3
320-1-2.	Ventilating System Classification . . . . .	1-11
320-1-3.	Desired Power Sources . . . . .	1-18
320-1-4.	MIL-C-24643 Cable Application Data . . . . .	1-32
320-1-5.	MIL-C-24640 Cable Application Data . . . . .	1-34
320-1-6.	MIL-C-915 Cable Application Data . . . . .	1-35
320-1-7.	Special Purpose Cable Application Data . . . . .	1-35
320-1-8.	Commercial Cable Application Data . . . . .	1-36
320-2-1.	Parallel Ship Service Generator . . . . .	2-4
320-3-1.	Color Coding on Three-Phase AC Systems . . . . .	3-2
320-A-1.	POWER SUPPLY TYPES IN GENERAL USAGE . . . . .	A-1
320-B-1.	AQB Circuit Breaker Interruption Ratings . . . . .	B-30
320-B-2.	Attachment Information for AQB-A101/A102/A103 Circuit Breakers and NQB Counterparts . . . . .	B-31
320-B-3.	Attachment Information for SPD and Cutler-Hammer 250 Amp Frame Size Circuit Breakers (AQB and NQB) . . . . .	B-33
320-B-4.	Attachment Information for SPD and Cutler-Hammer 400 Amp Frame Size Circuit Breakers (AQB and NQB) . . . . .	B-35
320-B-5.	Attachment Information for SPD 800 Amp Frame Size Circuit Breakers (AQB and NQB) . . . . .	B-36
320-B-6.	Attachment Information for SPD 1600 Amp Frame Size Circuit Breakers (AQB and NQB) . . . . .	B-36
320-B-6A.	Attachment Combinations (not including Motor Operator) and Corresponding Cannon Plug Connector Configurations for SPD 1,600 Amp Frame Size Circuit Breakers (AQB and NQB) . . . . .	B-37
320-B-7.	SPD Obsolete and Actron AQB/NQB Circuit Breaker Cannon Plug Connector Configurations for Motor Operators and Installation Guidelines for Motor Operator Field Change-Out . . . . .	B-38
320-B-8.	Long-time Delay Tripping Characteristics for AQB-A101/AQB-A102/AQB-A103 Circuit Breakers . . . . .	B-39
320-B-9.	Long-time Delay Tripping Characteristics for AQB-A250/AQB-A252/AQB-A253 Circuit Breakers . . . . .	B-40

**LIST OF TABLES - Continued**

Table	Title	Page
320-B-10.	Long-time Delay Tripping Characteristics for AQB-LF250/AQB-LF252/AQB-L253 Circuit Breakers . . . . .	B-41
320-B-11.	Long-time Delay Tripping Characteristics for AQB-A400/AQB-A402 Circuit Breakers . . . . .	B-41
320-B-12.	Long-time Delay Tripping Characteristics for AQB-LF400/AQB-LF402/AQB-LL400/AQB-L400 Circuit Breakers . . . . .	B-42
320-B-13.	Long-time Delay Tripping Characteristics for AQB-A800/AQB-A802 Circuit Breakers . . . . .	B-42
320-B-14.	Long-time Delay Tripping Characteristics for AQB-A1600/AQB-A1604 Circuit Breakers . . . . .	B-43
320-B-15.	AQB-A101 to A102 Type “E1” and “E2” Conversion Settings . . . . .	B-43
320-B-16.	AQB-A101 to AQB-A103 Conversion Settings . . . . .	B-46
320-B-17.	AQB-A101 to AQB-A103RMS Conversion Settings . . . . .	B-48
320-B-18.	AQB-A250 to AQB-A252 Conversion Settings . . . . .	B-51
320-B-19.	AQB-A250 to AQB-A253 Conversion Settings . . . . .	B-53
320-B-20.	AQB-LF250 to AQB-LF252 Conversion Settings . . . . .	B-56
320-B-21.	AQB-LF250 to AQB-L253 Conversion Settings . . . . .	B-57
320-B-22.	AQB-A400 to AQB-A402 Conversion Settings . . . . .	B-59
320-B-23.	AQB-LF400 to AQB-LF402 Conversion Settings . . . . .	B-61
320-B-24.	AQB-LF400 to AQB-LL400/AQB-L400 Conversion Settings . . . . .	B-62
320-B-25.	AQB-A800 to AQB-A802 Conversion Settings . . . . .	B-63
320-B-26.	AQB-A1600 to AQB-A1604 Conversion Settings . . . . .	B-64
320-B-27.	List of Obsolete SPD AQB/NQB-A101 Circuit Breaker APLs Across Platforms . . .	B-66
320-B-28.	Obsolete Carrier Unique AQB/NQB-A101 Breakers and Replacements . . . . .	B-67
320-B-29.	Obsolete Surface Unique AQB/NQB-A101 Breakers and Replacements . . . . .	B-79
320-B-30.	Obsolete Sub Unique AQB/NQB-A10 Breakers and Replacements . . . . .	B-89
320-B-31.	Obsolete Carrier/Surface/Sub AQB/NQB-A101 Breakers and Replacements . . . . .	B-91
320-B-32.	Obsolete Carrier/Surface Unique AQB/NQB-A101 Breakers and Replacements . . .	B-97
320-B-33.	List of Obsolete SPD AQB/NQB-250 Circuit Breaker APLS Across Platforms. . . .	B-108

**LIST OF TABLES - Continued**

Table	Title	Page
320-B-34.	Obsolete Carrier Unique AQB/NQB-250 Breakers and Replacements . . . . .	B-110
320-B-35.	Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements . . . . .	B-121
320-B-36.	Obsolete Sub Unique AQB/NQB-250 Breakers and Replacements . . . . .	B-166
320-B-37.	Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and Replacements . . . . .	B-170
320-B-38.	Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements . . . . .	B-186
320-B-39.	Obsolete Carrier/Sub AQB/NQB-250 Breakers and Replacements . . . . .	B-221
320-B-40.	Obsolete Surface/Sub AQB/NQB-250 Breakers and Replacements . . . . .	B-222
320-B-41.	List of Obsolete SPD AQB/NQB-400 Circuit Breaker APLS Across Platforms . . .	B-225
320-B-42.	Obsolete Carrier Unique AQB/NQB-400 Breakers and Replacements . . . . .	B-226
320-B-43.	Obsolete Surface Unique AQB/NQB-400 Breakers and Replacements . . . . .	B-232
320-B-44.	Obsolete Sub Unique AQB/NQB-400 Breakers and Replacements . . . . .	B-273
320-B-45.	Obsolete Carrier/Surface/Sub AQB/NQB-400 Breakers and Replacements . . . . .	B-275
320-B-46.	Obsolete Carrier/Surface AQB/NQB-400 Breakers and Replacements . . . . .	B-276
320-B-47.	Obsolete Carrier/Sub AQB/NQB-400 Breakers and Replacements . . . . .	B-299
320-B-48.	Obsolete Surface/Sub AQB/NQB-400 Breakers and Replacements . . . . .	B-301
320-B-49.	List of Obsolete SPD AQB/NQB-800 Circuit Breaker APLS Across Platforms. . . .	B-303
320-B-50.	Obsolete Carrier Unique AQB/NQB-800 Breakers and Replacements . . . . .	B-304
320-B-51.	Obsolete Surface Unique AQB/NQB-800 Breakers and Replacements . . . . .	B-312
320-B-52.	Obsolete Carrier/Surface AQB/NQB-800 Breakers and Replacements . . . . .	B-323
320-B-53.	List of Obsolete SPD AQB/NQB-1600 Circuit Breaker APLS Across Platforms . . .	B-330
320-B-54.	Obsolete Carrier Unique AQB/NQB-1600 Breakers and Replacements . . . . .	B-330
320-B-55.	Obsolete Surface Unique AQB/NQB-1600 Breakers and Replacements . . . . .	B-342
320-B-56.	Obsolete Sub Unique AQB/NQB-1600 Breakers and Replacements . . . . .	B-344
320-B-57.	Obsolete Carrier/Surface/Sub Unique AQB/NQB-1600 Breakers and Replacements .	B-350
320-B-58.	Obsolete Carrier/Surface Unique AQB/NQB-1600 Breakers and Replacements . . .	B-352
320-B-59.	Obsolete Carrier/Sub Unique AQB/NQB-1600 Breakers and Replacements . . . . .	B-354

**LIST OF TABLES - Continued**

Table	Title	Page
320-B-60.	Obsolete Surface/Sub Unique AQB/NQB-1600 Breakers and Replacements . . . . .	B-355
320-C-1-1.	Parts List for TVSS Installation . . . . .	C-2

## LIST OF ILLUSTRATIONS

Figure	Title	Page
320-1-1.	Combatant Ship Service Radial Distribution with Dedicated Emergency Generators .	1-7
320-1-2.	Combatant Ship Service Radial Distribution with Dual Purpose Generators . . . . .	1-8
320-1-3.	Surface Ship Zonal Distribution System (Normal and Alternate Power Supplies) . .	1-9
320-1-4.	Special Frequency Distribution Using a Solid-State Frequency Converter . . . . .	1-13
320-1-5.	Overcurrent Protection Circuit (Typical) . . . . .	1-30
320-1-6.	Time-Current Characteristics of Selectively Tripping Circuit Breakers . . . . .	1-39
320-3-1.	Securing Copper Ferrule to Conductor (Typical) . . . . .	3-3
320-3-2.	Forming Die . . . . .	3-3
320-3-3.	Portable Casualty Power Cable Ends(DC Systems Only) . . . . .	3-4
320-C-2-1A.	Typical Electrical Schematics With TVSS Units Installed in Optimal Location . . . .	C-5
320-C-2-1B.	Typical Electrical Schematics With TVSS Units Installed in Optimal Location . . . .	C-6
320-C-2-1C.	Typical Electrical Schematics With TVSS Units Installed in Optimal Location . . . .	C-6
320-C-4.1.	Installation for Delta . . . . .	C-12
320-C-4.2.	Installation for WYE Configuration . . . . .	C-12
320-C-4-3.	Sample T-Bar Assembly for Items 1A, 1C, 1E, 1G, 1H, and 1J . . . . .	C-13
320-C-4-4.	Sample TVSS Mounting Template for Items 1A, 1C, 1E, 1G, 1H, and 1J . . . . .	C-14
320-C-4-5.	Sample T-Bar Assembly for Items 1, 1B, 1D, and 1F . . . . .	C-15
320-C-4-6.	Sample TVSS Mounting Template for Items 1, 1B, 1D, and 1F . . . . .	C-16
320-C-6-1.	Label Plate for TVSS . . . . .	C-17
320-C-6-2.	Label Plate for Circuit Breaker . . . . .	C-17
320-C-6-3.	for Power Panel Cover . . . . .	C-18
320-C-6-4.	Guarantee Information Tag . . . . .	C-18
320-D-1-1.	NAVSEA Standard Drawing 7512881 (Three-Phase) . . . . .	D-2
320-D-1-2.	NAVSEA Standard Drawing 7598285 (Single-Phase) . . . . .	D-3





## CHAPTER 320

### ELECTRIC POWER DISTRIBUTION SYSTEMS

#### SECTION 1

#### DESCRIPTION OF ELECTRICAL SYSTEMS AND EQUIPMENT

##### 320-1.1 GENERAL.

320-1.1.1 IMPORTANCE OF ELECTRIC POWER. Electric power is essential to a modern naval ship's fighting and functional effectiveness. Electric power trains elevate gun turrets and missile launchers; operate the rudder's hydraulic system; run auxiliaries; provide light; and power interior communication, weapons control, radio, radar, sonar, and missile systems. A ship without electric power is useless as a fighting or supporting unit and is almost totally defenseless against enemy attack.

320-1.1.2 SAFETY PRECAUTIONS. Safety precautions must always be taken when working around electrical equipment and circuits to avoid injury and possibly death of personnel, and equipment damage. See **NSTM Chapter 300, Electric Plant - General**, for electrical safety precautions. Paragraphs [320-1.2.5.4](#), [320-1.2.8.2](#), [320-2.2.6.2](#), and [320-2.2.6.4](#) of this document provide additional safety details for electrical distribution systems.

320-1.1.3 DISTRIBUTION SYSTEMS. The distribution system is the vital link connecting the generators that produce electric power to the equipment that uses it. It transmits electric power from the power source to the power user. The distribution system also protects (by means of circuit breakers and fuses) itself, and its generators from damage that might otherwise be caused by faults in the system or connected equipment.

320-1.1.3.1 Alternating Current or Direct Current. The primary power distribution system installed in ships is alternating current (ac). Direct current (dc) distribution systems are used for combat systems, auxiliary systems, and emergency systems in submarines. Small dc networks, supplied by rectifiers or ac/dc motor-generator sets, supply outlets for battery charging. The New Attack Submarine (NSSN) has high voltage dc generators that supply static frequency converters to produce 450V, three-phase, 60 Hz power for the ship's user equipment, and to provide dc power for main battery charging.

##### 320-1.2 ALTERNATING CURRENT DISTRIBUTION SYSTEMS.

320-1.2.1 VOLTAGE, PHASE, AND FREQUENCY. The primary power distribution voltage, phase, and frequency used on U.S. Navy ships is 450 volts (V), three-phase, 60 hertz (Hz). Secondary voltage, phase, and frequency is 120V, three-phase, 60 Hz. It is supplied from the 450V system through transformer banks. Lighting distribution systems are 120V, three-phase, 60 Hz, and are supplied from the power circuits through transformer banks. Single-phase power is available from the 450V and 120V systems. Most ships also have 450V and 120V, 400-Hz power systems for supplying weapons systems and electronic equipment, and for servicing aircraft and landing craft. Some aircraft carriers have 4160V, three-phase, 60 Hz generators and main switchboards that supply the 450V AC system through transformers.

320-1.2.1.1 System Grounding. All ac distribution systems on U.S. Navy ships are ungrounded. However, certain avionics shops, aircraft servicing systems, and landing craft air cushion (LCAC) servicing outlets are supplied from three-phase, four-wire systems that are supplied by transformers with a grounded, wye-connected sec-

ondary and single-phase, three wire grounded outlets with two pole ground fault current interruption (GFCI) protection are provided where required by the user equipment (see paragraph [320-1.2.1.3](#)). Only one ground connection point is allowed for each grounded power system. Ungrounded electrical systems have no intentional connections between the electrical conductors and the ground (ship's hull). These systems were chosen for their higher reliability because grounding of a single conductor will not typically produce enough fault current to interrupt power. Grounds must be removed as soon as possible to maintain this advantage, however, because a second ground on another phase will cause a power loss and could endanger personnel.

**320-1.2.1.2 Types of Power.** Power system bus voltages are rated 450V and 120V, while nominal voltage ratings for utilization equipment are 440V and 115V. The lower utilization equipment voltage ratings account for the voltage drops that are normal in any electrical distribution system. Voltage at the utilization equipment terminals can vary because of changing loads and their effect on generator voltage and distribution cable voltage drops. The various groups of utilization equipment aboard Navy ships require an electrical power supply with different characteristics. To meet the needs of these groups, standards have been established for the interface (the point at which the user equipment connects to the power system). These standards' power characteristics have been coordinated with the North Atlantic Treaty Organization (NATO); they are listed in [Table 320-1-1](#). The following paragraphs define the three types of electric power supply at the user equipment interface.

- a. Type I, 60-Hz power. The 440V and 115V power supplied to equipment by the ship's power and lighting distribution systems is designated type I power.
- b. Type II and Type III, 400-Hz power. The 440V and 115V, 400-Hz power supplied to equipment by 400-Hz motor generator sets or solid-state converters is designated type II or type III. As seen in [Table 320-1-1](#), the tolerances for type III power are much tighter than the tolerances for type II power. In general, the ship service 400-Hz distribution system supplies type II power to the loads. Where loads require more precise voltage or frequency regulation, the system is designed or equipment (such as line voltage regulators) is added to ensure that the type III power characteristics are met.

**320-1.2.1.3 Special Power Types.** Grounded three-phase, four-wire power is provided for avionics shops, aircraft servicing, and LCAC servicing as follows:

- a. Type I, 115/200V, 60-Hz power for certain avionics shops where equipment requires a grounded three-phase power source.
- b. Type III, 115/200V, 400-Hz power for avionics shops.
- c. 115/200V, 400-Hz power for starting and servicing aircraft with the characteristics required as defined by the Naval Air Systems Command (NAVAIR). Typically, aircraft starting stations provide power to the aircraft in accordance with MIL-STD-704, **Aircraft Electric Power Characteristics**, which includes steady-state voltage limits of 113V to 118V, measured at the aircraft's external power receptacle. Similar power is provided for LCAC servicing outlets. The 115/200V at the user equipment terminals of a grounded four-wire system is nominally 115V, measured from a phase conductor to neutral, and 200V measured between any two phases. The actual voltage will vary because of changes in the system loads.
- d. Non-Standard Single-Phase and Three-Phase Power for Commercial-Off-The-Shelf (COTS) Equipments. COTS equipment shall utilize, to the maximum extent practicable, standard power in accordance with MIL-STD-1399, Section 300. When approved, non-standard power shall be supplied to COTS equipment, that is designed to operate in a grounded distribution system, in accordance with NAVSEA Standard Drawings 7512881 (Three-Phase) and 7598285 (Single-Phase), which are included in [Appendix D](#).

320-1.2.1.4 Key Power Characteristics. The power characteristics listed in [Table 320-1-1](#) are fully defined in MIL-STD-1399, **Interface Standard for Shipboard System**, Section 300A. The following describes selected power characteristics for the user equipment terminals as specified in [Table 320-1-1](#):

- a. **Nominal Frequency and Frequency Tolerance**. Nominal frequency is the designated frequency of the power system. In actual fact, the system often operates at a frequency that is slightly above or below this nominal value. The frequency tolerance defines the maximum and minimum permissible system frequency, excluding transients and modulation.
- b. **Nominal User Voltage and User Voltage Tolerance**. Nominal user voltage is the designated voltage at the user equipment terminals. The actual terminal voltage can vary from this nominal value because of operator adjustments of the generator voltage, varying load currents in the cables supplying the user equipment (which causes varying distribution system voltage drops), and various other reasons. User voltage tolerances define the maximum and minimum permissible voltages at the user equipment terminals. The distribution system is designed to limit the voltage drops in the system so that the combination of generator voltage regulation and distribution voltage drops are still within the user voltage tolerances for the required type of power. The voltage tolerances for any one line-to-line voltage are slightly wider than those for the average of all three-phase voltages. This allows for some imbalance in the individual phase voltages.

**Table 320-1-1.** Electric Power System Characteristics at the User Interface

Characteristics	Type I	Type II <sup>1</sup>	Type III <sup>1</sup>
Frequency:			
(a) Nominal frequency	60 Hz	400 Hz	400 Hz
(b) Frequency tolerances	Plus or minus 3 percent (5 percent for Submarines)	Plus or minus 5 percent	Plus or minus 1/2 percent
(c) Frequency modulation	1/2 percent	1/2 percent	1/2 percent
(d) Frequency transient			
(1) Tolerance	Plus or minus 4 percent	Plus or minus 4 percent	Plus or minus 1 percent
(2) Recovery time	2 seconds	2 seconds	0.25 second
(e) The worst case frequency excursion from nominal frequency resulting from (b), (c), and (d) (1) combined except under emergency conditions	Plus or minus 5-1/2 percent	Plus or minus 6-1/2 percent	Plus or minus 1-1/2 percent
Voltage:			
(f) Nominal user voltage	440, 115 or 115/200V rms <sup>2</sup>	440, 115V or rms	440 or 115V 115/200V rms <sup>2</sup>
(g) User voltage tolerance	(See paragraph <a href="#">320-1.2.1.2</a> )	(See paragraph <a href="#">320-1.2.1.4.b</a> )	
(1) Average of the three line-to-line voltages	Plus or minus 5 percent	Plus or minus 5 percent	Plus or minus 2 percent (Plus or minus 1/2 percent for avionic shops only)

**Table 320-1-1.** Electric Power System Characteristics at the User Interface -

Continued

Characteristics	Type I	Type II <sup>1</sup>	Type III <sup>1</sup>
(2) Any one line-to-line voltage including (g) (1) and line voltage unbalance (h)	Plus or minus 7 percent	Plus or minus 7 percent	Plus or minus 3 percent (plus 3V minus 2V) <sup>2</sup> Plus or minus 1-1/6 percent for avionic shops only)
(h) Line voltage imbalance	3 percent (0.5 percent for 440V) (1 percent for 115V; for submarines)	3 percent	2 percent (1 percent for avionic shops only)
(i) Voltage modulation	2 percent	2 percent	1 percent
(j) Voltage transient			
(1) Voltage transient tolerance	Plus or minus 16 percent	Plus or minus 16 percent	Plus or minus 5 percent
(2) Voltage transient recovery time	2 seconds	2 seconds	0.25 second
(k) Voltage spike (peak value, includes, fundamental)	Plus or minus 2,500V (440V system) 1,000V (115V system)	Plus or minus 2,500V (440V system) 1,000V (115V system)	Plus or minus 2,500V (440V system) 1,000V (115V system)
(l) The maximum departure voltage resulting from (g) (1), (g) (2), (h), and (i) combined, except under transient or emergency conditions	Plus or minus 6 percent	Plus or minus 6 percent	Plus or minus 2-1/2 percent
(m) The worst case voltage excursion from nominal user voltage resulting from (g) (1), (g) (2), (h), (i) and (j) (1) combined, except under emergency conditions	Plus or minus 20 percent	Plus or minus 20 percent	Plus or minus 5-1/2 percent
(n) Insulation resistance test			
(1) Surface ships	500-Vdc	500-Vdc	500-Vdc
(2) Submarines active ground detector test	megohmmeter 500V average full wave rectified dc	megohmmeter N/A	megohmmeter N/A
Waveform (voltage):			
(o) Maximum total harmonic	5 percent	5 percent	3 percent
(p) Maximum single harmonic	3 percent	3 percent	2 percent
(q) Maximum deviation factor	5 percent (3 percent for submarines)	5 percent (3 percent for submarines)	5 percent (3 percent for submarines)
Emergency conditions:			

**Table 320-1-1.** Electric Power System Characteristics at the User Interface -

Continued

Characteristics	Type I	Type II <sup>1</sup>	Type III <sup>1</sup>
(r) Frequency excursion <sup>3</sup>	Minus 100 to plus 12 percent	Minus 100 to plus 12 percent	Minus 100 to plus 12 percent
(s) Duration of frequency excursion	Up to 2 minutes	Up to 2 minutes	Up to 2 minutes
(t) Voltage excursion	Minus 100 to plus 35 percent	Minus 100 to plus 35 percent	Minus 100 to plus 35 percent
Emergency conditions (Cont'd):			
(u) Duration of voltage excursion			
(1) Lower limit (minus 100 percent)	Up to 2 minutes	Up to 2 minutes	Up to 2 minutes
(2) Upper limit (plus 35 percent)	2 minutes	0.17 second	0.17 second
NOTES:			
1. Type II or III power is provided by deviation request only. Type I, 60-Hz power is used for new user equipment development unless a deviation request is granted.			
2. For 115/200V, four-wire grounded systems, the characteristics apply to the line to neutral power unless the parameter is inappropriate; for example, line balance would not apply.			
3. Frequency will not decrease to (minus 100 percent) without a decrease in voltage.			

- c. **Line Voltage Imbalance Tolerance** . Power system equipment is designed to produce balanced three-phase voltages, and every effort is made in designing the electrical distribution systems to connect loads equally across each of the three phases. Because of normal variations in the amount of single-phase loads, the system is seldom perfectly balanced and some differences will be measured in the individual phase voltages. The difference between the minimum and maximum values of the individual phase voltages is limited to the percentages of nominal voltage indicated in [Table 320-1-1](#), or:

$$\left( \frac{E_{\max} - E_{\min}}{E_{\text{nominal}}} \right) \times 100 < \% \text{ Unbalance Tolerance}$$

Figure c.

- d. **Voltage Frequency Transient Tolerance Recovery Time** . Suddenly applying a large load (such as a fire pump), tripping a generator off-line, or operating a circuit breaker to clear a fault can result in system voltages or frequencies that are outside the normal tolerances. However, power generators' governors and voltage regulators respond to these large system changes and restore voltage and frequency to normal values within approximately 2 seconds (within 0.25 second for type III power systems). Wider voltage and frequency tolerances are allowed during the transient condition, provided values return to the normal tolerance limits within the specified recovery time.

320-1.2.1.5 Power Interruption. From time to time, electric power will be interrupted. These interruptions can occur because of a loss of the power source, power system fault or user equipment casualty, training exercise, system test, or operator error. Power interruptions can last from less than 100 milliseconds (for example, automatic transfer to the alternate source) to several minutes. When the power interruption is due to loss of the 60-Hz generator's prime mover, the frequency decays to 40 Hz in approximately 5 to 20 seconds (depending on the type of prime mover, initial load, and inertia of the generator set). The 60-Hz system voltage initially remains unaffected, but may start to decay as the generator frequency drops below 40 Hz. Loss of input power to a 60-

400-Hz motor generator (MG) set will cause the frequency and voltage of the 400-Hz system to decay. A voltage and frequency monitor (VFM) will sense the out-of-specification condition and trip the MG 400-Hz output breaker within 100 to 170 milliseconds. Solid-state frequency changers monitor input power and will shut themselves down within 2 milliseconds of input power loss, resulting in a 400-Hz power interruption.

320-1.2.1.6 Phase Loading. In the original design plans, power and lighting distribution are carefully designed to ensure equal or nearly equal division of the load among the three system phases. Equal division of single-phase loads among the phases should be maintained, as much as possible, whenever lighting or power equipment is relocated or added. Imbalance can be corrected by reconnecting single-phase loads in one or more local distribution panels or boxes from heavily loaded phases to those that are less heavily used. When loads are shifted to other phases, ensure that loads that are required to remain on the same phase as another component (such as synchro reference leads) are also shifted.

320-1.2.2 SHIP SERVICE DISTRIBUTION SYSTEM. Most ship service power distribution systems are either radial or combination radial and zonal systems. Power flows outward from the switchboards to the loads either directly or through load centers and power distribution panels. In a radial system, each load is connected to only one switchboard at any one time. [Figure 320-1-1](#) and [Figure 320-1-2](#) illustrate the distribution systems for typical combatant ships. [Figure 320-1-3](#) illustrates a combined radial and zonal distribution system. The major components distributing power from the generating sources to the individual loads are described as follows:

- a. Ship Service Switchboards. Switchboards provide a point of connection for ship service generators and local generator controls. They are the starting points of the distribution system, feeding power directly to large and vital loads (such as steering gear) and supplying power to load centers and power panels for further distribution to loads. The number and location of ship service switchboards depends on the main machinery compartmentation, as well as the number and location of the ship service generators. Switchboards are usually located near the generators they serve and are spread as far apart as possible to minimize the possibility of a single casualty damaging more than one of them.
- b. Bus Ties. Bus ties can be closed to interconnect ship service switchboards so that one switchboard can feed power from its generator to one or more of the other switchboards. Bus ties can also connect two or more switchboards together to parallel their generator plants.
- c. Load Centers. Load centers are installed on most large- and some medium- sized ships to supply groups of loads and large auxiliaries located in the same general area. Load centers reduce the number of switchboard feeder circuits. They are located centrally to the loads they feed to minimize the size, weight, and length of cabling to the loads. Load centers may supply loads directly, or may feed power panels that, in turn, feed the loads.
- d. Power Distribution Panels. Power distribution panels provide for control of selected portions of the distribution system. They supply groups of loads that are located in close proximity to each other, or that operate together to perform a function. Power panels can also feed other power panels, distribution panels, or distribution boxes that in turn feed loads. Dedicated panels are provided for the following loads or groups of loads:
  - 1 Aqueous film forming foam (AFFF) stations
  - 2 Galley
  - 3 Steering gear
  - 4 Ventilation systems
  - 5 Electronics
  - 6 Lighting
  - 7 Machinery spaces
  - 8 Weapons systems
  - 9 115V receptacles

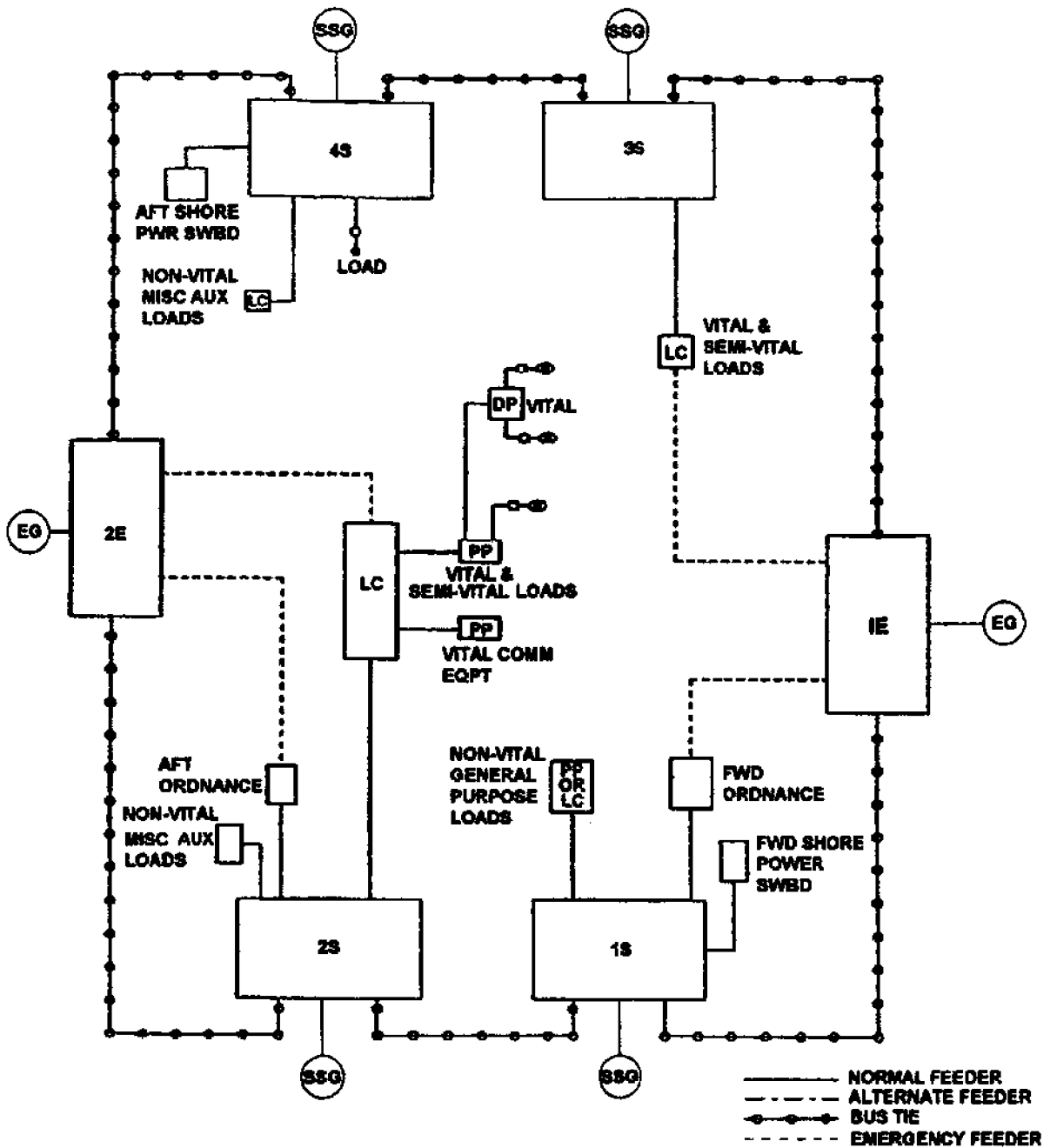


Figure 320-1-1. Combatant Ship Service Radial Distribution with Dedicated Emergency Generators

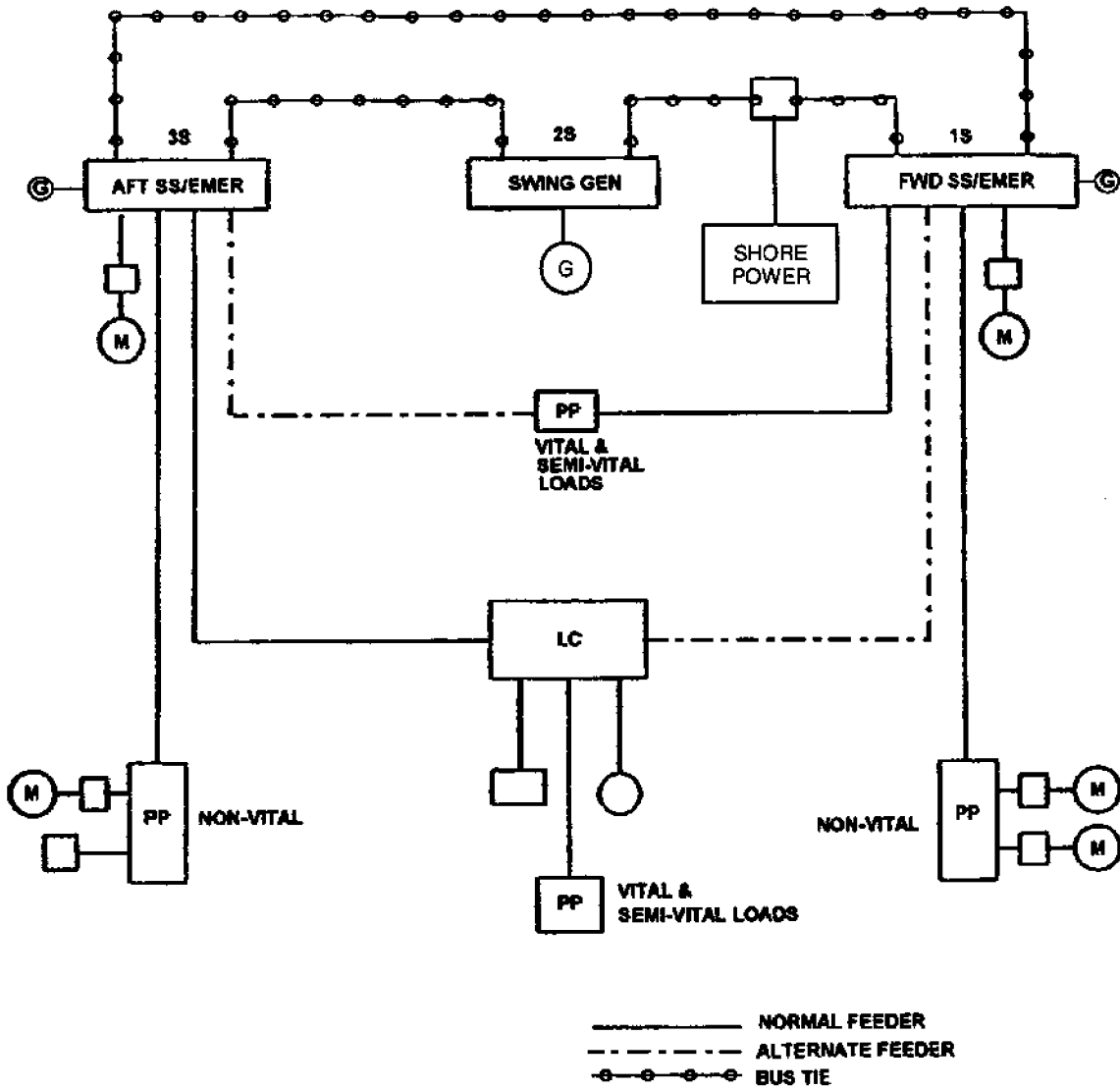


Figure 320-1-2. Combatant Ship Service Radial Distribution with Dual Purpose Generators



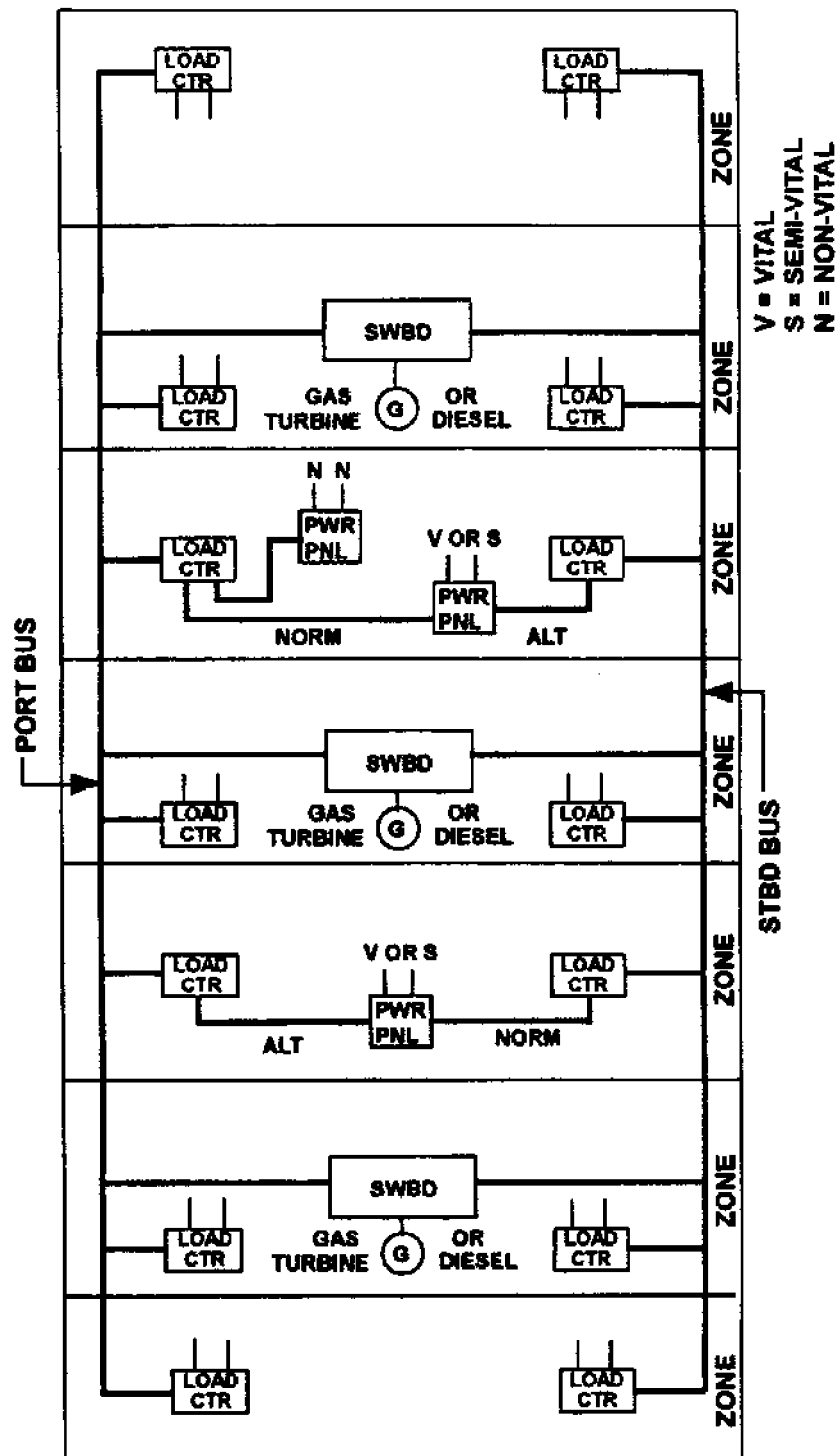


Figure 320-1-3. Surface Ship Zonal Distribution System (Normal and Alternate Power Supplies)

Only loads associated with the particular function can be connected to these panels. To minimize the amount of cabling required aboard ship, the power panels are located centrally to the loads.

**320-1.2.2.1 Zone Distribution.** On certain large ships, such as aircraft carriers, a zone distribution system is used. The ship is divided into a number of vertical zones, using main subdivision bulkheads as boundaries. Each zone contains one or more load centers that supply power to the electrical loads located there. One or more ship service or emergency switchboards feed the load center. Zone distribution reduces the amount of cabling and watertight penetrations required, and simplifies damage control and maintenance. Some load centers are provided with casualty power terminals and thus are considered sources of casualty power. A modification to the above zone distribution system is also being installed that combines the zonal system with radial load distribution from some load centers. This system utilizes a port and starboard bus as illustrated in [Figure 320-1-3](#). In this system the switchboards provide power to the port and starboard bus. Each zone has at least one port and one starboard load center connected to the respective bus. These load centers provide normal and alternate power to loads within the zone. This distribution system is used to further reduce cable length and minimize cable penetrations of watertight bulkheads. This improves ship producibility and results in lower installation cost.

**320-1.2.2.2 Power Distribution to Ventilating Systems.** The ship's ventilating system is divided into six different classes of fans, each designed to operate only under specific ship material conditions. To maximize the amount of power available for propulsion, electronics, and other mission-essential functions, the power supplies to nonvital ventilation systems are designed so that they can be secured easily. It is also necessary to quickly secure circle W supply and exhaust fans that serve spaces manned during general quarters if there is a chemical, biological, or radiological (CBR) threat. To simplify control of these ventilation systems, different classes of fans are assigned to one of the following three classes of ventilation system power panels:

**320-1.2.2.2.1 Z Power Panels.** Z power panels supply nonessential Z, essential Z, and Y ventilating systems. Z panels are fed directly from a ship service switchboard or load center, so that whole groups of Z, and Y fans can be secured.

**320-1.2.2.2.2 Circle W Power Panels.** Circle W power panels supply only circle W or class X fans. Separate circle W power panels are provided for circle W ventilation systems servicing machinery spaces and emergency generator rooms, with start and stop control provided outside the space but adjacent to the access. (On certain ships, this remote control function is incorporated into the enclosed operating station.) Circle W panels generally receive two sources of supply through a bus transfer switch. The normal supply is from a ship service switchboard or load center. The alternate supply is generally from an emergency switchboard or a ship service switchboard or load center associated with a different generating plant.

**320-1.2.2.2.3 Class W Power Panels.** Separate power panels are provided for class W ventilation associated with the collective protection system (CPS). Other class W ventilation (recirculating fans serving spaces manned during general quarters) can be supplied from any power panel other than a Z or circle W panel. Panels to which class W fans are connected usually receive two sources of supply, either normal and alternate or normal and emergency. These fans normally operate under all ship material conditions and are only secured to prevent the spread of smoke and fumes.

**320-1.2.2.2.4 Deenergizing Power Panels.** Circle W and Z ventilation power distribution panels can be momentarily deenergized by opening the switchboard circuit breaker that supplies power to the panel. This will deenergize the fan controllers long enough to drop out the low voltage protection (LVP) control circuit, even if the panels are supplied through automatic bus transfer switches. The circuit breaker should then be closed, reenergizing the feeder so that fans can be restarted locally when dictated by command. Fans serving spaces in which

fixed inert gas fire-protection systems are installed are provided with a pressure-operated switch that stops the fan motor when inert gas is released. [Table 320-1-2](#) outlines the power supply, motor controller, and material conditions under which each class of fan is operated or secured.

**320-1.2.3 EMERGENCY DISTRIBUTION SYSTEM.** The emergency power system is a highly reliable power source for vital ship functions. It includes one or more emergency generators with dedicated switchboards and an emergency distribution system that is separate from the ship service distribution system. Each feeder from the emergency switchboards supplies distribution panels or individual loads that require emergency power. An emergency feeder may supply remote transformer banks (through automatic bus-transfer equipment) for emergency lighting. Some ships have dual purpose generators in lieu of dedicated emergency generators. These generators are configured to come on line following loss of one or more operating generators. Submarine switchboards are normally called vital and nonvital instead of emergency and ship service.

**320-1.2.3.1 Location.** Wherever practical, emergency generators and switchboards are installed near the center line and above the water line to minimize the risk of loss from battle damage or flooding. Emergency generators, switchboards, and feeders are situated to obtain maximum practical separation from ship service generators, switchboards, and feeders. This arrangement minimizes the possibility of physical damage to both systems from a single casualty.

**Table 320-1-2.** Ventilating System Classification

Characteristics	Operation	Power Source	Control
W (recirculating and CPS supply and exhaust)	Operate under all material conditions, secured only to prevent spread of damage	CPS supplied from dedicated panels, Other class W supplied from any power panel other than circle W or Z panel generally has two power sources	Local start and stop control with low voltage release (LVR) or low voltage release effect (LVRE)
Circle W (supply and exhaust fans serving spaces manned during general quarters)	Secured by switchboard operator when chemical attack alarm sounds	Circle W power panel, generally having two sources of power	Local start and stop control with low voltage protection (LVP)
Circle W (supply and exhaust fans serving machinery spaces and emergency generator rooms)	Secured by switchboard operator at sounding of chemical attack alarm	Separate circle W power panels	Local and remote start and stop control with LVP. Remote control located outside space adjacent to access
X (blowout fans)	Normally secured, operate only with approval of damage control officer when blowout of a space is required	Circle W power panels	
Essential Z	May be energized during prolonged periods of general quarters to permit preparation of food, operation of sanitary facilities, etc.	Z power panels	Local start and stop control with LVP
Y	Operate only when space served is in operation.	Z power panels	Local start and stop control

**Table 320-1-2.** Ventilating System Classification - Continued

Characteristics	Operation	Power Source	Control
Z (recirculating systems serving nonvital spaces)	Secured when ship goes into condition ZEBRA	Z power panels	

320-1.2.3.2 Interconnections Between Emergency and Ship Service Distribution Systems. The emergency switchboard is connected by bus ties to one or more ship service switchboards. One of these ship service switchboard feeders is designated as the normal source of power to the emergency switchboard. When the normal source of ship service power experiences a power failure, bus transfer equipment automatically transfers the emergency switchboard to the alternate source of ship service power. Upon return of voltage to the normal power source, the bus transfer will automatically retransfer to the normal source. If both sources of ship service power fail, the emergency generator automatically starts. When the emergency generator reaches approximately 90 percent of rated voltage, the generator breaker closes and the emergency generator supplies power to the emergency switchboard. Transfer from the emergency generator to either ship service source and shutdown of the emergency generator must be done manually. With this arrangement, the emergency switchboard and emergency distribution system are almost always energized and ready to supply power to vital loads.

320-1.2.3.3 Restoring Power from Emergency Switchboards. Emergency switchboards can feed emergency generator power back through bus ties to connected ship service switchboards. A selector switch on the emergency bus transfer unit permits manual operation of bus transfer circuit breakers to make the connection from the emergency switchboard back to the ship service switchboard. This feature can be used in cold ship starting and damage control operations.

320-1.2.3.4 Emergency Generator Capacity. The capacity of emergency generators is generally not sufficient to provide power to operate all ship system loads. Loads assigned to the emergency distribution system are limited to minimize the possibility of overloading the emergency generator. The electric plant operators must still take care to prevent overloading of emergency generators (refer to [paragraphs 320-2.2.4](#) through [320-2.2.4.4](#) for operating instructions).

320-1.2.4 SPECIAL FREQUENCY POWER SYSTEMS. In addition to the 60-Hz power supplied by the ship service and emergency generators, most ships also have a special frequency 400-Hz power distribution system. The following ship classes use motor-generator sets to provide special power: CV's, CVN's, LST's, LHA's, LPD's, LPH's, AOE's, AOR's, AE's, AS's, AD's, AFS's, older CG's and CGN's, and some SSN's and SSBN's. On FFG's, CG 47 class, LHD's, DDG's, LSD's, and DD's, the special frequency power is usually provided by static 60-Hz to 400-Hz frequency converters (even though some motor generators are used for dedicated loads). The 400-Hz power is used by communications, combat systems, navigation and other electronic systems. The system features described for the 60-Hz power distribution also apply to the special frequency distribution system. The major components of the special distribution system are the following:

- a. **Special Frequency Switchboards** . Special frequency power is usually distributed through switchboards interconnected by bus-ties. The switchboards are also the connection point for the special frequency power sources. The number and location of the special frequency switchboards (1SF, 2SF,...) installed depends on the number and location of the supply equipment. The switchboards are spaced as far apart as possible to minimize the possibility of a single casualty damaging more than one of them.
- b. **Bus-Ties** . Bus-ties interconnect the special frequency switchboards. This allows any switchboard to be con-

nected to feed power from its power source to the other switchboards. Two (or more) switchboards can also be tied together to parallel the sources. Figure 320-1-4 illustrates a typical arrangement of bus-ties between special frequency switchboards.

- c. **Power Distribution Panels** . Special frequency power distribution panels control and distribute power to groups of 400-Hz loads that operate together or that are located in the same general area. On large ships (such as aircraft carriers), load centers are installed to provide a major distribution point for loads that are a greater distance from the 400-Hz sources. This arrangement simplifies the installation and requires less weight, space, and materials than if each load was connected to a switchboard. Bus transfer devices (ABT's or MBT's) are generally used to supply vital load panels with normal and alternate sources as illustrated in Figure 320-1-4. The power panels and bus transfer devices are located close to the load to keep distribution cables short. This also minimizes the chance of a vital system being lost because of cable damage on a circuit feeding one of the system components.

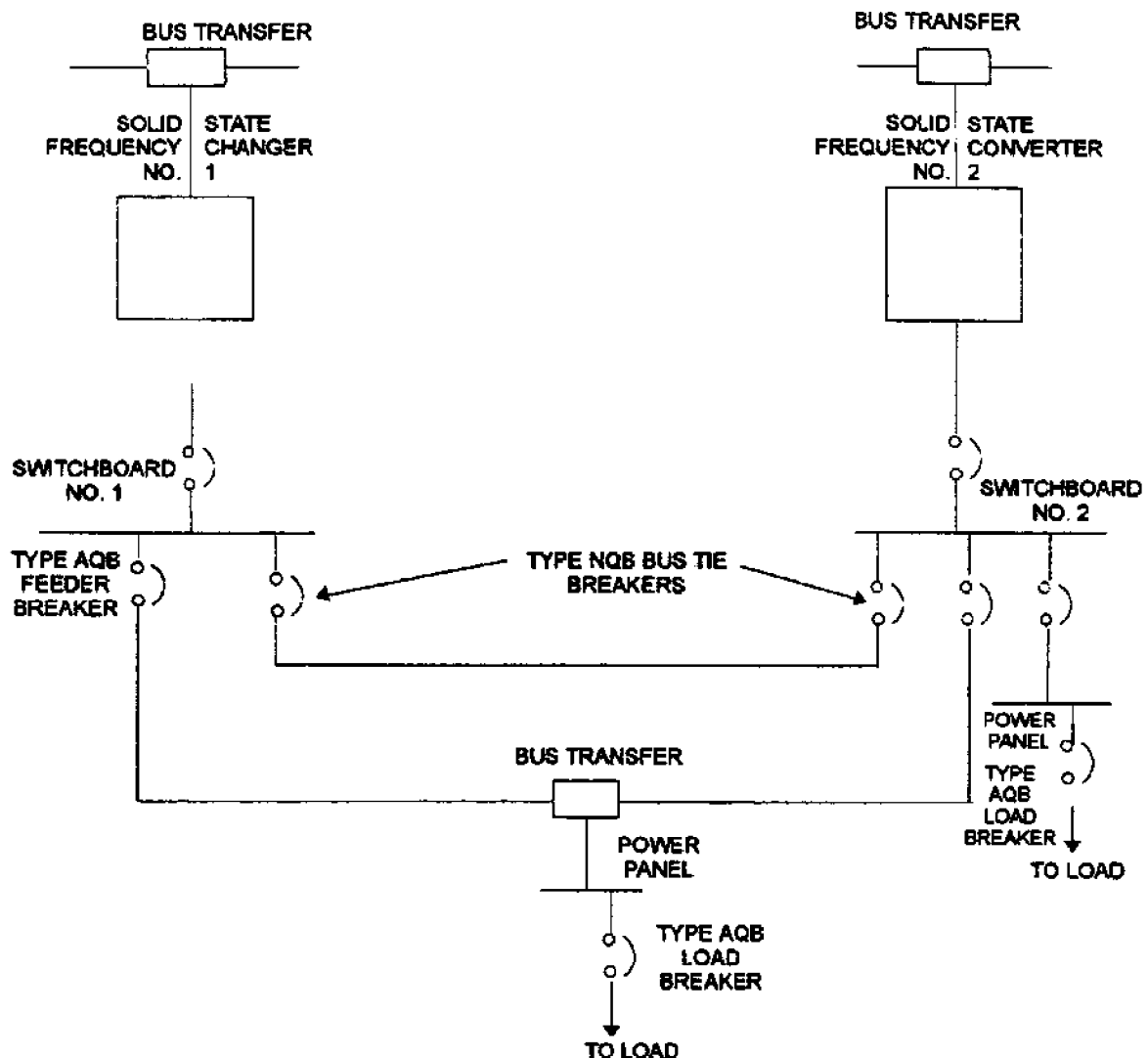


Figure 320-1-4. Special Frequency Distribution Using a Solid-State Frequency Converter

320-1.2.4.1 Aircraft Starting and Servicing Systems. Aircraft carriers have a 115/200V, three-phase, four-wire, 400-Hz electrical power system that supplies up to 60 kilo-voltampere (kVA) for aircraft servicing. Some air-capable ships have 30 and 45 kVA systems for helicopter starting and servicing. Each aircraft electrical servic-

ing system station consists of a disconnect switch, three single-phase line voltage regulators (LVR's), an available load monitor (ALM), a connection box, a remote control switch with indicator light, and a portable servicing cable and cable head. Systems rated equal to or less than 30 kVA do not require LVR's with special design features.

**320-1.2.5 LIGHTING SYSTEM.** The ship's lighting system is a subsystem of the ship service and emergency power systems. Its primary function is to light the ship. It also provides power to small appliances and service receptacles. The lighting system provides for general, detail, special, low level, and emergency illumination. Overhead and bulkhead-mounted lighting fixtures provide general lighting for compartments and spaces. Detail lighting is added where general lighting is inadequate for a specific task. Special purpose lighting includes temporary lighting (portable lanterns, relay lanterns, and portable floodlights), deck lighting, ship numeral lights, and boom lights. Low level lighting includes red, yellow, low level white (LLW), and broad band blue (BBB) illumination. Red lighting fixtures are installed to minimize interference with dark vision. This is done in selected living spaces, and access routes to the bridge and weather deck stations involved in signaling, flight operations, and other nighttime topside duties. All weather deck red lighting, except navigation and signal lights, and any internal red lighting, that could be seen by another ship, are converted to yellow lighting during peacetime conditions. This eliminates possible confusion with navigation lights. BBB lighting is used in command and control spaces of some ships to minimize interference with viewing of display consoles. Emergency lighting consists of a selected group of fixtures provided for all spaces and interior watchstations where continuous illumination is essential. LLW lighting is used on submarines in command and control spaces to minimize interference with viewing of display consoles, and to provide dark adaptation for nighttime periscope viewing. Some surface ships have LLW installed in command and control spaces that have color display consoles.

**320-1.2.5.1 Lighting Distribution System.** In planning the ship's lighting system, the ship was divided into zones. Each of these is supplied power from a lighting load center or lighting distribution panel. Zone boundaries normally correspond to fire zone boundaries. When the lighting load center or lighting distribution panel is centrally located within the zone, circuits are short and the weight of the cables is minimized. The lighting system receives power from the ship service power system. Emergency lighting is normally supplied from this system also with automatic transfer via ABT's to the emergency power system (or an alternate source if no emergency power system is installed). Lighting transformers are used to convert 450V, 60 Hz, three-phase power to 120V power for distribution to the lighting system. Lighting distribution panels are supplied from 450/120V transformers or from three-phase, 120V buses in the lighting load center. Lighting distribution system feeders, mains, and submains are three-phase circuits. Branch circuits are single-phase. At least two separate single-phase circuits (separately protected and fed from different phases) are provided for manned vital spaces or living spaces, where several people may be grouped for extended periods of time. Single-phase circuits are connected so that, under operating conditions, the single-phase loads on the three-phase circuits are balanced. The number of lighting fixtures installed on each circuit is determined to save weight or cable and wiring equipment costs. Also considered are allowable voltage drop, required control features, current carrying capacity of the cable, and rating of branch circuit fuse or circuit breaker.

**320-1.2.5.2 Lighting Transformers.** The 120V lighting circuits receive power from the secondaries of lighting transformers connected to the ship service and emergency power systems. Lighting transformers are either single-phase or three-phase, dry-type, naturally-ventilated units. Transformer banks consisting of three single-phase transformers are connected in **closed delta**. If any one of the three fails, the two remaining transformers can be connected in **open delta** to obtain 58 percent of the bank's capacity. Lighting transformers are located either near the generator and distribution switchboards (to energize switchboard buses that supply lighting circuits) or in the vicinity of the lighting distribution panels.

**320-1.2.5.3 Lighting Control.** The switching for detail lighting fixtures is separate from the general lighting switches. General lighting switches for compartments are inside the compartments, as close to the access as possible. Because the lighting system is not grounded (both conductors are energized at a potential different than the ship's hull ground), switches are all double-poled to break both sides of the lighting circuit. For lighting circuits where the New Emergency Automatic Lighting System (NEALS) is installed, it is necessary to secure the upstream circuit protection device from the switch to ensure that all power sources to the NEALS fixtures are secured.

320-1.2.5.4 Isolated Receptacle Circuits. The 120V receptacle circuits are isolated from the rest of the distribution system by either a 450/120V or a 120/120V isolation transformer that is rated at 3 kVA minimum. Isolated receptacle circuits are used as a safety measure. The metal case of a hand-held electric tool can become energized by a broken or chafed conductor. The operator could be fatally shocked, even though the system is ungrounded, because of the leakage current when the ship's 120V lighting system has a high capacitance to ground. The probability of accidental electrocution is significantly reduced by isolating receptacle circuits from the main power system. This limits the leakage current by limiting the capacitance to ground. To keep the capacitance to ground low and the resulting leakage current within safe limits, the total length of the cable in all isolated receptacle circuits supplied by an isolation transformer is limited to 1500 feet. A label plate shall be installed on or near each panel, junction box, or distribution box supplying the isolated receptacle circuits. It shall be inscribed as follows:

### CAUTION

**Do not connect additional fixtures or receptacles to this circuit.**

In surface ship medical spaces, receptacles and a switch and receptacles for surgical lights and relay lanterns are usually supplied from isolated receptacle circuits energized from the emergency system. All receptacles are provided with a grounded contact to protect against shock if an energized conductor contacts the metal case of a hand-held electric tool. **NSTM Chapter 300** provides additional explanation of isolated receptacle circuits and information on maintenance of grounded receptacles.

320-1.2.5.4.1 Loads Supplied by Isolated Receptacle Circuits. Typically, isolated receptacle circuits supply grounded receptacles for portable electrical and electronic devices rated less than 15 amperes. Commercial-off-the-shelf (COTS) equipment shall be energized through marine type computer strips (surge suppressors) as directed in **NSTM Chapter 300**.

320-1.2.5.5 Phase Loading. The original plans for power and lighting distribution were based on careful computations to ensure equal or nearly equal division of the load among the three system phases. This should be maintained, as much as possible, whenever relocating or adding lighting or power equipment. Imbalance resulting from previous lighting or power equipment changes can be corrected by altering connections in one or more local distribution panels or boxes. This action will shift some loads from heavily used phases to those less heavily used. When loads are shifted to other phases, ensure that those loads required to remain on the same phase as another component (such as synchro reference leads) are not shifted.

320-1.2.6 SHORE POWER. At or near a suitable weather deck location, groups of 400 A receptacles are provided for a shore power connection. Portable cables can be attached to them from the shore or from a ship alongside. The shore power system only has enough power to operate necessary machinery and provide lighting for habitability and the accomplishment of necessary work. Only an ungrounded shore power source is acceptable for supplying electric power. The same connection can be used to supply power from ship service generators to a ship alongside. To tabulate the voltage and frequency of shore power supplies in different parts of the world, and for information on the effects of using 50-Hz power for 60-Hz equipment, see [Table 320-A-1 in Appendix A](#).

320-1.2.7 ALONGSIDE POWER. Tenders and repair ships are provided with specified alongside power facilities. The number and capacity of the alongside power facilities are determined by the maximum number of ships and types to be supplied simultaneously and the mooring arrangements of these ships.

320-1.2.8 CASUALTY POWER. When installed, the casualty power distribution system permits the use of temporary connections to span damaged portions of permanently installed ship service and emergency distribution systems. This system is not intended to supply power to all the electrical equipment on the ship. It is limited to equipment necessary to keep the ship afloat, extinguish shipboard fires, propel the ship out of a danger area, maintain sufficient combat system capability for minimal self-protection of the damaged ship, and sustain internal shipboard control and monitoring and external ship communications. The casualty power system for rigging temporary circuits is separate from the electrical cage control equipment. This equipment consists of tools and appliances for cutting cables and making splices for temporary repair of permanently installed ship service and emergency distribution systems.

320-1.2.8.1 Casualty Power Supply Connections. Casualty power supply connections are generally provided for the following:

- a. EXCOMM System Power Panels
- b. Fire pump motor controllers
- c. 450 V Load centers (in the design of the casualty power systems, these load centers are considered sources of casualty power)
- d. CIWS/NSSM Systems, RAM and associated support equipment
- e. Interior communications switchboards and power panels
- f. Lighting system transformers (except when located with casualty power equipped switchboards)
- g. Machinery space vital propulsion and electric plant auxiliaries control center or power panels
- h. Power distribution panels serving outlets for portable submersible pumps, portable welders, de-smoking fans.
- i. AFFF station control panels
- j. Steering gear system power panels.

320-1.2.8.2 Components of the Casualty Power Distribution System. The casualty power distribution system includes portable cables, bulkhead terminals, risers, riser terminals, and switchboard terminals. Suitable lengths of portable cables are stowed throughout the submarine and machinery spaces of surface ships close to locations where they may be needed. For spaces outside the machinery spaces of surface ships, a specified number and length of portable cables (tailored for each ship class) and stowage racks/lockers shall be provided at each damage control station or other convenient location within the zone. These portable cables will be adequate in length to connect any power panel or controller casualty power terminal, within a Damage Control Zone, to risers and bulkhead terminals connected to the closest generator switchboard or load center. In determining cable length, consideration shall be given to space arrangement, interference and maintenance of clear passageways. Cable lengths shall not exceed 75 feet unless approved by NAVSEA. Bulkhead terminals are permanently installed in watertight bulkheads in chosen locations. These terminals permit cable connection on either side of the bulkhead, allowing power to be transmitted through the watertight bulkhead without loss of watertight integrity. Risers, consisting of two riser terminals connected by a permanently installed cable, perform the same function between decks. Where structural arrangements prevent the use of the bulkhead terminals to penetrate a watertight transverse bulkhead, riser terminals are used. Casualty power terminals are provided at switchboards as well as at some distribution panels. Portable cables can be connected at these points to obtain power from, or supply power to, the bus bars. Casualty power circuit breakers are installed at switchboards and load centers to deenergize the switchboard casualty power terminals. Casualty power circuit breakers are not installed at power panels. Warning plates, reading DANGER - SHOCK HAZARD. THESE TERMINALS ARE NORMALLY, ENERGIZED, should be provided on all casualty power terminals that are permanently energized. Locations of portable cables,



bulkhead terminals, and risers are chosen so that connections can be made to many vital electrical auxiliaries from any ship service or emergency generators. Casualty power terminals and casualty power cable conductors are marked to identify (both by sight and by touch) the A, B, and C phases. Older-style casualty power cables terminate at each end in individual conductors with copper ferrules. Rings of twine or O-rings are applied over the conductor insulation so that the phases can be identified by sight and touch. The A phase has one ring; the B phase, two rings; and the C phase, three rings. More recent casualty power cables are provided at each end with a three-phase, keyed plug (a plug that can be plugged only into the proper phases of the casualty power terminal).

### **320-1.3 POWER PLANT RELIABILITY.**

**320-1.3.1 GENERAL.** A reliable supply of power is maintained for vital electrical loads. This is done by supplying two (or more) sources of power to these loads, providing load shedding of nonvital loads to avoid overloading the remaining generating capacity, and supplying redundant equipment from separate power sources and distribution circuits. The supporting auxiliaries for a piece of equipment shall be supplied power from the same source of power as the main piece of equipment.

**320-1.3.2 NORMAL AND ALTERNATE SOURCES OF POWER.** At least two independent sources of power supply vital 60-Hz and 400-Hz loads. The normal source of 60-Hz power is a ship service switchboard. The other source is either another ship service switchboard or an emergency switchboard (if installed). The second switchboard should be located in a different watertight subdivision of the ship, where possible. The vital systems to be provided with two sources of power are determined by the design characteristics of the ship and its mission. Vital loads are grouped into one of three categories, as listed in [Table 320-1-3](#), with Category I having the highest priority. Category I loads are supplied emergency power from the emergency switchboard. If multiple emergency switchboards are installed, similar loads are distributed among them to maintain maximum reliability. Assignment of loads to switchboards is determined by the location of the switchboards and the loads, and by the capacity of the associated emergency generators. Additional Category II and Category III loads are assigned an alternate supply from the emergency switchboard if there is enough emergency generator capacity. If the emergency generator cannot supply all Category I through Category III loads, the electric plant is arranged so that the ship service generators can be operated in a split-plant mode. This is so that at least two independent sources of ship service power can be provided. Vital 400-Hz loads fed from the special frequency distribution system are also supplied power via normal and alternate feeders from two special frequency switchboards.

**320-1.3.2.1 Bus Transfer Equipment.** Bus transfer equipment is installed at load centers, distribution panels, or loads that are fed by two power sources. This equipment is used to select either the normal or alternate feeder, or to obtain power from the emergency distribution system (if an emergency feeder is provided). Bus transfer switches are located adjacent to the panel or equipment they supply. They are either automatic or manual. Automatic bus transfer (ABT) units transfer to the alternate feeder automatically whenever the normal feeder voltage drops to 60 to 70 percent of normal voltage for more than 0.3 to 0.5 seconds. They generally will automatically retransfer back to the normal feeder when its voltage recovers to 85 to 95 percent of normal voltage. On power systems, there is a short time delay after the normal feeder is deenergized before the automatic bus transfer switch transfers to the alternate source. This time delay feature also is in effect when the ABT transfers from the alternate source back to the normal source, and allows motor voltages to die down before reenergizing them. Applying an out-of-phase voltage from the alternate source while the motor still has too much residual voltage could damage the motor and its driven equipment. During the time delay, the load is without power. Magnetic relays and contactors (such as those in motor controllers), that are energized from the ABT, may drop out. When power is restored by the transfer to the alternate load, it may be necessary to manually restart some of the loads. Manual bus transfer, (MBT) units are often used instead of ABT's for many applications where a bus transfer device is

required for loads that must be manually restarted after loss of power. ABT switches on lighting systems are either the time delay type or instantaneous. Using the output from one ABT to input power to a second ABT shall be avoided. ABT's are usually installed for the following vital loads:

- a. AFFF pumps
- b. Collective protection system class W ventilation
- c. Emergency lighting
- d. Fire extinguishing auxiliaries and controls
- e. Fire pumps
- f. IC switchboard and panels
- g. Pumps associated with the main and auxiliary machinery plant having low voltage release (LVR) control
- h. Steering gear power panel
- i. Close In Weapons System (CIWS)
- j. Machinery Control Systems

**Table 320-1-3.** Desired Power Sources

Equipment that Requires Two Power Sources	Desired Power Sources <sup>4</sup>		
	Normal	Alternate	Emergency
<b>CATEGORY I.</b> In all cases, when emergency power is provided, an emergency switchboard supplies loads associated with EMERGENCY SHIP CONTROL that includes the following:			
Aqueous Film Forming Foam (AFFF) Pumps	X		X
Auxiliaries to support the emergency generator prime mover such as:			
Booster Pumps	X		X
Compartment Ventilation Motors	X		X
Fuel Transfer Pumps	X		X
Starting Air Pumps	X		X
Close-in Weapons System (CIWS) <sup>2</sup>	X		X
Collective Protection System Class W Ventilation	X		X
Emergency Communications	X		X
Emergency Lighting	X		X
Fire Pumps	X		X
Interior Communications	X	X <sup>3</sup>	X
Machinery Space Class W Ventilation	X		X
Steering Gear Auxiliaries	X	X <sup>3</sup>	X <sup>1</sup>
Surface Search Radar	X		X
VHF Bridge-to-Bridge Radio	X		X
Vital propulsion auxiliaries are required for cold-starting the ship's plant and are necessary for machinery protection, including as a minimum:			
Emergency or Standby Lubricating Oil Service Pumps	X		X
Feed Transfer Pumps	X		X

**Table 320-1-3.** Desired Power Sources - Continued

Equipment that Requires Two Power Sources	Desired Power Sources <sup>4</sup>		
	Normal	Alternate	Emergency
Forced Draft Blowers (Low Speed)	X		X
Fuel Service Pumps	X		X
Motor-Operated Boiler Stop Valves	X		X
Turbine Generator Pumps	X		X
<b>CATEGORY II</b> . The following loads:			
Air Conditioning Serving Electronic or Control Spaces	X	X	
All Electronics (except weapon systems) <sup>2</sup>	X	X	
Circle W and Recirculating W Fans Serving Electronic Spaces	X	X	
Degaussing	X	X	
Fire Extinguishing Auxiliaries and Controls	X	X	
Medical Equipment	X	X	
3-Inch Gun Mounts and Control Systems	X	X	
<b>CATEGORY III</b> . On ships with guided missile systems or gun weapon systems, the following loads:			
Air-Conditioning Plant Auxiliaries	X	X	
Circle W and Recirculating W Fans Serving Missile Control Spaces	X	X	
Missile System Components	X	X	
Missile System Power Conversion Units	X	X	
Naval Tactical Data Systems (NTDS)	X	X	
Ship Service 400-Hz Power Conversion Equipment	X	X	
5-Inch Gun Mounts (or larger) and Control Systems	X	X	
On aircraft carriers and amphibious support ships, the following loads:	X	X	
Airborne Systems Electronics	X	X	
Aircraft Defueling Pumps	X	X	
Aircraft Elevators	X	X	
Aircraft Landing Support Equipment	X	X	
Air-Conditioning Plant Auxiliaries	X	X	
Circle W and Recirculating W Fans	X	X	
Hangar Division Doors	X	X	
Integrated Operations Intelligence Equipment	X	X	
Naval Tactical Data System (NTDS)	X	X	
Ship Service 400-Hz Power Conversion Equipment	X		
Weapon Elevators	X	X	
On attack type cargo ships and landing ships:	---	---	
	---	---	
	---	---	
Winches, Elevators, Ramps, and Gates in Support of Offloading Operations	X	X	

**Table 320-1-3.** Desired Power Sources - Continued

Equipment that Requires Two Power Sources	Desired Power Sources <sup>4</sup>		
	Normal	Alternate	Emergency
1. Normal and alternate power sources have been used when the emergency generator plant has insufficient capacity. 2. Power supplies for system electronic components are segregated for power supplies to associated system non-electronic components. 3. Some ships may have three sources of power. 4. For ships without emergency generator, an alternate source will be used.			

The ABT associated with each high capacity firefighting foam (HCFF) station is located within the same material condition ZEBRA boundaries as, and within or adjacent to, the HCFF station it serves and serves no other loads. MBT units are installed for all other loads that require two sources of power. Loads that have LVR or low voltage protection (LVP) control features, other than firefighting systems, may be combined and supplied from one ABT.

320-1.3.2.2 Routing of Normal and Alternate Feeder Cables. Normal and alternate or emergency feeders to a vital load are spaced as far apart as feasible to minimize the possibility of more than one feeder being damaged from a single casualty. Main fore and aft cableways are located port and starboard, and high and low in the ship to obtain both athwartship and vertical separation of these feeders. Cable runs are located to obtain maximum protection from the ship's structure.

320-1.3.3 LOAD SHEDDING SYSTEMS. An automatic load shedding system, when provided, disconnects selected nonessential loads from the distribution system in response to an electrical system overload. An overload condition can occur when one on-line generator suddenly fails or a large demand is suddenly applied to the plant when it is operating with some generators secured. The remaining on-line generator(s) may overload in an attempt to supply the ship's full load. For a diesel or steam plant, overload will cause frequency or voltage to drop but the unit is not likely to trip off line. Gas turbines, on the other hand, are very sensitive to overload and may trip off line on high turbine inlet temperature. To protect the operational generators and prevent their sequential loss, a load shedding system, depending on its design, can; 1) automatically reduce the ship's load to be within the remaining generating capacity, 2) split the plant by opening bus ties to isolate the failing generator, and 3) call for automatic starting and engagement of the standby generator(s). There is no "typical" load shed scheme. Each ship class that has a load shed system has unique features that determine when and how its load shed system operates.

320-1.3.3.1 Staged Load Shedding. Load shedding is normally provided in several stages or levels that reduce the electric plant load to within the capacity of the on-line generators. If the first load shed stage does not reduce the load sufficiently, additional stages are activated after time delays to further reduce the load. Electrically operated equipment supplied by a ship service switchboard, emergency switchboard, or load center is assigned to one of several load shed classes. In a two-stage load shedding scheme, the following load classes would normally be used:

- a. Nonvital (Nonessential) - Readily sheddable loads that can be immediately secured without adversely affecting ship operations, survivability, or life. Examples are hotel loads such as heating and galley; ship, avionics, and ground support equipment shops; aircraft fueling systems; refrigeration systems; and other loads that can be shut down for a short time until full electric power capability is restored.
- b. Semivital (Semiessential) - Loads important to the ship but that can be shut down or switched to the alternate

plant in order to prevent total loss of ship's electrical power. Examples include aircraft and cargo elevators, deballasting compressors, assault systems, some radar, communications, and seawater service pumps.

- c. Vital (Essential) - Nonsheddable loads that affect the survivability of ship or life. Power to these loads is not intentionally interrupted as part of a load shedding scheme. Examples of vital loads are generators, boilers, and their auxiliaries; close-in weapon systems; electronic countermeasures; tactical data system equipments with volatile memories; medical and dental operating rooms; and primary air search radar.

320-1.3.3.1.1 During the ship's design, loads with the same load shedding priority are distributed approximately evenly among the ship service switchboards. This way each stage of load shedding results in about the same percentage reduction in operating load at each switchboard. In some cases, certain semivital loads may be assigned to the first load shedding stage to get the necessary percentage reduction in load at that switchboard. During the ship's life, it is important that new loads are assigned to a load shedding class.

320-1.3.3.2 Load Shedding Devices. A load shedding system uses real power (watt) sensors located in each generator switchboard to monitor the output of that generator. When the load on any generator exceeds a preset limit (for example, 92 percent of generator rating) for a preset length of time (for example, 11 cycles of the power system frequency), the first stage of load shedding is activated. Relays in each switchboard and load center, that are paralleled with the overloaded generator pick-up, send a shunt trip signal to open the feeder circuit breakers that supply first-stage loads. If load shedding stage 1 does not reduce the electric plant load sufficiently, load shedding stage 2 (and additional load shedding stages, if provided) will automatically shunt trip the breakers, supplying their loads after a time delay. Auxiliary contacts in the bus tie circuit breakers interconnect the load shedding control circuits between paralleled switchboards. This interconnection is done so that activation of the load shedding system reduces the load on all switchboards and load centers connected to an overloaded generator. Loads fed from an isolated, split plant, however, will not be affected. The load sensing device is typically adjustable throughout the range of 90 to 120 percent of the generator's rated power capacity. Time delays for the second (and subsequent) load shedding stages can vary from less than a second for gas turbine generators to 30 seconds or more for diesel generator sets. Whenever the sensed load drops below the load shedding activation value, the system automatically resets. This allows any or all of the tripped circuit breakers to be reclosed. Both automatic and manual control of the load shedding system are usually provided. Manual load shedding activation allows the electric plant operator to engage one or all of the load shedding stages to avoid a potential overload condition or test system operation.

320-1.3.3.3 Turbine Overtemperature Protection System. Ships equipped with gas turbine generators may have a second subsystem installed that can initiate the load shedding system. The turbine overtemperature protection system (TOPS) continuously monitors the ship's electrical status. The TOPS automatically takes corrective action to prevent gas turbine overtemperature if a paralleled gas turbine generator is about to fail. One of its corrective actions is to signal for a load shedding. This signal is sent directly to the load shedding relays. TOPS normally will initiate load shedding faster than the electrical load shed system.

320-1.3.3.4 Splitting the Plant. Depending on the load shedding system design, bus tie circuit breakers may also be controlled. These breakers will always be controlled by stage 1 load shedding actuation. Reducing generator load and splitting the plant by opening the bus tie circuit breakers may allow the overloaded generator to recover. It will also prevent the loss of one generator from overloading other on-line generators.

320-1.3.3.5 Automatic Starting of a Standby Generator. The STANDBY ship service generator or emergency generator will start when loss of voltage is sensed on a bus. Depending on the generator's automatic startup sequence, and the load shedding system's actions in splitting the plant, the generator breaker may be closed manually to parallel the standby generator with the system. The added generation will help relieve the overload

condition. In other systems, the generator is started but the generator breaker must be closed by the operator. Normally, the circuit breakers for an emergency generator close automatically onto an emergency bus.

**320-1.3.4 PLANT RELIABILITY.** The electrical distribution system can restore the plant after loss of propulsion power at sea. For equipment in the same machinery space, separate and independent distribution panels are provided for the auxiliaries of each piece of equipment. The independent panels ensure that operation of redundant equipment is not affected if the distribution panel or its feeder circuit is lost or if power to the panel must be secured. Separate vital distribution panels, fed from two sources of power via a bus transfer unit, are provided for redundant equipment that requires two sources of power. Where there is more than one propulsion plant, each with only electrically driven pumps; one plant's fuel service, lube oil service, main condensate, and main feed booster pumps are normally connected to a vital distribution panel of the other plant. In this way, each plant can be restarted with power from the other plant.

**320-1.3.5 PROTECTION AGAINST POWER LOSS.** Ships with ship service, emergency, and casualty power distribution systems can be protected against power loss (according to the type of failure) as follows:

- a. **Failure of One Generator** . A remote generator can be connected by bus ties to power the switchboard that normally receives power from the failed generator.
- b. **Circuit or Switchboard Failure** . Vital loads can be transferred to an alternate or emergency source of power by means of a transfer switch near the user equipment.
- c. **Failure of Both Normal and Alternate Power Supplies** . On some ships, when both normal and alternate sources of ship power fail, vital auxiliaries connected to an emergency switchboard receive power from an emergency or dual purpose generator. A dedicated emergency system is not provided on all ships.
- d. **Failure of Ship Service and Emergency Circuits** . Temporary circuits can be rigged with the casualty power distribution system. They will supply power to vital auxiliaries if any ship service or emergency generator can be operated.

#### **320-1.4 POWER OUTLETS.**

**320-1.4.1 MULTIPURPOSE POWER OUTLETS.** Multipurpose power outlets supply 450V, three-phase power for portable hoists, submersible pumps, tools that require 450V power, and welding units for repair, maintenance, and damage repair, including underwater welding and cutting. Multipurpose power outlets are grounded and are used with grounded plugs and cables having a ground wire. When the plug is inserted into the receptacle, the ground wire grounds the metallic case and exposed metal parts of the tool or equipment used. The ground wire provides a positive, highly conductive path that prevents dangerous potentials between the tool housing and ship structure, and protects the user from shock. Multipurpose power outlets are situated so two different outlets can supply portable pumps in any compartment by using a 75-foot cable or, for some larger ships, a 150-foot cable. Extension cables with triple-outlet, portable receptacle boxes make it possible to operate at least six portable pumps in any watertight compartment. The number of outlets fed from any one power distribution panel is kept to a minimum to provide the greatest, practical supply diversity. An adapter is provided with the 75-foot extension cables for connecting the submersible pump to a casualty power bulkhead terminal. This provides power via the casualty power system if power from permanent outlets is unavailable.

320-1.4.2 120-VOLT GROUNDED RECEPTACLES. Since the danger of electrical shock is always present at 120V shipboard circuits, normal practice is to use grounded plugs and receptacles supplied from isolated receptacle circuits on all surface ships and submarines. General purpose grounded receptacles, as described in **NSTM Chapter 300**, are provided as follows:

- a. Double, 120V, 15-ampere, single-phase ac or two-wire dc, bladed-type receptacles for below deck applications. These receptacles are similar in appearance to those used on shore, however, both blades are hot with the third pin as a ground to the ship's hull. They admit either three-prong grounded plugs or two-prong plugs. Only two-prong plugs attached to double insulated, portable, plastic, electrical equipment (such as shavers, erasers, drills, grinders, and sanders) are permitted in these receptacles on board ship. Double insulated housings do not require grounding for personnel safety.
- b. Single, 120V, 15-ampere, single-phase ac or two-wire DC, watertight, bladed-type receptacles. They are used on radar platforms, close in weapons system mounts, open bridges, and other weather deck locations with electronic test equipment and portable tools.
- c. Single, 120V, 10 or 15-ampere, single-phase ac or two-wire dc, stub-type submersible receptacles. They are used topside and for applications where a watertight receptacle is required, except on radar platforms and open bridges.

320-1.4.2.1 Extension Cords. Only approved extension cords shall be used. Authorized for inclusion in the ship's allowance are 25-foot extension cords and three outlet, 25-foot extension cords for use with portable tools and equipment. For use on flight, hangar and well decks, and floating drydock basins, 100-foot extension cords are authorized. Additionally, 100-foot extension cords, labeled For Emergency Use Only, are authorized for placement in damage control lockers. These extension cords may be manufactured using three conductor flexible cable (12/3), type SO or ST as listed in the Federal Stock Catalog, Class 6145, and attaching a grounding plug (NSN 5935-01-0905-3579) to one end and a grounding receptacle (NSN 5935-01-012-3066) to the other end. Commercially available, UL approved equivalent items may be used. Commercially available, UL approved 25 and 100 foot extension cords with 12/3 wire may also be used.

320-1.4.2.2 120-Volt Receptacle Spacing. Receptacles are spaced so that portable tools can be used within weather boundaries throughout the ship without requiring more than 50 feet of flexible cable between receptacle and tool. This requirement prevents excessive voltage drops from the receptacle to the power tool, and excessive grounding conductor impedance. Grounded 120V receptacles installed for other applications (such as for radiant heaters) are included in the 50-foot receptacle spacing regulation and may be used with portable tools. Receptacles installed for portable tools are also intended for use with portable lights. If additional receptacles are required, care must be taken to prevent overloading of the circuits or exceeding the total cable length limits of an isolated circuit.

320-1.4.2.3 Precautions for Maintenance and Use of 120-Volt Receptacles and Extension Cords. **NSTM Chapter 300** contains information and precautions on wiring, testing and use of grounded receptacle plugs, and extension cords.

### **320-1.5 DIRECT CURRENT DISTRIBUTION SYSTEM.**

320-1.5.1 SURFACE SHIP BATTERY CHARGING SYSTEMS. Battery charging stations and battery maintenance shops are placed at strategic locations in ships. Battery chargers are usually mounted permanently wherever batteries are installed. In the case of portable batteries, a charging station may be provided for several batteries. Charging stations for lift and tow truck batteries are located in an area where the truck can be brought to

the charger. Voltage and current ratings of chargers are selected to suit the requirements of the installation. Some charging stations may also have a small distribution system that supplies battery charging outlets. This may be the case if one charger maintains the batteries of several motor boats or launches located close together. Rectifiers or motor-generator sets also supply special loads requiring dc power. Portable battery chargers charge boat batteries on some ships.

**320-1.5.2 SUBMARINE SYSTEMS.** On nuclear submarines, an electric propulsion motor, an emergency lighting system, and any auxiliaries that must operate following loss of ac power are connected to the dc system that is supplied by the ship's battery. Motor-generator sets are driven from the ac system to charge the ship's battery and supply dc power to the auxiliaries that are connected to the dc system. Upon loss of ac generation, the battery supplies dc power to the auxiliaries connected to the dc bus. The motor-generator sets operate dc to ac to briefly provide emergency ac power to vital ac loads. The voltage on submarines is normally 250V, varying from 210V when the battery is discharged, to 355V, when the batteries are being charged. On AGSS 555 (USS DOLPHIN), the batteries are the only source of power when the submarine is submerged below snorkel depth. The batteries are charged by diesel-driven generators while the submarine is surfaced or snorkeling. This ship uses a three-wire system to provide 500 Vdc for propulsion, and 250 Vdc for auxiliaries. The New Attack Submarine (NSSN) has high voltage dc generators that supply static frequency converters to charge the battery, and to produce 450 V, 3 phase, 60 hz power for ship's systems.

**320-1.5.3 SMALL BOAT LOW VOLTAGE SYSTEMS.** Landing craft and small boats use low voltage, 12V or 24V systems. Generators driven by propulsion engines in some installations, and by small auxiliary engines in others, supply power. Storage batteries supply power when generators are not running. Some boats without emergency generators have 28-Vdc navigation light systems energized by a battery and battery charging rectifier.

**320-1.5.4 HELICOPTER STARTING AND SERVICING SYSTEMS.** Strategically located rectifiers and outlets are provided on ships having helicopters to provide 28.5 Vdc for starting, aircraft servicing, and avionics shops. These rectifiers are designed specifically for this service.

## **320-1.6 DISTRIBUTION SYSTEM EQUIPMENT.**

**320-1.6.1 RELIABILITY AND MAINTENANCE.** Electrical equipment for naval ships is constructed so it has a practical amount of dependability and shock resistance. It is installed so it receives maximum protection from the ship's structure. It is dispersed so that duplicate items that perform the same duties are physically separated, minimizing the possibility that both will be damaged by the same casualty. Equipment is designed with special attention to maintenance. Designers use documentation on long-term maintenance experiences to design better maintenance features into the equipment.

**320-1.6.2 KINDS OF EQUIPMENT.** An electrical distribution system is made up of numerous components including instruments (volt meters, ammeters), switching equipment (such as bus-transfer switches), current and voltage sensitive relays, protective equipment (circuit breakers and fuses), conductors (bus bars and cables), and transformers.

**320-1.6.3 SWITCHBOARDS.** Much of the equipment that makes up a distribution system is mounted on switchboards or switchgear groups. A switchgear group essentially consists of two or more individual sections connected by cables and separated to localize damage from fire or shock.



320-1.6.3.1 Functions. A generator and distribution switchboard or switchgear group is provided for each generator or group of generators. These switchboards serve to

- a. Provide for control, operation and protection of their associated generators.
- b. Control, through appropriate switching equipment, the distribution of electric power.
- c. Mount measuring instruments, indicating devices, indicator lights, and protective and regulating equipment associated with the generators or distribution systems.

320-1.6.3.2 Construction. Switchboards are constructed to withstand high-impact shocks. Switchboard units consist of a sturdy box framework, built of angles and structural shapes, to provide enough strength to resist breakage and distortion due to shock, and stiffness to prevent excessive vibration. They are dead-front construction (no exposed energized components) sheet metal enclosures. Only meters, operating handles, and switches protrude through the front of the switchboard for protection of personnel. The front of the switchboard also provides a grip rail for personnel to safely stand watch or implement operating orders. Expanded metal or solid louvered panels enclose the rear of the switchboard to allow ventilation while protecting personnel. Submarine switchboards are normally of spraytight construction.

320-1.6.3.3 Arrangements. Modern switchboards have equipment grouped to form a number of units, such as the ac generator unit, ac bus tie unit, and power distribution unit. Each unit is complete with a separate front panel and all required accessories. A number of units mounted on a common base make up a section. A switchboard may consist of a single section or of several sections that are physically separated, but are connected by cables to form a switchgear group. This arrangement tends to minimize damage from shock because several small structures can more easily be made shock-resistant than a single large structure. It localizes damage from fire so a fire in one section is not as likely to affect the others. It also provides for easier removal of damaged sections for repair or replacement.

320-1.6.3.3.1 Electrical Switchgear or Load Center Post Fire Inspection Procedure. Major fires in electrical switchgear are usually the result of arc faults (an arc fault is phase-to-phase current flow through the air). As each arc strikes, in-line, phase-to-phase, etc., loud popping noises will be heard and electric plant meters will exhibit erratic operation. An inspection shall be conducted on any switchgear that suffers extensive damage from an arc fault or suspected arc fault. This inspection shall be conducted prior to any repair action unless the switchgear is critical to the operation of the ship and repair is within ships force capability. The specific purpose of the inspection is to attempt to determine the actual cause of the casualty. Although not exhaustive, the following steps shall be included in the inspection of failed switchgear. A copy of all information gathered during the inspection shall be forwarded to NAVSEA 03ZE.

- a. Inspect and document the damaged switchgear.
  - Visually inspect the switchgear damage. Document at least the following items (make hand sketches or mark up photo copied portions of technical manual drawings to support observations):
    - 1 Location(s) of the overall damage and particular components involved.
    - 2 Location(s) of the heaviest damage. (NOTE: This damage usually occurs when the arc lingers or is trapped at a particular spot for some reason. This area may experience a burn through of the enclosure).
    - 3 If the switchgear is comprised of multiple units, add comments on the number of units and the degree of damage each unit suffered.

- 4 Inspect bus bar edges for arc trails to determine arc movement and spread. (NOTE: Arc trails are usually visible to the eye. Arc movement can often be determined fairly accurately keeping in mind that an arc always travels away from the source of power.)
  - 5 Look for obvious signs of the cause, e.g., partially melted foreign conductive object.
  - 6 Note location(s) of incoming power cables and which power cables were energized at the time of the casualty.
- b. Record data.  
Record, at a minimum, the following data:
- 1 Ship name, time and date of the casualty, switchgear involved, etc.
  - 2 The exact plant line-up at the time of and several hours prior to the casualty.
  - 3 If the plant had undergone changes (cross connect, load switching, DC exercises, ship evolution, etc.) at the time of or shortly before the casualty.
  - 4 If there are loads supplied by this switchgear that cycle periodically (e.g., air compressors).
  - 5 What, if any, circuit breakers tripped during the casualty.
  - 6 If the switchgear had recently (within the past year) undergone any form of repair or other invasive work.
  - 7 When the most recent PMS was conducted including thermal imaging.
  - 8 If the bus bars are insulated and the type of insulation used (e.g., glyptal varnish, enamel, heat shrink tubing or tape, etc.) and the relative condition of the insulation.
  - 9 If the ship has an Arc Fault Detector installed and, in particular, if the damaged switchgear is protected by the AFD System. If installed, record if the system functioned properly (i.e., had warnings or alarms been experienced).
  - 10 Photograph the damaged switchgear taking care to include as many details as possible.
  - 11 Photograph, if possible, a similar undamaged switchgear for comparison.
- c. Interview personnel on duty, in the space and adjacent spaces, at the time of the casualty.  
The information gathered from ships force can be used to help create a time line and a sequence of events. From interviews of personnel, include as much of the following, as possible:
- 1 Number of noises.
  - 2 Flashes and fire balls observed.
  - 3 Actions during the casualty (emptied three 10 lb fire extinguishers in the failed switchgear).
  - 4 Actions after the casualty.
  - 5 Rapid changes in voltage (V) and current (I) up, down or both.
  - 6 Unstable control conditions.

320-1.6.3.4 Electric Plant Control Panel and Electric Plant Control Console. A separate electric plant control panel (EPCP) or electric plant control console (EPCC) is provided when any of the following conditions exist:

- a. Generators with an individual capacity of 1500 kW or larger are installed.
- b. High interrupting (85,000 amperes symmetrical or 100,000 amperes symmetrical) capacity circuit breakers are installed, making electrical operation necessary.
- c. A central control is established such as an enclosed operating station.

320-1.6.3.4.1 Mounted on the EPCP or EPCC are all generator control equipment, measuring instruments, and controls for electrically operated equipment to centralize control of the generators and major switching opera-

tions. To assist the operator, the EPCP or EPCC has a mimic bus with indicator lights, showing the circuit breaker positions (open or closed). Ships with a machinery control center usually have CRT displays for use in controlling the electric plant. On ships that are not provided with an EPCP or EPCC, metering and control equipment is mounted on the front panels of the units in the switchboard or switchgear groups.

320-1.6.3.5 Interior Communication and Weapons Control Switchboards. For information on these switchboards, see **NSTM Chapter 430, Interior Communication Installations** .

320-1.6.4 MEASURING EQUIPMENT. Instruments are installed on the switchboards or switchgear groups to permit safe and efficient monitoring and operation of the electrical system. AC distribution systems are generally provided with voltmeters, ammeters, wattmeters, frequency meters, synchrosopes, and synchronizing lamps. Voltmeters and ammeters are usually the only instruments provided for dc distribution systems. See **NSTM Chapter 491, Electrical Measuring and Test Instruments** , for information and instructions on the use and care of electrical measuring instruments.

320-1.6.5 CIRCUIT BREAKERS. Circuit breakers are mounted as an integral part of switchboards, switchgear groups, and distribution panels. Circuit breakers used on naval ships are classified ACB, AQB, AQB-LF, AQB-LL, NQB, ALB, and NLB. All of these types are open case, molded case, and insulated case circuit breakers.

320-1.6.5.1 ACB Type. ACB circuit breakers have an open, metallic frame construction and may be either manually or electrically operated. Electrical operation allows the circuit breaker to be used for remote control operation as well as for protection. ACB circuit breakers are commonly used to connect ship service and emergency generators to the power distribution system. They are also used on bus ties, some shore power connection circuits, and some larger feeder circuits.

320-1.6.5.2 AQB Type. AQB circuit breakers are in a supporting and enclosing housing of insulating material with direct-acting automatic tripping devices. They are used to protect most switchboard, load center, and distribution panel circuits where the maximum available short circuit current is within the interrupting rating of an AQB breaker. See Appendix B for detailed information.

320-1.6.5.3 AQB-LF Type. AQB-LF circuit breakers have the same design as the AQB's except high interrupting capacity fuses have been incorporated into them. They may be used on switchgear feeders and other circuits where the short-circuited current exceeds the interrupting capacity of an AQB breaker, but is less than 100,000 amperes asymmetrical. See Appendix B for detailed information.

320-1.6.5.4 AQB-LL Type. AQB-LL circuit breakers are similar to type AQB except they have an interrupting capacity of 100,000 amperes asymmetrical without the use of fuses. See Appendix B for detailed information.

320-1.6.5.5 NQB Type. NQB circuit breakers are similar in construction to AQB breakers, but they have no automatic tripping devices for short circuit or overload protection. NQB breakers are used for circuit isolation and as manual bus transfer devices. See Appendix B for detailed information.

320-1.6.5.6 ALB Type. ALB circuit breakers are small and limited in current-carrying capacity. They are supported and enclosed in an insulated housing. They have a nonselectable direct-acting overcurrent tripping device. These breakers are designed for use on low voltage power and lighting distribution systems (24 Vdc, 120 Vac and Vdc).

320-1.6.5.7 NLB Type. NLB circuit breakers are similar in construction to ALB breakers, but they do not have any overcurrent trip capability. These devices are used to break load by operating a manual toggle switch handle. They are designed for use on low voltage power and lighting distribution systems.

320-1.6.6 FUSES. A fuse consists of a metal conductor inserted into a tube of glass or other insulating material, that melts when the current through the conductor exceeds the rated level, opening the circuit. Metal ferrules at each end of the fuse make contact with fuse clips or contacts in the carriage of a screw-type fuse holder. Fuses are used as protective devices in power and lighting circuits. They are in some user equipment, where their performance is preferred over that of a circuit breaker or their use is considered more economical. Motors rated up to 7-1/2 horsepower (hp) are often supplied from group control centers having 30-ampere fuses. Fuses are not used in 450V circuits supplying motors in excess of 7-1/2 hp. Unlike circuit breakers, a fuse must be replaced when it fails. See **NSTM Chapter 300** for directions on removing and replacing fuses.

320-1.6.6.1 Fuse Characteristics. There are three types of fuses with one of the following characteristics:

- a. Characteristic A - normal blowing
- b. Characteristic B - time lag (slow blow)
- c. Characteristic C - very high (100,000 amperes) interrupting capacity

C fuses are used where the available fault current exceeds the 10,000 amperes maximum interrupting capacity of A or B fuses.

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**WARNING**

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**If A or B fuses are used in an application requiring type C fuses, the fuse may explode, causing fire and personnel injury and equipment damage.**

320-1.6.7 CURRENT TIME SENSING AND SIGNALING DEVICE. A current time sensing (CTS) device is designed for use with AQB-A101, -A250, -A400, and -A800 shunt trip circuit breakers. They are presently installed only for protecting 400-Hz systems that are supplied by solid-state frequency changers (SSFC) because these SSFC's are current limited and self protect before they can actuate thermal or magnetic trip circuit breakers. A CTS's time-current characteristics are more precise and adjustable than those of AQB circuit breakers with thermal and magnetic trips. The CTS device supplements the breaker's time-current characteristics with a selectable time delay for fault currents below the breaker's instantaneous pickup. A CTS monitors the current through its associated circuit breaker and directly activates the shunt trip mechanism of the circuit breaker in response to overload and fault conditions. Ships with AQB-A102 circuit breakers (electronic trip) do not need CTS monitors. 400-Hz systems supplied by motor generator sets do not use CTS or CLD because they are not current limited.

320-1.6.7.1 CTS Adjustments. CTS settings include a time delay and an instantaneous trip current level. The appropriate settings are selected during the design phase, and any subsequent system modifications by analyzing the fault currents and plotting selected time-current characteristics (Figure 320-1-5). Coordination with other protective devices is also determined in this way. Unauthorized changes to the design settings could result in improper operation of the 400-Hz system's protective devices and loss of the entire 400-Hz power supply to vital combat and electronic equipment.

320-1.6.8 CURRENT LIMITING DEVICES (CLD). A current limiting device (CLD) is a three-phase protection device used in some ships in 400-Hz electric power distribution systems supplied by SSFC's because on 400 Hz systems supplied by SSFC's, the amount of fault current the source can produce and the length of time it can produce it is very limited. To prevent the SSFC's from shutting down to protect themselves from a fault in the frequency distribution system, several ship classes are outfitted with CLD's installed on switchboard feeder circuits. The CLD automatically inserts a series impedance in a faulted switchboard feeder circuit. The added CLD impedance limits fault currents to levels that the frequency changers can supply without degrading the switchboard voltage. The CLD impedance is inserted long enough to allow the circuit breaker supplying the faulted circuit to trip. If the required circuit breaker does not trip, the CLD clears the fault by shunt tripping the switchboard feeder circuit breaker. If the shunt trip signal is sent and the fault current is still present, the CLD shuts down to protect itself and prevent the spread of the fault to the rest of the system.

320-1.6.9 POWER SYSTEM MONITORS. Power system monitors sense various power system conditions. Types of monitors include available load, reverse power, power sensing, voltage, and frequency. These devices can trip an associated circuit breaker to improve power system performance or eliminate an unwanted condition.

320-1.6.9.1 Voltage Monitors and Voltage and Frequency Monitors. Electronic equipment can be damaged by continued operation under abnormal voltages and frequencies. Voltage monitors (VM's) or voltage frequency monitors (VFM's) are used to check system operation. When the voltage or frequency exceeds allowable limits for a predetermined length of time, the power supply or feeder circuit breaker is tripped. Although these monitors can operate on both 60-Hz and 400-Hz systems, they are normally used to protect 400-Hz electronic equipment for 400-Hz systems. One VFM is typically installed on the generator side of the generator circuit breaker. Special frequency (400-Hz) distribution systems with line voltage regulators will normally have VM's installed on the load side of the line voltage regulators. VM's are not used with aircraft servicing systems because aircraft has its own voltage monitor-to-drop load if the voltage source is not within limits. The VFM's at the generator trip the generator circuit breaker. The VM at the load trips the local circuit breaker to disconnect the load. When a load is supplied via an ABT, the VM undervoltage trip is defeated so the VM does not trip the circuit breakers while a transfer is taking place. VFM's are set for the nominal voltage (115, 200, or 440) and system type (type II or III). The VFM and VM are set to trip the supply breaker within 170 milliseconds (ms) (plus the breaker operating time = 250 ms) if the voltage or frequency exceeds the following limits:

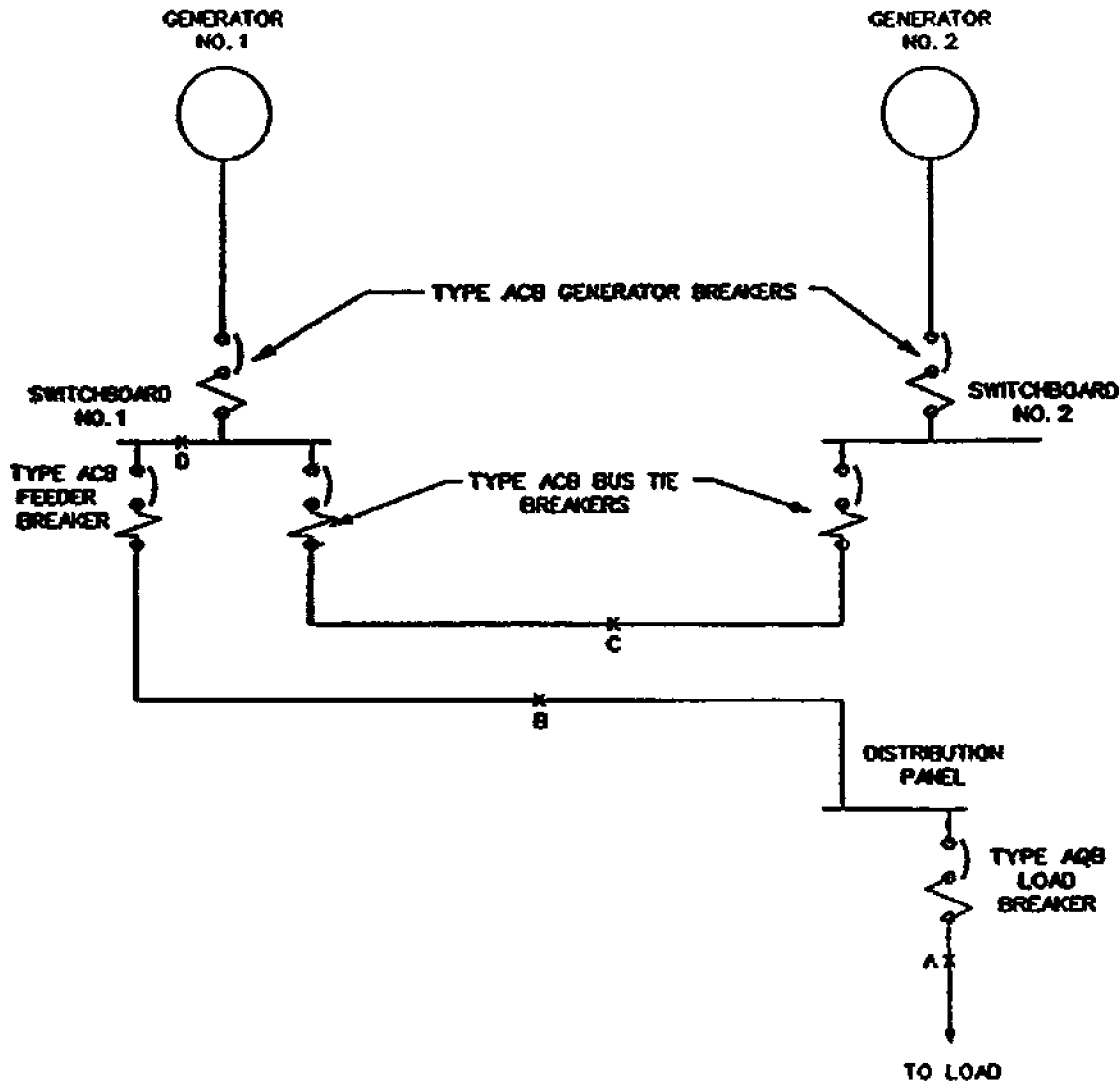


Figure 320-1-5. Overcurrent Protection Circuit (Typical)

a. Type II Power:

- 1 Above 120 to 130 percent of nominal voltage in any phase, measured line-to-line.
- 2 Below 70 to 80 percent of normal voltage in any phase, measured line-to-line.
- 3 Above 425 to 435 Hz (VFM only)
- 4 Below 365 to 375 Hz (VFM only)

b. Type III Power:

- 1 Above 110 to 120 percent of nominal voltage in any phase, measured line-to-line on delta-connected systems and line-to-neutral on wye-connected systems
- 2 Below 84 to 90 percent of nominal voltage in any phase, line-to-line on delta-connected systems and line-to-neutral on wye-connected systems
- 3 Above 415 to 425 Hz (VFM only)
- 4 Below 375 to 385 Hz (VFM only)

320-1.6.9.2 Multi-Function Monitor I. The Multi-Function Monitor I (MFM I) is a device that combines functions of several devices into one device.. It cobines the reverse power relay, overpower (load shed) relay, and

current magnitude and direction detector into one component relay. These functions are selectable to suite the current application. It monitors the condition of the 60 Hz Electric Plant Bus via current transformers and fuse protected potential transformers that are located in the main bus switchboards. The MFM I processes and analyzes the electric plant bus data to determine required MFM I protective action during reverse power or electrical fault conditions or to reduce the electrical load during overpower conditions. The MFM I was designed to provide quick isolation of faults to enable stable power for ships safety and fight through capabilities. It provides quicker fault isolation for fault situations than circuit breakers in performing coordinated protection. The MFM I protective circuits operate automatically under reverse current or fault conditions to trip the SG and XT circuit breakers or load shed selected non-vital loads under overload conditions.

The generator MFM I units provide forward power (overpower) protection (Stage 1 and 2 load shedding), forward fault current, and reverse power protection. The cross-tie MFM I units monitor forward and reverse current and trip their associated breakers when the current set point is exceeded. These protective functions are operating to both protect the generator(s) from damage and also to isolate damage to the switchboards from the rest of the plant.

The operating modes for the MFM I are OPERATE, FULL TEST, and PARTIAL TEST and are selected via a test mode switchboard located on the switchboard. In OPERATE, the MFM I is in normal operating mode and monitors the 60 Hz electrical system. In FULL TEST, the MFM I tests the Forward Power function (overpower for the generator units) and Forward Fault Current function (cross-tie units) by lowering the appropriate set points and activating a shunt trip of the associated circuit breakers if the test set point is exceeded. In PARTIAL TEST, the MFM I operates the same as FULL TEST except that there are no actual shunt trips because open contacts on the test switch prevent activation when in PARTIAL TEST MODE.

320-1.6.9.3 Ground Fault Detectors. Ground fault detectors (GFD's) presently installed on many Navy ships monitor phase-to-ground voltages using three lights. These lights are connected from each phase to the ship's hull (ground). A ground fault on an ungrounded three-phase system causes the phase-to-ground voltage in the faulted phase to decrease while the voltages in the two unfaulted phases increase. Ground faults are detected by changes in the brightness of the lights. A solid ground fault causes the light in the faulted phase to go dark. This type of GFD is primarily intended for detecting low resistance grounds. High resistance faults may not provide enough shift in the line-to-ground voltages to give a positive indication of the grounded phase.

320-1.6.10 ELECTRIC CABLES. Electric cables are a major part of any ship's electrical distribution system. Nearly all cable types can be provided with or without armor. In most cases, an armored cable is a standard cable type with a woven aluminum or brow basket-weave layer over the outermost cable jacket. This armor provides physical protection for the cable jacket during initial cable installation and ship construction; thereafter, it serves no useful purpose. The use of armored cabling has been declining because of improved cable design and material changes, better installation methods, and the need to reduce weight and simplify cable installation (by eliminating the need to ground armor at interior and exterior boundaries). Unarmored cable has been installed on most new construction. Also, all new cables are of low smoke construction. [Table 320-1-4](#) through [Table 320-1-8](#) list the most currently used shipboard cable types and their typical applications. Only basic designations are listed. A complete cable designation consists of the basic type plus a number which indicates either the conductor size or the number of conductors, depending on the particular cable type. With few exceptions, all types listed are unarmored. MIL-C-24643 and MIL-C-24640 cables are newer types designed with standard wire gauges and low-smoke jacket materials. MIL-C-24640 cables are also designed to have a reduced weight. Ships built before 1985 generally use MIL-C-915 and MIL-C-2194 cables.

**Table 320-1-4.** MIL-C-24643 Cable Application Data

Application	Cable Type		Rated Voltage Maximum ac or dc
	Nonflexing Service	Repeated Flexing	
General Usage - For all portions of power, lighting, interior communication, weapons control, and electronics systems, except where circuit parameters (for example, audio or radio frequency, low level microphone, synchro, scale voltage, and other types of signals) require special types of cable. Types LSMU, LS3U, LSDNW, LSTNW, LSFNW, LSMNW, LSSSGU, LSDSGU, LSTSGU, LSSHOF, LSDHOF, LSTHOF, LSFHOF, LSMHOF, LSDCOP, LSTCOP, and LSMCOS shall be used only for runs that are either totally within one compartment or totally within two contiguous compartments, except where a watertight deck or bulkhead below flooding water level II (FWL-II) is penetrated. Type SG cable shall be used for connections between the ship service generators and their respective switchboards, between sections of the ship service switchboards, between switchboards, and between switchboards and load centers.	LSDNW		1,000
	LSTNW		1,000
	LSFNW		1,000
	LSMNW		1,000
	LSSSGU		1,000
	LSDSGU		1,000
	LSTSGU		1,000
	LSFSGU		1,000
	LS6SGU		1,000
	LS7SGU		1,000
	LSMSCU		1,000
	LSMU		300
	LS3U		300
		LSSHOF	600
		LSDHOF	600
	LSTHOF	600	
	LSFHOF	600	
	LSMHOF	600	
	LSDCOP	300	
	LSTCOP	300	
	LSMCOS	600	
High Voltage 60-Hz - For 3,000 and 5,000 volt, three-phase power applications	LS5KVTSU		5,000
Casualty Power		LSTHOF-42	600
400-Hz Power - For 400-Hz service for static frequency changer or motor generator cables, bus ties, and feeders where cable of lower impedance is required to reduce voltage drop.	LS6SGU		1,000
	LS2U		600
	LS3SJ		600
	LS3SU		600
	LS3SWU		600
	LS4SJ		600
	LSMS		300
	LSTTRS		300
Shielded Circuits - For combat systems interior communications, light, and power circuits, where shielding of 400-Hz (for example, synchro, pulse, scale voltage) signals, or other signals is required. Where a watertight deck or bulkhead below FWL-II is penetrated; types LS1SMWU, LS2SWAU, LS2WAU, and LS3SWU shall be used.	LS1SAU		600
	LS1SMU		600
	LS1SMWU		600
	LS1SWU		600
	LS1SU		600
	LS1S50MW		300
	LS1S75MW		300
	LS2AU		600
	LS2SJ		600
	LS2SWAU		600
	LS2SWU		600
	LS2SU		600
	LS2UW		600
LS2WU		600	
Microphone Circuits		LSMCOS	600
		LSMMOP	300



**Table 320-1-4.** MIL-C-24643 Cable Application Data - Continued

Application	Cable Type		Rated Voltage Maximum ac or dc
	Nonflexing Service	Repeated Flexing	
Audio and Telephone - For audio, telephone call bell, announcing and alarm systems. May also be used for other interior communications and weapons control systems provided ampere rating of the cable and voltage drop to the system are not exceeded. Type LSTPNW, LSTTOP, and TTX shall be used only for runs that are either totally within one compartment or totally within two contiguous compartments, except where a watertight deck or watertight bulkhead below FWL-II is penetrated.	LSTPNW	LSTTOP	300
	LSTTSU		300
Radio	LSSRW		3,000
	LSDRW		3,000
	LSTRW		3,000
Radio Frequency - For applications up to 2 MHz  Maximum total copper operating temperature shall not exceed 75°C	LSTTRS	LSTTRS	300
			300
Position Indicator	LSPI		
Degaussing	LSSSGU		1,000
	LSDSGU		1,000
	LSTSGU		1,000
	LSFSGU		1,000
	LS6SGU		1,000
	LSMDU		600
	LSMDY		600
LSMSCU	1,000		
Thermocouple and Pyrometer Temperature Range: Type LSTCTS, 125° to 260°C Type LSTCJX, 150° to 540°C Type LSTCKY, 260° to 870°C	LSTCTX LSTCJX LSTCKX LSTCJU LSTCTU LSPBTMU		600
NOTE: The cables may be provided with variations in armored, unarmored, and unarmored with overall shields, as specified on the applicable specification sheet of MIL-C-24643.			

**Table 320-1-5. MIL-C-24640 Cable Application Data**

Application	Cable Type		Rated Voltage Maximum ac or dc
	Nonflexing Service	Repeated Flexing	
General Usage - For all portions of power, lighting, interior communication, weapons control, and electronics systems, except where circuit parameters (e.g., audio or radio frequency, low level microphone, synchro, scale voltage, and other types of signals) require special types of cable. Types DS, TX, FX, and MXO shall be used only for runs that are either totally within one compartment or totally within two contiguous compartments. These type cables shall not be used, however, where a watertight deck or watertight bulkhead below FWL-II is penetrated.	DX		600
	TX		600
	FX		600
	DWX		600
	TXW		600
	FXW		600
	7XW		600
	MXO		600
	MXCW		600
Audio and Telephone - For audio, telephone, call bell, announcing, and alarm systems. May also be used for other interior communication and weapons control systems provided ampere rating of the cable and voltage drop for the system are not exceeded. Type TTX shall be used only for runs that are either totally within one compartment or totally within two contiguous compartments. This type cable shall not be used, however, where a watertight deck or watertight bulkhead below FWL-II is penetrated.	TTX		600
	TTXW		600
Radio Frequency - For applications up to 2 Mhz. Maximum total copper operating temperature shall not exceed 75°C.	TTXS		600
Shielded circuits - For combat systems, interior communications, lighting, and power circuits, where shielding of 400-Hz (e.g., synchro, pulse, scale voltage) signals, or other signals is required. Where a watertight deck or bulkhead below FWL-II is penetrated; types 1XSOW, 2XSAW, 2XSW, 2XOW, and 3XSW shall be used.	2XAO		600
	1XMSO		600
	2XS		600
	MXSO		600
	3XS		600
	2XO		600
	2XSO		600
	1XSOW		600
	2XSAW		600
	2XSW		600
	2XOW		600
3XSO		600	
NOTE: Cables may be provided with variations in armored, unarmored and unarmored with overall shields, as specified on the applicable specification sheet of MIL-C-24640.			

**Table 320-1-6.** MIL-C-915 Cable Application Data

Application	Cable Type		Rated Voltage Maximum ac or dc	
	Nonflexing Service	Repeated Flexing		
Outboard and Submersible - For hydrophones, transducers, outboard dial telephones, retractable antennae, and similar equipment. Types 1PR-A20E, 1PR-16, 7PR-16, 2SPR-16, 3PR-16, 1Q-16, 1TR-16, and TSPR-16S are only for submarine outboard use.	MSPW		300	
	TSPA			
	1PR-A20E			
	1PR-16			
	7PR-16			
	2SPR-16			
	3PR-16			
	1Q-16			
	1TR-16			
	7SPR-16S			
		MSP		
		TSP		300
		5SS		600
		S2S		600
		DSS		600
	FSS	600		
	TSS	600		
	MWF	600		
	DSWS	high voltage		
	MCSF	600		
	1SWF	300		
	2SWF	300		
	TPUM	600		
Welding Electrode Circuit		TRF	600	
		TRXF	125	
Diver's Line and Telephone		DLT	300	
Shore-to-Ship Power		THOF-400	600	
		THOF-500		
400-Hz Aircraft Servicing		CVSF-4	600	
DC Aircraft Servicing		JAS-250	600	

**Table 320-1-7.** Special Purpose Cable Application Data

Application	Cable Type		Rated Voltage Maximum ac or dc
	Nonflexing Service	Repeated Flexing	
Cable Assembly Electronic Test Equipment	MIL-C-28777		125/250 Vac, 28 Vdcd
Cable, Coaxial for Submarine Use	MIL-C-23020		

**Table 320-1-8.** Commercial Cable Application Data

Application	Cable Type		Rated Voltage Maximum ac or dc
	Nonflexing Service	Repeated Flexing	
Cords for Portable Tools and Equipment - For power supply to electric typewriters, office machines, electric drills, sanders, por- table extension lights, and similar equip- ment. Safety ground conductors, where required, shall be green.		Underwriters Approved S, SO, ST, SJ, SJO, SJT	
Extension Cords	Fed Spec. J-C-175		

## 320-1.6.11 CABLE PENETRATION OF STRUCTURES.

320-1.6.11.1 Metal Stuffing Tubes or Multiple Cable Penetrations. Only metal stuffing tubes are installed in decks and bulkheads that form the boundaries of spaces containing volatile, combustible, or explosive materials. Metal stuffing tubes or multiple cable penetrators are used for watertight cable penetration of the following:

- a. Watertight cable trunks
- b. Watertight decks and bulkheads surrounding compartments subject to flooding by sprinklers
- c. Bulkheads and decks exposed to the weather
- d. Bulkheads designed to withstand a water head
- e. The portion of bulkheads specified to be watertight to a certain height
- f. The portion of bulkheads below the height of the sill or the coaming of compartment accesses
- g. Cable penetrations into garbage rooms, battery charging shops, medical operating rooms, and medical wards
- h. Multiple cable penetrations used in decks or bulkheads exposed to the weather shall have CRES or glass reinforced plastic (GRP) accessories.

320-1.6.11.2 Nipples or Collars. Nipples (for single cable penetration) and welded collars (for multiple cable penetrations) are used for nonwatertight cable penetrations. Where nipples and collars penetrate airtight or fume-tight compartment boundaries, they are packed with plastic sealer. The primary reason for sealing cable penetrations in nontight bulkheads is to form a fire stop. The plastic sealer prevents fire and smoke from traveling along the cableway from one compartment to another. The installation and packing of nipples and collars are in accordance with standard methods. Nipples and collars are used at the following locations:

- a. Nonwatertight decks
- b. Nonwatertight structural bulkheads
- c. Airtight bulkheads
- d. Fume-tight bulkheads
- e. Multiple cable (two or more) penetrations of
  - 1 Nonstructural steel bulkheads (other than wire mesh or expanded metal)

## 2 Bents, web frames, transverse girders, and longitudinal girders

320-1.6.11.3 Cable Segregation for Interference Reduction. Cables supply power and interconnect electrically-operated equipment for control and communication. To properly protect and operate these cables on today's complex ships, it is necessary to group electrical cables into categories and segregate, route, shield and isolate the various groups. To reduce interference, each shipboard cable can be classified as active, passive, or susceptible. Active and susceptible cabling are generally found in electronics systems. Examples of active cables are radar and radio transmitter cables. Radio and radar receiver cables are examples of susceptible cables. Passive cables include power, lighting, control, indication, and integrated circuit cables. When installing cables, the electromagnetic interference currents and voltages can be reduced by selecting the proper cable types, shielding, and routes, and by following installation guidelines. Care should be taken to maintain minimum cable separation distances, especially in cableways, whenever cable is installed by ship's force.

320-1.6.12 Transient Voltage Suppression System (TVSS) installation (for Non-Nuclear Vessels, and Non-Propulsion Spaces of Nuclear Vessels). -TVSS can be utilized to protect sensitive electronic equipment from damage or malfunction due to voltage spike in the power distribution system. Voltage spikes may be the results from a switching event such as breaker operation, or capacitor banks switching. TVSS shall be installed on a case-by-case basis, where the high cost of ownership is known to be the result of user equipment being susceptible to damage by large voltage perturbations at the input power terminals of electrical consuming equipment. TVSS devices are intended for installation at the Power Distribution Panels in a parallel method, not as a junction box. Appendix E (TVSS Installation Guidance) shall be utilized as installation guidance. Only approved TVSS should be utilized. Approved TVSS have passed qualification testing MIL-S-901 (Grade "A"), MIL-STD-167 and voltage spike testing per MIL-STD-1399 Section 300 Appendix A (2500 voltage spike line to line, 2500 voltage spike line to ground; voltage spike amplitude for 120 V AC systems shall be 1000 V AC, and voltage spike amplitude for 440 V AC systems shall be 2500 V AC). Approved TVSS part numbers and NSN's are provided in [Appendix C](#).

### 320-1.7 SYSTEM PROTECTION.

320-1.7.1 GENERAL. The electrical distribution system and the generators may be damaged by a moderate overcurrent if it is of sufficient duration. They may also be damaged by an equipment failure, such as an electrical fault in cables or switchboard, or failure of a generator prime mover to provide power. On 400-Hz power systems, equipment also may be damaged by continuous abnormal voltage or frequency conditions. Moderate overcurrents or overloads can be endured for the time it takes the operator to recognize the condition and take steps to correct it. No automatic protection is provided for moderate overcurrent or overvoltage. For certain other conditions, extensive damage can occur so quickly that immediate action is necessary. Automatic protective devices are installed

- a. To keep a generator prime mover from being driven by its generator if the prime mover fails.
- b. To isolate faulted circuits that allow the flow of excessive overcurrent, with minimum interruption of power supply to the rest of the system.
- c. To remove abnormal voltage or frequency conditions from equipment requiring 400-Hz power.

320-1.7.2 GENERATOR REVERSE POWER AND CURRENT PROTECTION. When a generator is operating in parallel with other generators and its prime mover fails, the generator will take power from the system, run as a motor, and drive the prime mover. This could damage the prime mover. A motoring generator, if allowed to remain on line, could also overload the other on-line generators, resulting in a total loss of ship service power.

To prevent this, the reverse power or reverse current relay trips the generator circuit breaker and takes the generator off the bus when the relay setting is exceeded. The setting is chosen according to the particular requirements of each generator set. Commonly used values are a reverse current setting of about 5 percent of rated generator current for a maximum duration of 10 seconds. On ac systems, the reverse power relay can be a separate device or combined with a power monitor. On dc systems, the reverse current device is part of the dc generator circuit breaker.

**320-1.7.3 SHORT-CIRCUIT OVERCURRENT PROTECTION.** The purpose of short-circuit protection is to isolate the faulted section of the distribution system, while maintaining power continuity to as much of the remainder of the system as possible. The following paragraphs outlines the method by which this selective short-circuit protection is obtained.

**320-1.7.3.1** By properly selecting the settings of the various circuit breakers, the time-current characteristics of the protective devices can be coordinated to trip the circuit breaker closest to the fault.

**320-1.7.3.2** [Figure 320-1-5](#) is a schematic diagram of part of a distribution system that has circuit breakers with the time-current characteristics shown in [Figure 320-1-6](#). [Figure 320-1-6](#) shows the tripping times in response to different magnitudes of fault current for a group of circuit breakers. The behavior of individual breakers of the same type and rating will differ slightly because of manufacturing tolerances. All breakers of that type and rating, however, will have characteristics that fall within the band.

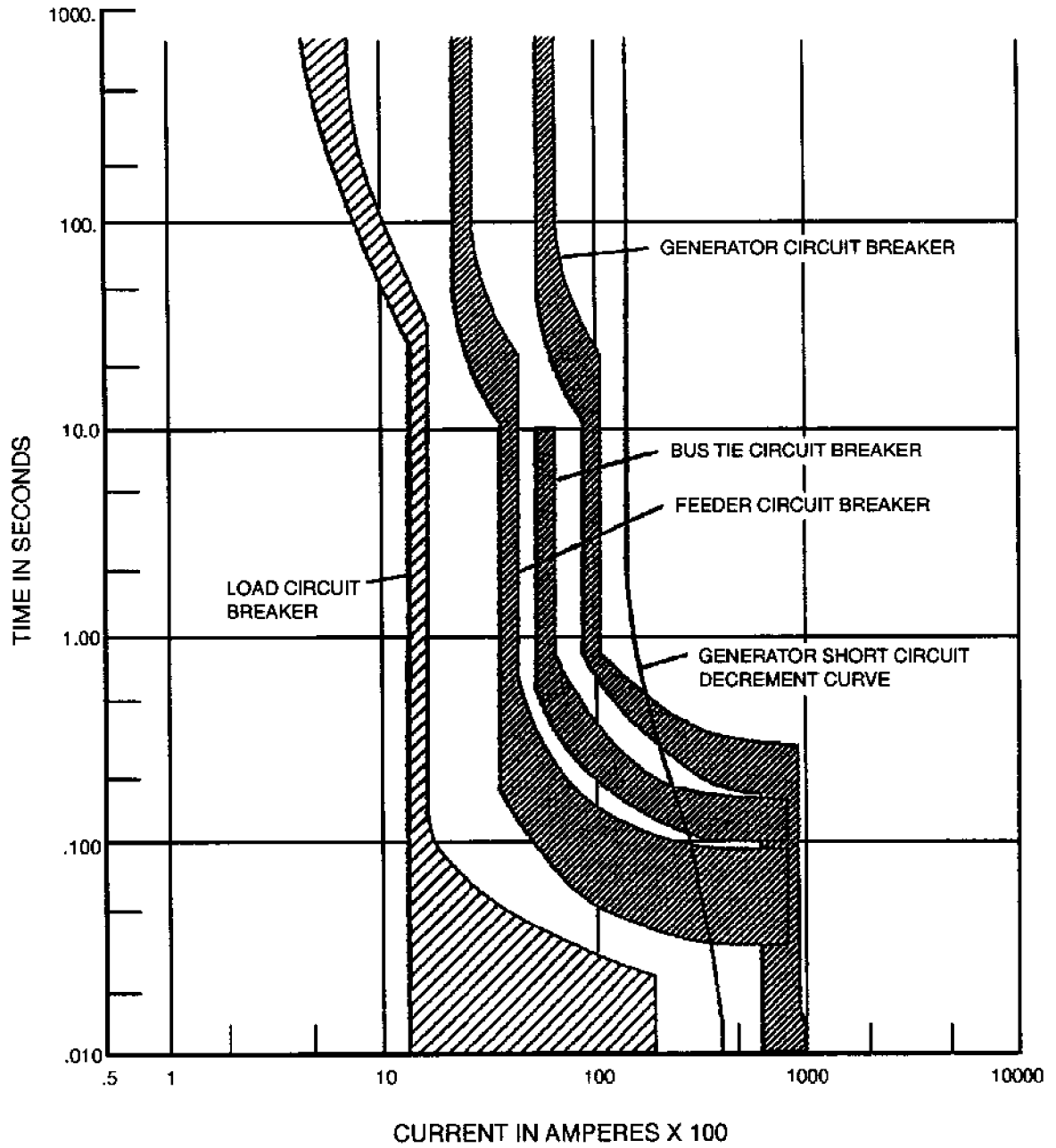


Figure 320-1-6. Time-Current Characteristics of Selectively Tripping Circuit Breakers

320-1.7.3.3 The tripping time indicated in [Figure 320-1-6](#) is the time required for a breaker to open and clear a circuit when breaker operation is not intentionally delayed. The figure also compares the generator circuit breaker characteristics with the generator short-circuit decremental curve. The decrement curve shows how generator short-circuit current changes with time. The instantaneous trip settings of generator circuit breakers are usually set to be 20 percent greater than the short-circuit current the generator can produce. The generator circuit breaker will not trip instantaneously. It will, however, trip after a time delay determined by the crossover of the generator decrement curve and the generator breaker time-current characteristic (as shown in [Figure 320-1-6](#)). This gives circuit breakers in the distribution system time to clear the fault before tripping the generator off-line for fault currents. For the same reason, bus-tie circuit breakers are usually not set to trip instantaneously, but will eventually trip after a short time delay (that is shorter than the delay for the generator breaker trip).

320-1.7.3.4 For currents less than the instantaneous trip current setting, an intentional delay in the operation of the breaker is used. The time delay is greater for small currents than for large currents. This is known as an inverse time delay. Consider a 10,000-ampere fault occurring at point A on the system shown in [Figure 320-1-5](#). Referring to [Figure 320-1-6](#), a 10,000-ampere current would trip the AQB load circuit breaker instantly, clearing the circuit within the breaker's instantaneous trip time. The ACB feeder circuit breaker in this example will not trip on a current of 10,000 amperes unless the current flows for 50 to 120 ms. If the 10,000 amperes of fault current flow through the bus tie circuit, the bus tie circuit breakers will only open if the current flows long enough to reach their time delay setting (between 300 and 400 ms in this example). The generator circuit breaker will open after its time delay setting is reached (about 700 ms) if it is not cleared by a circuit breaker nearer to the fault before that time. The differences in the time-current characteristics of breakers connected in series permit the breaker farthest downstream (the AQB load breaker) to trip first. This clears the fault from the circuit before the next breaker upstream from it (the ACB feeder breaker) operates. Fault current does not flow through the upstream circuit breakers (feeder, bus tie, or generator breakers) long enough to trip them, and they will remain closed. A fault at point B in the system shown in [Figure 320-1-5](#) would trip the feeder breaker, but not the generator or bus tie breakers. A fault at point C in [Figure 320-1-5](#) would trip either or both bus tie breakers, but not the generator breaker. In each case, the faulted section of the system is isolated. Power continuity is maintained to as much of the system as possible, considering the fault location because the circuit breaker nearest the fault interrupts power to a minimum portion of the system load.

320-1.7.3.5 Fused breakers (AQB-LF) are often used as switchboard feeder breakers. The fuses used with these breakers give them the required higher interrupting rating. The remainder of the distribution system is not changed. The AQB-LF breaker fuses will limit the fault current, thereby protecting the AQB breaker and the distribution system downstream, when the fault current is higher than the breaker can interrupt.

320-1.7.3.6 The circuit breaker settings that give the best protection are not the same in all installations. For full information on a specific installation, refer to the ship's plan, which shows circuit breaker time-current characteristics in curves similar to those in [Figure 320-1-6](#).

320-1.7.3.7 To obtain selective tripping, the time-current characteristics of different circuit breakers are carefully coordinated during system design. For example, if the system illustrated in [Figure 320-1-5](#) is operating split plant (bus ties open), and if the settings for the ACB feeder breaker and ACB generator breaker were interchanged (and the bands in [Figure 320-1-6](#) reversed), a fault at B in [Figure 320-1-5](#) would trip the no. 1 generator off line, but leave the feeder connected to the switchboard. This would cut off power to all equipment served by the no. 1 switchboard, but would not isolate the faulted section. Thus, because the selective protection scheme could be completely disrupted, unauthorized changes should not be made in circuit breaker trip settings.

320-1.7.4 FUSES. It is unfeasible to provide system protection on all types of naval ships and all circuits using circuit breakers only. In some cases, it is also necessary to use fuses as part of the system's circuit protection. Where fuses are used in series, some degree of coordination can be achieved by using fuses of different sizes or time characteristics. Progressively larger fuse sizes from load to generator give some degree of selectivity for overload and fault conditions. Available fuse sizes and characteristics, however, will limit the amount of time delay that can be obtained, and therefore the number of series fuses that can be used in a selective protection system. Care should be exercised in the replacement of fuses to ensure that



- a. Fuses are of the proper voltage rating.
- b. Fuses are of the proper interrupting capacity.
- c. For special fast-acting fuses supplying electronic equipment there may be no equivalent types. In this case, replacement fuses must be identical.
- d. Fuses used for protecting transformers and noninductive loads should be rated not less than 125 percent of the rated load current. Fuses used for protecting motor loads should be rated at 250 to 400 percent of the motor full load rating.
- e. Fuses rated for 15 amperes, or 15-ampere rated ALB-1 circuit breakers, are typically used to protect 60-Hz receptacle circuits for which a load is not specifically indicated.



## SECTION 2 OPERATION

### 320-2.1 CHARACTERISTICS OF ELECTRICAL INSTALLATION.

320-2.1.1 GENERAL. Naval electrical installations are simple, rugged, reliable, and flexible so that they can continue to function even when part of the equipment has been damaged. Those who operate these plants are to use their capabilities fully and are responsible for maintaining, as much as possible, uninterrupted availability of electric power where it is needed. To be able to do this, operating personnel should have the following:

- a. Thorough knowledge of operation and maintenance of component parts of the electric plant.
- b. Complete familiarity with the whole electric plant.
- c. Comprehensive understanding of system operation.
- d. Ability to apply general principles to specific installations.
- e. Knowledge of a few basic rules of system operation that are applicable to all naval installations.

320-2.1.2 NSTM REFERENCES. Instructions for specific items of electrical equipment are contained in other chapters of this manual and in manufacturers' technical manuals. In particular, see the following Naval Ships' Technical Manual (NSTM) chapters:

**NSTM Chapter 074 Volume 1, Welding and Allied Processes**

**NSTM Chapter 079 Volume 3, Damage Control - Engineering Casualty Control**

**NSTM Chapter 223 Volume 1, Submarine Storage Batteries - Lead Acid Batteries**

**NSTM Chapter 233 Diesel Engines**

**NSTM Chapter 235 Electric Propulsion Installations**

**NSTM Chapter 300 Electric Plant - General**

**NSTM Chapter 302 Electric Motors and Controllers**

**NSTM Chapter 310 Electric Power Generators and Conversion Equipment**

**NSTM Chapter 313 Portable Storage and Dry Batteries**

**NSTM Chapter 330 Lighting**

**NSTM Chapter 400 Electronics**

**NSTM Chapter 422 Navigation and Signal Lights**

**NSTM Chapter 430 Interior Communication Installations**

**NSTM Chapter 434 Motion Picture Equipment**

**NSTM Chapter 475 Magnetic Silencing**

**NSTM Chapter 491 Electrical Measuring and Test Instruments**

320-2.1.3 OTHER REFERENCES. You can become familiar with the electrical system as a whole by studying information related specifically to that installation. Valuable information on a ship's electrical installation can be found in the Ship Information Book (SIB), particularly volume 3 for power and lighting systems; the ship book of onboard plans; training aid booklets; and manufacturers' technical manuals supplied with many items of equipment. Supplement this study with a thorough study of the hardware itself so that generators, switchboards, distribution panels, and cables are not merely symbols on a plan but physical entities; and so that you know and thoroughly understand the functions, and relation of the hardware to the rest of the system.

## 320-2.2 GENERAL PRINCIPLES OF OPERATION.

320-2.2.1 OVERVIEW. General principles of system operation are a guide to the procedures that should be followed to maintain continuous availability of power and to operate safely within limits of installed protective devices. The general principles considered here relate to

- a. Electric plant operation
- b. Choice of power source
- c. Prevention of overloads
- d. Operation under casualty conditions

320-2.2.2 ELECTRIC PLANT OPERATION. The ship's electric power and lighting systems are designed to provide flexibility to ensure continuous service to vital power and lighting loads under normal and casualty conditions. The ship service generators and distribution systems in most naval ships are designed so that the electric plants can be operated in parallel or separately (split plant). Parallel operation provides continuity of power to all ship service loads even if one generator suddenly trips offline and minimizes the magnitude of system voltage and frequency variations. Selective tripping virtually eliminates the likelihood that all the circuit breakers for paralleled generators will trip as a result of a system fault. For these reasons, parallel operation is the preferred mode of operating ship service generators on most surface ships. It is often necessary to restrict the number of generators that are operated in parallel to avoid exceeding the interrupting rating of circuit breakers. For this reason, the electric plant on many ships can be configured in a combination of parallel and split plant operation of generators, with one or more groups of generators operating in parallel and the electric plant split by opening the bus ties at some location. Split plant operation is the preferred mode of operating ship service generators on submarines because maintaining continuity of electrical power is secondary to preventing total loss of power.

320-2.2.2.1 Limits on Number of Parallel Generators. All ships are provided with multiple ship service generators, that are required to be capable of parallel operation. In determining the number of generators that can be operated in parallel without exceeding the interrupting rating of circuit breakers, calculations are made to determine the impedance of cables from generators to the point of the fault and also the current that motors contribute to the fault. If a high magnitude fault current passes through a circuit breaker with insufficient interrupting capacity, the circuit breaker, switchboard section, and the generator can be damaged. In addition, personnel around the fault can be injured from arcing, fire, and exploding equipment. Various electric plants on major combatant and support ships of the U.S. Navy have been analyzed to determine the maximum number of generators that may be safely operated in parallel within limits of installed circuit breaker protective devices. The results are listed in [Table 320-2-1](#). Ship personnel should annotate the SIB to read as follows:

A maximum of ship service generators may be safely operated in parallel without exceeding the interrupting

capacity of the existing circuit breakers. This does not limit the number of ship service generators that may be paralleled momentarily for transfer of load or synchronizing.

After major overhauls, if either generators or protective devices have been changed, the maximum number of generators that may be safely operated in parallel should be checked with the Naval Sea Systems Command and the SIB updated accordingly.

320-2.2.2.2 Diesel Generator Set Loading. On ships with diesel generators, generators should be operated so that the load on engines used is not less than 50 percent of full load (**NSTM Chapter 233**).

320-2.2.3 CHOICE OF POWER SOURCE. When both normal and alternate feeders are connected to a load, the normal source of power should be used when available.

320-2.2.4 PREVENTION OF OVERLOADS. It is extremely important for operating personnel to realize that no automatically operated devices are installed to protect either the distribution system or the generators from damage by an overcurrent that only slightly exceeds rated capacity. The operator is responsible for monitoring the plant to guard against moderate overcurrents and power overloads. Because these conditions will not be picked up by the system's automatic protective devices, they can cause excessive heating of the generators if allowed to continue for too long. The operator can intervene because a moderate overcurrent or overload can be carried without damage long enough to permit the operator to recognize it from the ammeter and wattmeter readings, and to take steps to correct the problem.

320-2.2.4.1 When switchboard instruments reveal an overload condition or when an increase in load that will exceed the capacity of the operating generators is anticipated, another generator should be brought on line. (See **NSTM Chapter 310** for instructions on generator operation.)

320-2.2.4.2 Emergency switchboards are connected by feeders to loads that may need emergency power. Emergency generators do not have enough capacity, however, to provide power for the simultaneous operation of all loads that can be connected to the emergency switchboard. If ship service power is lost, an unsystematic use of emergency power may very quickly overload an emergency generator and stall its engine. The automatically applied load on each emergency generator is limited to less than the generator's capacity. Loads are then selectively added by the electric plant operator to approach generator capacity.

320-2.2.4.3 To use emergency power effectively and to ensure its availability when needed most, the engineering force on each ship must establish an operating procedure for the emergency switchboard. Under each condition of operation (cruising, general quarters), the operator must know which loads should have preference as well as the priority for additional loads that can be carried if one of the preferred loads is lost because of equipment damage.

320-2.2.4.4 Because of the limited capacity of emergency generators, the feedback tie from the emergency switchboard to the ship service switchboard installed on some ships should not be used to supply power to the ship service distribution system. Its use should be limited to special circumstances, such as dock conditions, when it is desirable to secure the ship service generators; and in cases where it is necessary to feed power through ship service switchboards to certain auxiliaries to start ship service generators, and to momentarily parallel with ship service systems to transfer power from the emergency power system to the ship service power system. When the feedback tie is used, increased watchfulness is necessary to prevent overloading of the emergency generators.

320-2.2.5 OPERATION UNDER CASUALTY CONDITIONS. Operation under casualty conditions depends on the type of casualty. Parallel operation is the preferred mode because the loss of a generator will not interrupt power to all loads in the parallel electric plant when generators are paralleled. If the loss of generating capacity results in an overload or approaches the 100-percent rating of existing generators, remove nonessential loads from the system until additional generating capacity can be brought on the line.

320-2.2.6 APPLICATION OF GENERAL PRINCIPLES. While general principles form an excellent guide to system operation, they are not enough. An operator who is thoroughly familiar with general principles only might know just what to do in any circumstance and still be unable to do it. Principles must be applied to specific installations to be of practical value, and they should be applied before, not after, an emergency. Water does not stop rising in bilges just to give an electrician time to figure out how to get power to submerged pumps. Operating personnel should study the capabilities and limitations of their installation and figure out how to get power to where it is needed after any conceivable casualties using any combination of generators still able to supply electric power. Personnel should be drilled again and again to become proficient. Simulating casualties that test the ability of the operating crew to provide power is excellent practice. To be most valuable, these tests should be made at an unannounced time. They should, however, be made only in such a way and under such circumstances that equipment will not be damaged, and a temporary loss of power will not endanger the ship. Personnel should be thoroughly familiar with the following specific points in applying general principles to a particular installation:

**Table 320-2-1.** Parallel Ship Service Generator

<b>Combatant and Support Ships</b>	<b>Max. No. of Generators In Parallel</b>
AE 22, 28, 29, 33, 34	3
AO 177, 178, 179, 180, 186	3
AOE 1, 2, 3, 4	3
AOE 6 Class	3
AOR 2, 3, 4, 5, 6, 7	3
AR 8	3
AS 33, 39, 40, 41	3
CG 47 Class	2
CGN 36 Class, 38 Class	2
CV 62, 63, 64	3
CV 67	3-Split Port and Starboard or 2-Otherwise
CVN 65	2
CVN 68 Class	2
DD 963 Class (except DD 964)	2
DDG 993 Class	2
DDG 51 Class	2
DDG 964	3
FFG 7 Class	4
LHD 1 Class	2
LPD 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15	3
LSD 36 Class, 41 Class, 49 Class	3
LST 1179 Class	3
LCC 19, 20 Class	3
LHA 1 Class	3

**Table 320-2-1.** Parallel Ship Service Generator - Continued

Combatant and Support Ships	Max. No. of Generators In Parallel
LHA 115, 117	4
LPH 9, 11	2
MCM 1 Class	2
AGF 3, 11	3
MCS 12	2
MHC 51 Class	2
NOTE: This table lists, for each major combatant and support ship, the maximum number of ship service generators that can be safely and continuously operated in parallel without exceeding the interrupting capacity of circuit breakers and jeopardizing personnel and equipment safety.	

- a. All sources of electric power for important auxiliaries. Personnel should know exactly where bus-transfer equipment is located and should be thoroughly drilled in using it to transfer from one power source to another.
- b. The capabilities of the casualty power system, if installed. Personnel should memorize the location of casualty power fittings and cables and should be drilled in their use. Hypothetical damage conditions should be assumed and connections for each case practiced.
- c. The location of stowage spaces for portable submersible pumps, the location of power outlets from which these pumps can be operated, and how to connect pumps to the casualty power system if power is unavailable at power outlets.
- d. The electrical damage control equipment that consists of tools and appliances for making temporary splices, and its use for making temporary repairs to the permanently installed ship service emergency distribution system. All electrical diagrams included in the Damage Control Book should be kept up to date in accordance with instructions in **NSTM Chapter 079**.
- e. Personnel preparing drills and engaged in drills should know which equipment (such as electronic equipment) might be damaged by unexpected power interruptions. Damage might occur because power to cooling equipment is interrupted while heat-sensitive electronic equipment is still operating or has had no chance to cool down. (Normal shutdown may require operation of cooling equipment for some time after heat-sensitive equipment is secured.) Electronic equipment may be damaged because of high transient voltages on the system. Transients on the electric power system can be either the high frequency, high voltage, short-time type or the long-time type. Short-time transient spikes can be produced whenever there is a sudden change to the electrical circuit (such as a circuit breaker operating). The long-time type dims lights and dips meters during motor starting or fault clearing. The short-time type is particularly dangerous to sensitive semiconductors. If electronic equipment cannot withstand these transients (either short- or long-time), they should be protected during drills. Equipment that may be damaged from loss of cooling is extremely vulnerable during battle conditions when power interruptions may occur. For drills, this equipment should be transferred carefully to power sources not involved in drills.

320-2.2.6.1 Automatic Starting of Diesel or Gas Turbine-Driven Emergency and Standby Generators. Diesel and gas turbine-driven emergency generators can be set for manual or automatic starting as follows:

- a. Automatic starting is required whenever the ship is underway or operating on its own ship service generators. Automatic starting should also be required when the ship is operating on shore power to ensure an alternate power source (particularly for fire pumps) if shore power is lost.

- b. On ships that can parallel their ship service generators with shore power, emergency generator controls should be left in the automatic start position. Ships without this capability should put emergency generator controls in the manual mode. When ship service and shore power are not paralleled, there will be no voltage at the switchboard the instant a ship service switchboard is transferred from ship service power or to shore power and vice versa. Emergency switchboards are always energized from ship service switchboards. Upon loss of voltage from the ship's supply to any emergency switchboard, the emergency generator associated with that switchboard will start automatically. Thus, before making a transfer causing momentary loss of ship service voltage on the emergency switchboard, the automatic starting circuit should be made inoperative for the transfer period. After the transfer has been made, the switchboard, generators, and automatic starting device should be set for automatic start. When this setup is made, extreme care should be taken to ensure that all auxiliaries for the diesel generator function properly.
- c. Emergency generators will be set for automatic start when they may be unattended. Precautions must be taken to avoid prolonged periods of operation under these unattended conditions. Operation of emergency generators shall be checked whenever there has been, or there is believed to have been, a failure of either ship or shore power. Momentary power failure may begin the generator starting sequence, causing it to start and continue running. A rapid return to normal power, however, may result in no load being transferred to the emergency generator. This would make it difficult to detect that the generator is running. Methods of stopping emergency generators are normally provided in the compartment in which the generator is installed. Furthermore, it is usually necessary to set up the lube oil alarm manually after the generator starts.
- d. When the ship is on shore power and shore power is lost, precautions should be taken to ensure that the feedback procedure is not begun until it is confirmed that the shore power breakers or other isolating breakers are opened. These precautions are taken to avoid unintentional out-of-phase paralleling of ship's power with shore power if shore power is unexpectedly restored.
- e. On many ships that have diesel or gas-turbine driven ship service generators, separate emergency generators are not provided. This is because the ship's service generators can be automatically or manually started and then manually placed on-line as rapidly as typical emergency generators. On ships with only ship service generators, a generator that is not on-line is normally designated as the standby generator. It is set up for either automatic start or rapid manual start in the event of a power failure or overload condition. Although a ship's control system may be able to safely bring a standby generator on the line when operating on ship's power, this capability may not exist when the ship is on shore power. The preferred lineup when a ship is on shore power is to have a standby generator set for automatic start and assumption of load upon loss of shore power, providing the ship's control system is designed to isolate shore power from ship's power. Precautions should be taken to ensure that this isolation remains and is not defeated. These precautions will prevent an out-of-phase paralleling of ship's power with shore power if shore power is unexpectedly restored after the standby generator is on the line.

320-2.2.6.2 Protection of Personnel. Grab rods and guardrails should always be in position around switchboards and other power distribution equipment when the equipment is energized (unless emergency repairs are necessary). Grab rods and guardrails should be carefully maintained to ensure that they are secure and will not be accidentally dislodged. Insulating matings covering the deck in the front and the rear of the switchboards should always be in place. In addition, the following precautions should be taken.

- a. When maintenance work is performed on a circuit, ensure that the circuit remains dead and is not energized by the closing of a remote circuit breaker. All circuit breakers or switches that could energize the circuit if closed shall be tagged with a red danger tag. The tag is not to be removed until work is complete (see **NSTM Chapter 300** ). Although an option, it is recommended that a handle-locking device be attached (see **NSTM Chapter 300** ), if available, to switches and circuit breakers that have been tagged.



- b. Even though all circuit breakers to and from a switchboard are open, voltage can be present in the switchboard through control circuits. Examine switchboard and ship system drawings to determine if control voltages could be present. Add a note to deenergize control power to standard procedures for maintaining or troubleshooting such switchboards.
- c. If removable covers (plates or grilles) are provided on switchgear units, use great care in removing them when equipment is energized. A cover may tip in after removing some fastenings or while it is being lifted off. This could result in contact with a live part that could cause a short circuit, an arc, or injury to personnel.
- d. For protection of personnel, ground all enclosures and equipment frames to the ship. Particular attention should be paid to the stored capacitance potential present in the 4160V aircraft carrier switchboards.

320-2.2.6.3 Moisture in Switchboards. Under some conditions, moisture may condense within switchboards, particularly those having barriers between units. Condensation can form when switchboard parts cool down (such as when a switchboard is secured); lower than normal temperatures exist within a compartment when the compartment is secured; or steam escapes from open drain lines when lighting off cold equipment. Switchboards should be inspected and corrective measures taken when moisture is found or conditions favorable to moisture condensation exist. The corrective measures should follow the applicable Planned Maintenance System's Maintenance Requirement Card.

320-2.2.6.4 Electric Plant Operating Rules. A few basic operating rules should be observed on all installations.

- a. Watch switchboard instruments. They indicate the operating condition of the system, revealing overcurrents or overloads, improper division of kilowatt load or reactive current between generators operating in parallel, and other abnormal operating conditions.
- b. Keep the frequency (on ac systems) and voltage at their correct values. Departure from either affects, to some extent, the operation of all equipment supplied with electric power. The operation of vital electronic, interior communication, and weapons control equipment may be seriously affected. This sensitive equipment requires careful adjustment of voltage regulators and prime mover governors to obtain satisfactory performance.
- c. Use judgment when closing circuit breakers after they have tripped automatically. If a circuit breaker trips immediately upon the first closure, investigate before closing it again. The circuit breaker may, however, be closed a second time without investigation if the immediate restoration of power to the circuit is important and the interrupting disturbance when the circuit breaker was tripped was not excessive. Repeated closing and tripping could damage the circuit breaker and increase the repair or replacement work needed to get the circuit operating again. Some ships have preventive logic (fault circuit protection to prevent automatic circuit breaker reclosings after they were tripped due to a fault).
- d. Use the hold-in device (not available on new ships) on circuit breakers with judgment and only when necessary. The hold-in device enables an operator to hold a trip-free circuit breaker closed when the current is in excess of the tripping value. The circuit breaker opens automatically as soon as the hold-in device is released if the current is more than the tripping current. In an emergency, it may be vitally important to obtain power even at the risk of burning out equipment. The hold-in device makes it possible to do this. When holding a circuit breaker closed, however, keep in mind that the circuit is not protected against damage by excessive current. The longer the circuit breaker is held closed, the greater the chance of permanently damaging circuits or equipment. A circuit breaker should never be held closed unless there is an emergency that justifies this risk.
- e. Never parallel ship service generators until they have been synchronized (see **NSTM Chapter 310**).
- f. Never close bus tie circuit breakers to parallel buses on two energized switchboards until the buses have been synchronized.

- g. Never close the bus tie circuit breaker to restore power to a switchboard that has lost it because of failure of a local generator. The breaker may be closed if the generator circuit breaker has first been tripped by hand or if it has been definitely established that the generator circuit breaker is in the open position. Do not rely on the reverse power relay to trip the generator circuit breaker.
- h. Never parallel ship service generators with shore power except for the short interval required to transfer the load from one source of power to the other.
  - 1 Never parallel ship service generators with shore power of a different frequency (such as 50 Hz).
  - 2 Never parallel with shore power for transferring a load without using a synchroscope or synchronizing lights. On ships not provided with a synchroscope for synchronizing between shore power and the bus, generator breakers shall be opened first. Then, the shore power breaker shall be closed. On some ships, shore power may be connected to the bus tie with bus tie breakers open. Synchronizing can then be accomplished across bus tie breakers.
  - 3 When the shore power and ship service generators are placed in parallel, the normal synchronizing process is reversed. The incoming shore power is the controlling source. Several precautions should be taken when paralleling with shore power, in addition to the usual ones when paralleling two ship service generators. The shore power connection phase rotation must be the same as the ship phase rotation. This is easily determined with a phase-sequence indicator. If more than one shore power connection is to be paralleled, actual phases of the shore power must be in the same rotation and also be connected to match ship phases. This prevents a short circuit through the ship system. If shore power phases 1, 2, and 3 are connected respectively to ship phases A, B, and C at shore power connection no. 1, then the connection at shore power connection no. 2 must also be connected 1, 2, and 3 to A, B, and C, respectively. When paralleling with shore power to transfer the load, bring the ship voltage up to, or as close as possible to, the shore power voltage.
  - 4 In some cases, the shore power voltage will be about 480V. Increase the ship's generator voltage to match shore power voltage. Bring the ship frequency to that of the shore power. Turn on the synchroscope, synchronize the ship power with the shore power, and close the shore power breakers. Quickly transfer load to shore power. Trip the ship service generator breakers.
- i. Always check phase sequence before connecting to a shore power supply. Be sure that connections are made so that the phase sequence on the ship will be A, B, and C. If the shore power is connected so that the wrong phase sequence results on the ship, motors (such as those on ventilation exhaust fans) will run in the wrong direction.
- j. Never parallel an emergency generator with any other generator because loss of the other generator may cause the emergency generator to become over loaded and trip off line. An emergency generator (standby set), however, may be temporarily paralleled with a main generator to 1) provide a smoother transfer of power at cold ship start for sensitive loads or 2) when cold ship start loads are only accessible through main switchboards.
- k. Always observe electrical safety precautions (see **NSTM Chapter 300** ).
  - l. Never adjust a ventilation opening, for personal comfort of watchstanders, to a position that allows spray or solid water entering the ventilation system through weather openings to be discharged onto switchboards, distribution panels, bus bars, or other electrical equipment.
- m. Always operate switchboards and distribution system equipment as if no automatic protective devices are installed. Sooner or later, problems will result from careless operating practices that assume that automatic protective devices will either prevent incorrect operation or prevent damage from incorrect operation. Automatic protective devices used with the distribution system are intended to protect against damage as a consequence of equipment failure, not operator failure. The operator must read and follow instructions on warn-

ing plates and indicator lights and know the system and how to operate it correctly. The operator must never depend on automatic devices to eliminate mistakes or a mistake's consequences.

- n. Only operate bus disconnects (disconnect links) when they are not energized. Exception may be taken under emergency conditions and in those instances where a normal means of deenergizing the bus disconnect is not provided, such as in a submarine battery power distribution system. Bus disconnects shall never be opened or closed under load. Not energized is defined as that condition in which no source of voltage is available on either side of the disconnect. Under load is defined as that condition in which current will be interrupted when opening or current will flow immediately after closing the bus disconnect.
- o. To secure an ac generator operating in parallel with another generator or other generators
  - 1 Turn the governor motor control switch of the generator being secured in the DECREASE speed direction. Turn the governor motor control switch (or switches) of the other generator(s) in the INCREASE speed direction until all the load is shifted from the generator being secured.
  - 2 Trip the circuit breaker of the generator being secured.
  - 3 Return the automatic voltage regulator control to the manual position and the manual voltage control rheostat to the decrease voltage position.

### 320-2.2.7 SHORE POWER.

320-2.2.7.1 Shore Power Overvoltage Precautions. To minimize the dangers of overvoltages on ac shore power to ships, the following precautions should be taken:

- a. **New construction and conversion** . The contractor or building yard is responsible for ensuring that overvoltages do not occur on any ship under construction or conversion.
- b. **Other ships** . The yard or base must take every reasonable precaution to ensure against overvoltages when supplying any ship or submarine with 60-Hz shore power.
- c. **Maximum voltage tolerance** . The voltage, as measured at the ship's main switchboard, should not be allowed to exceed the maximum steady-state voltage of 462V. This voltage may be exceeded prior to assuming shore power. Once the shore power load is assumed, however, the voltage should drop to the steady-state range as a result of losses in the shore power cables and ship distribution system.

320-2.2.7.2 Instructions and Procedures for Shore Power Connection. Shore power arrangements and hardware used on both ship and shore installations are so diversified that no specific installation instructions can be outlined in detail. A shore installation that has one circuit breaker supplying a number of cable sets presents a particular hazard. In this case, phase rotation and phase orientation can be verified only by energizing all shore terminals. Phase rotation should be checked with only one set of cables installed. The latest designs have a single, three-phase receptacle for ship and shore power terminals. These receptacles are keyed such that phase rotation cannot be altered provided both the ship and shore use these receptacles, and the cables are not spliced. Systems using three-phase receptacles are normally designed so that interlocks on the receptacles automatically trip associated circuit breakers whenever the receptacle cover is open and a shore power cable plug is not in place. Voltage to these receptacles, however, should still be checked to ensure they are deenergized prior to installing the shore cables. The following instructions assume that the shore installation has a separate circuit breaker or disconnect for each set of cables and that three-phase receptacles are used. These basic instructions and procedures shall be followed prior to and when connecting to shore power.

1. To avoid personnel injury and equipment damage, carefully inspect shore power fittings for any defects prior

to making shore power connections. Follow installation instructions, Maintenance Requirement Card (MRC) procedures, and check-off lists cautiously when completing the shore power connection. Also do this when performing any other steps necessary for transfer of the load from ship generators to shore power.

2. Connect and disconnect shore power under the direct supervision of the Electrical Officer, a qualified leading electrician, and the shore activity personnel.
3. Visually inspect shore power cables for any defects (such as cracks, bulges, and indications of overheating). Thoroughly examine spliced cables, in particular, since improperly spliced ones are extremely dangerous because the cable phase continuity may have been altered during splicing. Strip lug-to-lug connection splices of insulation and check the connection itself for cleanliness, tightness, and good surface contact. Repair all defects and reinsulate all lugs before placing cables in service. Check cables for insulation resistance using a 500V megger (megohmmeter). Insulation resistance readings shall meet the requirements of **NSTM Chapter 300**. Check resistance between phases and between each phase and ground. For this test, shore ground shall be the enclosure that houses shore power terminals or receptacles. On ships, ground shall be the ship hull or any metal extension of the hull. During the physical inspection and megger tests, check the phase identification of the cables.
4. Ensure shore power cables connected to a ship are the same length to avoid voltage unbalance among cables.
5. Tag with high voltage signs and, if possible, rope off the work area surrounding the ship's shore power terminal box or receptacle. This box or receptacle is exposed to elements, and any moisture can cause a serious problem. With the ship's shore power breaker tagged in the open position, disconnect all equipment (for example, meters and indicator lights) that could be damaged by a megger test or cause a false reading. Test terminals in the ship's shore power terminal box or receptacle with a voltage tester to ensure that they are deenergized. Next, with a 500V megger, test the insulation resistance between terminals and from each terminal to ground.
6. Lay out the cable between the supplying shore power outlet and the ship's shore power terminals box or receptacle. Ensure that the cable is of sufficient length to allow enough slack for the rise and fall of the tide but not of such length as to permit the cable to dip into the water or become wedged between the ship and pier. Do not permit cables to rest on sharp or ragged objects such as gunwales. Avoid sharp bends. Raise splices and connectors from the deck or pier to protect against water contamination. Protect excess cable in a manner that will minimize damage from vehicle and pedestrian movements.
7. Connect shore cables to ship's shore power terminals according to phase or polarity in the box and on the cables.
8. Ensure correct phase orientation (phase relationship) by checking color coding or phase identification markings on cables. Reconfirm correct phase identification by meggering between like phases of cables, and using a phase orientation meter. Cables that give a zero indication will have the same phase relationship. After meggering, reconnect any disconnected equipment.
9. With a voltmeter, that has just been checked with a known energized source, check to ensure that shore power terminals are deenergized.
10. Connect shore power cable to terminals.
11. Check for proper phase rotation either by alternately energizing shore power receptacles one at a time and observing the ship phase rotation indicator mounted in the ship service switchboard, or by means of a portable meter connected to an appropriate bus. After checking phase rotation, deenergize each source shore power receptacle prior to energizing the next receptacle for the phase rotation check.
12. Energize all shore power terminals or receptacles and proceed with the transfer of electrical load to shore power in accordance with Engineering Department Operating Instructions. Instructions will vary depending on whether or not the ship is equipped to synchronize with shore power. After cables are carrying the load,

inspect all connections to locate any possible overheating resulting from poor connections or reduced copper in the circuit. Inspect cable ends at the connection point for heavy strain or overheating.

320-2.2.7.3 Operation from Shore Power. Shore power cables are rated at 400 amperes. Switchboard meters must be checked to ensure that the total load on shore power cables does not exceed the combined rating of the shore power cables. Total shore power load in amperes should be no more than 400 times the number of three-phase shore power cables connected.

320-2.2.7.4 Shore Power Disconnection. When disconnecting shore power, observe the same safety precautions outlined in the connecting sequence except for those regarding meggering cables and checking phase orientation and phase rotation. Again, tag shore power breakers and disconnect in accordance with safety procedures. Determine that the shore power busing and cables are deenergized by using a voltage tester that has just been checked with a known energized power source.

320-2.2.7.5 Addition Shore Power Precautions. Normally, moving energized shore power cables is prohibited. Shore power disconnect links (submarines only) should never be opened or closed when either shore power cables or the ship's power bus is energized.

320-2.2.8 CASUALTY POWER. Casualty power cables are to be rigged only when required for use or for practice in rigging the casualty power system. In rigging cables, connections should be made from the load to the supply to avoid handling energized cables. During practice sessions, connections should not be made to an energized casualty power terminal, such as terminals provided for power panels. Where casualty power connections are to be made to a casualty power terminal supplying a load or power panel, all power to the load or power panel should be secured and the circuit breakers tagged out before the drill is performed. Refer to **NSTM Chapter 079, Volume 3**, for procedures that should be followed when rigging casualty power cables.

320-2.2.9 INDICATOR LIGHT COLOR DESIGNATION. The ability to operate the electrical system properly requires a knowledge of the meaning of indications made by color. Because a limited number of colors can be readily distinguished, only a few colors are used for all designations, and each color is used for a number of designations.

- a. Indicator light color designation (except for special applications in dark adapted spaces) is as follows:
  - 1 **RED** - danger or emergency condition requiring immediate attention or corrective action
  - 2 **GREEN** - normal condition
  - 3 **WHITE** - power available or power on
  - 4 **BLUE** - closed, advisory
  - 5 **CLEAR** (not etched) - synchronizing or ground detector lights
  - 6 **YELLOW** - Abnormal, but not requiring immediate attention
- b. Indicators with red lenses and stencil-type marker discs are used in dark spaces requiring visual adaptation by personnel.



## SECTION 3 MAINTENANCE

### 320-3.1 PREVENTIVE MAINTENANCE.

320-3.1.1 PLANNED MAINTENANCE SYSTEM(PMS). When the PMS is installed, preventive maintenance shall be performed in accordance with applicable Maintenance Requirement Cards(MRC's).

### 320-3.2 GENERAL MAINTENANCE

320-3.2.1 FUNDAMENTAL RULES. Three fundamental rules for the maintenance of electrical equipment are

- a. Keep equipment clean and dry.
- b. Keep electrical connections and mechanical fastenings tight.
- c. Inspect and test at sufficiently short intervals to make sure that the equipment is in operating condition.

320-3.2.2 EQUIPMENT CLASSES. Distribution system equipment requiring maintenance can be grouped into two general classes: 1) cables, with their fittings, and 2) switchboards(including distribution panels) with their associated equipment. **NSTM Chapter 300** provides maintenance instructions for both classes of equipment.

### 320-3.3 PHASE IDENTIFICATION.

320-3.3.1 GENERAL. The terminals on switchboards, distribution panels, and equipment are marked with the letter A, B, or C to identify the phase. The standard arrangement of phases in power and lighting switchboards, distribution panels, feeder distribution boxes, feeder junction boxes, and feeder connection boxes is in the order A, B, C from top to bottom, front to back, or right to left, as viewed from the front of the switchboard, panel, or box(hence, left to right when viewed from the rear). [Table 320-3-1](#) shows the color coding on cables for three-phase ac systems.

320-3.3.2 PHASE SEQUENCE. The phase sequence on United States Navy ships is ABC; that is, for a delta-connected system, maximum positive voltages on the three phases are reached in this order, AB, then BC, then CA. Phase sequence determines the rotation direction of three-phase motors.

### 320-3.4 CASUALTY POWER.

320-3.4.1 The older-style, casualty power portable cable terminates at each end of individual conductors with copper ferrules. Each individual conductor's insulation is exposed to shipboard ambient temperatures oil or oil fumes, and accidental damage. After 5 years or more of exposure, the conductor insulation may have aged and lost elasticity to the extent that it will crack open when bent during rigging of the casualty power system for emergency use. Exposed ends of individual conductor casualty power cables should be inspected at least once a year. The more recently designed casualty power components consist of molded, three-phase plugs or connectors. The cable shall be inspected in the same manner as older-style components. The best method of detecting insulation deterioration is to bend all conductors sharply by hand. If no cracks develop, the insulation is satisfactory. If cracking is noted, the following repair must be made.

1. Cut off protruding ends and prepare new terminations as indicated for end preparation of cable for ac systems(see **NSTM Chapter 079, Volume 3** ). To avoid baring the conductor when inserting it in bulkhead terminal, do not strip more than one inch of the insulation from the conductor(see [Figure 320-3-1](#)).
2. Make cut ends of the cable insulation watertight by applying one heavy coat of clear, air-drying varnish.

**Table 320-3-1.** Color Coding on Three-Phase AC Systems

Cable Type	Phase or Polarity	Color Code
4 Conductor	A	Black
	B	White
	C	Red
	Neutral	Green
3 Conductor	A	Black
	B	White
	C	Red

3. Place round copper ferrule on the conductor and secure it by forming it as shown in [Figure 320-3-1](#).
4. Fabricate forming die as shown in [Figure 320-3-2](#) or order through the supply system.
5. For phase identification by touch, use the following method 1 or 2:
  - a Method 1 - Apply close wrapping of cotton twine of approximately 3/64-inch diameter as follows: black wire(A phase), one wrapping; white wire(B-phase), two wrappings; and red wire(C phase), three wrappings.
  - b Method 2 - As an alternative to cotton twine, install O-rings for phase markings. Slip shrink tubing of required color over O-rings as follows: black wire(A phase), one O-ring, black tubing; white wire(B phase), two O-rings, white tubing; and red wire(C phase), three O-rings, red tubing. Apply heat in accordance with manufacturer's instructions to shrink the tubing to hold the O-rings securely in place on the conductor. If colored tubing is unavailable, use transparent tubing.
6. For watertight effectiveness, extend heat shrinkable tubing approximately 1/8 inch over the copper ferrule.
7. For end preparation of cables for dc system, see [Figure 320-3-3](#).
8. Seize ends of bare conductors with 0.025-inch-diameter copper wire; solder in place. Care should be taken to preserve the flexibility of the remaining bared conductor.
9. Seal cut ends of cable insulation by applying a heavy coat of clean air-drying varnish.
10. Terminate casualty power cables using one of the following two acceptable methods:
  - a Heat shrink tubing - Apply heat shrink tubing to the cable, extend it 1/8-inch over the ferrule, and apply varnish to provide watertightness.
  - b No heat shrink tubing - Strip the cable insulation back 1/8 inch over the ferrule and apply varnish to provide water-tightness.



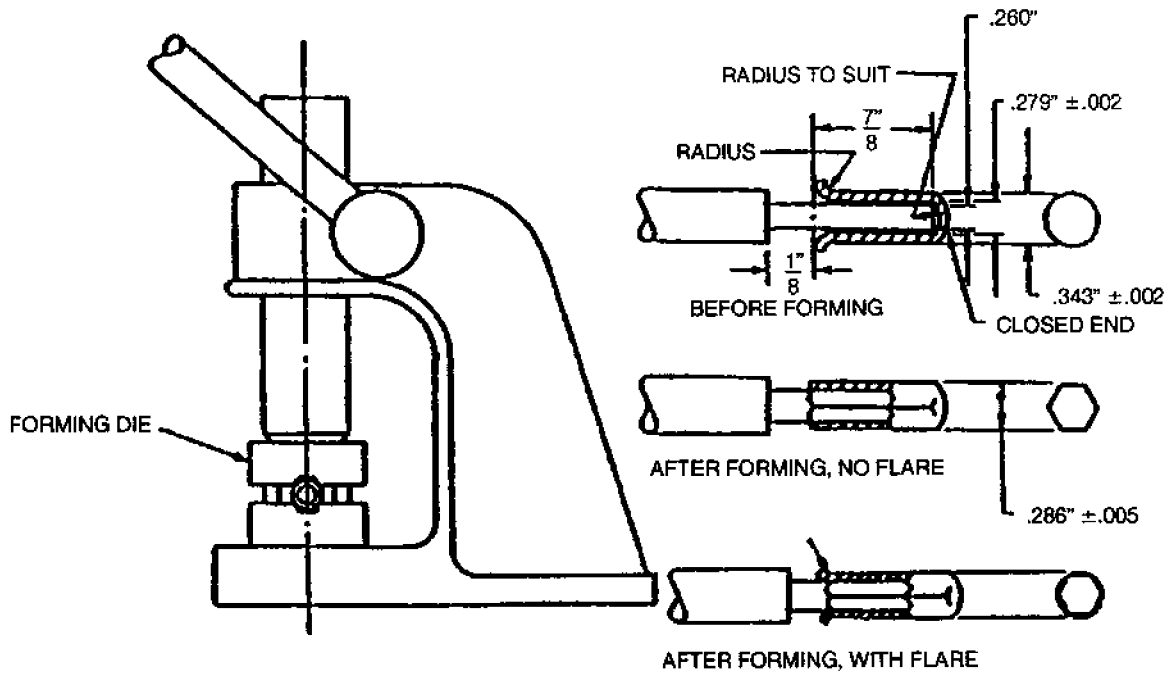


Figure 320-3-1. Securing Copper Ferrule to Conductor (Typical)

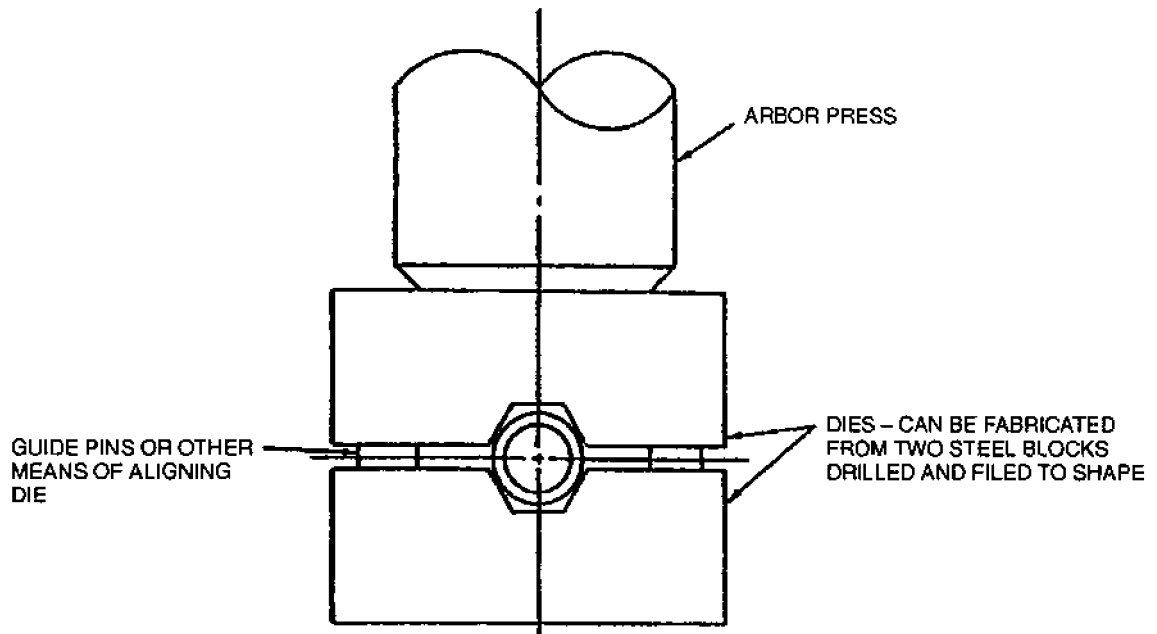


Figure 320-3-2. Forming Die

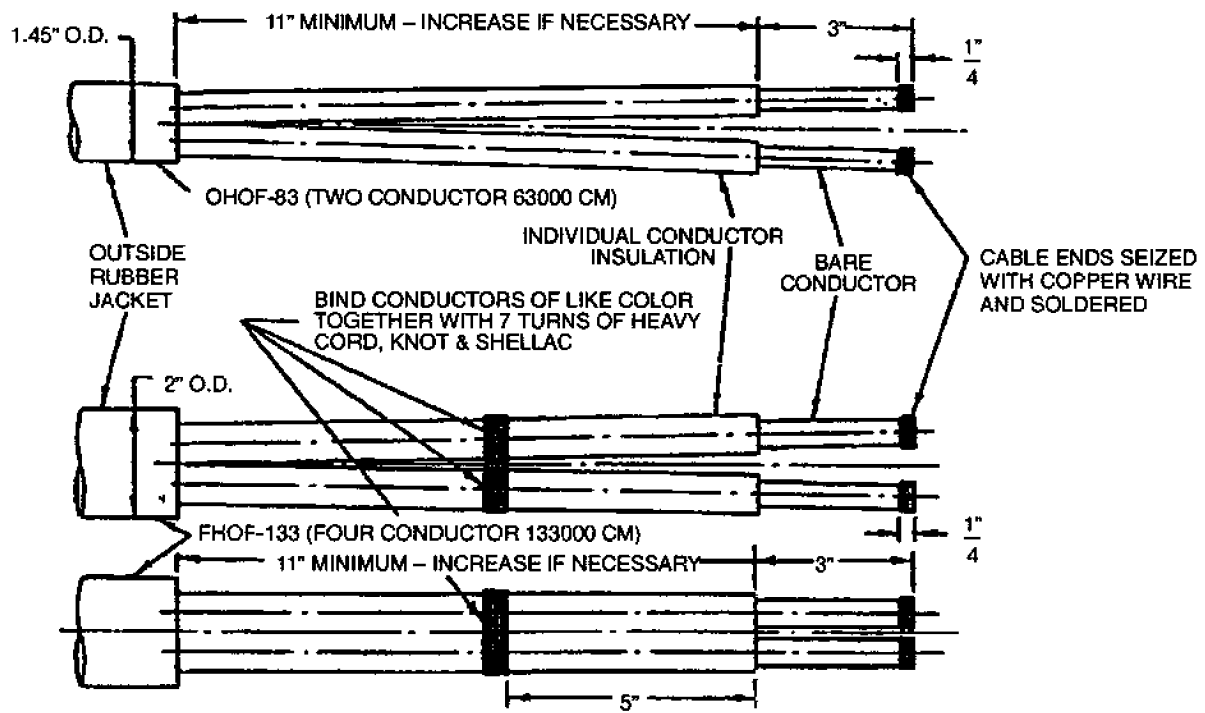


Figure 320-3-3. Portable Casualty Power Cable Ends(DC Systems Only)

## APPENDIX A

## PRINCIPAL POWER SUPPLIES IN FOREIGN COUNTRIES

The listings in this appendix represent types of electrical supplies most generally used in various countries. For power supply characteristics of particular cities in foreign countries, refer to *Electric Current Abroad*, a publication of the U.S. Department of Commerce, Bureau of International Commerce, Washington, D.C., 20230. In cases where definite information relative to specific locations is necessary, consult the Electrical Division of the above named bureau.

Table 320-A-1. POWER SUPPLY TYPES IN GENERAL USAGE

Territory	Volts, Direct Current (VDC)	Volts, Alternating Current (VAC)	Freq.(Hz)
North and Central America:		---	---
		---	---
Alaska		110*, 220*	60
Bermuda		120, 208, 240	60
Belize		110, 220, 440	60
Canada		120*, 240	60
Costa Rica		120, 240	60
El Salvador		115, 230	60
Guatemala		120*, 240	60
Honduras		110*, 220	60
Mexico		127*, 220	60
Nicaragua		120, 240	60
Panama (Republic)		110, 120, 220, 240	60
Panama (Canal Zone)		115, 120, 230, 240	60
West Indies:		---	---
		---	---
Antigua		230, 440	60
Aruba		115, 127*, 220, 230	60
Bahamas		120, 208, 240	60
Barbados		115, 200, 230	60
Cayman Islands		120, 240	60
Cuba		115*, 120, 208, 230	60
Curacao		127, 220*, 380	50
Dominica		230, 400	50
Dominican Republic		110, 220	60
Grenada		230, 400	50
Guadeloupe		220, 380	50
Haiti		110, 220	50, 60
Jamaica		110*, 220	50
Montserrat		230, 400	60
Martinique		220, 380	50
Puerto Rico		120*, 240	60
St. Kitts and Nevis		230, 400	60
St. Lucia		240, 416	50
St. Martin		110, 220	50, 60
St. Vincent	230, 400	50	50

**Table 320-A-1. POWER SUPPLY TYPES IN GENERAL USAGE -**

Continued

<b>Territory</b>	<b>Volts, Direct Current (VDC)</b>	<b>Volts, Alternating Current (VAC)</b>	<b>Freq.(Hz)</b>
Trinidad and Tabago	115, 230, 400	60	60
Virgin Islands (American)	120, 240	60	60
Virgin Islands (British)	100	60	60
South America:	---	---	---
	---	---	---
Argentina	220*, 240	220*, 380	50
Brazil		110, 127*, 220, 240,	60
Guyana		380	50*
Chile		110, 220	60
Columbia		220*, 380	50
Ecuador		110, 220	60
French Guyana		120, 127, 208, 220,	60
Peru		240	50
Surinam		220, 380	60
Uruguay		110*, 220	60
Venezuela		127, 220	50
		110*, 240	60*
Europe:		---	---
		---	---
Albania		125, 220*, 230	50
Azores Islands		110, 190, 220*, 380	50
Belgium		220*, 380, 400	50
Bulgaria		230, 380	50
Channel Islands		230, 240, 400, 415	50
Cmwlth of Ind. States		220, 380	50
Corsica		120, 127*, 200, 220	50
Crete		220, 380	50
Denmark		220*, 380	50
Dodecanese Islands		220, 380	50
England		240, 415, 480	50
Estonia		220, 380	50
Faeroe		220, 380	50
Finland		220, 380	50
France		220, 380	50
Germany		220*, 380	50
Gibraltar		240, 415	50
Greece		220*, 380	50
Greenland		220, 380	50
Iceland		220*, 380	50
Isle of Man		240, 415	50
Ionian Islands		220, 380	50
Ireland, Northern		220, 380	50
Ireland, Republic		220, 380	50

**Table 320-A-1. POWER SUPPLY TYPES IN GENERAL USAGE -**

Continued

<b>Territory</b>	<b>Volts, Direct Current (VDC)</b>	<b>Volts, Alternating Current (VAC)</b>	<b>Freq.(Hz)</b>
Italy		127*, 220, 380	50
Latvia		220, 380	50
Lithuania		220, 380	50
Malta		240, 415	50
Monaco		127, 220, 380	50
Netherlands		220*, 380	50
Norway		230	50
Poland		220, 380	50
Portugal		220*, 380	50
Romania		220, 380	50
Scotland		240, 415	50
Spain		127*, 220*, 380	50
Sweden		220*, 380	50
Yugoslavia		220, 380	50
Wales		240, 415	50
Asia:	---	---	---
Aden	---	230, 400	50
Bahrain	---	220, 380	50
Bangladesh	---	230, 400	50
Burma	---	230, 400	50
Cambodia	---	120*, 220, 208, 380	50
China	---	220*, 380	50
Cyprus	---	240, 415	50
Hong Kong	225, 300, 450, 600	200, 346	50
India	---	225, 230, 400, 440,460	50
Indonesia	---	127, 220, 380	50
Iran	---	220*, 380	50
Iraq	---	220, 380	50
Israel	---	230, 400	50
Japan	---	100, 200	50, 60*
Jordan	---	220, 380	50
Korea	---	110, 220, 380	60
Kuwait	---	240, 415	50
Lebanon	---	110*, 190, 220, 380	50
Macao	---	220, 346	50
Malayan Federation	---	230, 400	50
Malaysia	---	230, 240, 400, 415	50
Maldives	---	230, 440	50
Okinawa	---	100, 120, 200, 240	60
Oman	---	220, 380	60
Philippines	---	110, 115, 220, 230	50
Qatar	---	240, 415	50

**Table 320-A-1. POWER SUPPLY TYPES IN GENERAL USAGE -**

Continued

<b>Territory</b>	<b>Volts, Direct Current (VDC)</b>	<b>Volts, Alternating Current (VAC)</b>	<b>Freq.(Hz)</b>
Sarawak	---	230	50
Saudi Arabia	---	127, 220	60*
Seychelles	---	240	50
Singapore	---	230, 400	50
Sri Lanka	---	230, 400	50
Syria	---	220, 380	50
Taiwan	---	100, 220	60
Thailand	---	220*, 380	50
Turkey	---	220, 380	50
United Arab Emirates	220, 240	220, 380, 415	50
Vietnam	---	120*, 127, 208, 220, 380	50
Yemen Arab Republic	---	220, 230, 400	50
Africa:	---	---	---
	---	---	---
Algeria	---	127, 220, 380	50
Angola	---	220, 380	50
Behin	---	220, 380	50
Cameroon	---	127*, 220, 230, 380, 400	50
Canary Islands	---	127, 220, 380	50
Cape Verde, Republic of	---	220, 380	50
Comoros	---	220, 380	50
Congo, Republic of	---	220, 380	50
Dahomey	---	220, 380	50
Duibouti, Republic of	---	220, 380	50
Ethiopia	---	220*, 380	50
Equatorial Guinea	---	220	50
French Somahland	220	220, 380	50
Egypt	---	220, 380	50
Gabon	---	127, 220, 280	50
Gambia	---	220, 380	50
Ghana	---	230, 400	50
Guinea	---	220, 380	50
Guinea-Bissau Cote d'Ivoire	220	220, 380	50
Kenya	---	240, 415	50
Liberia	---	120, 208, 240	60
Libya	---	127, 220, 230, 400	50
Madeira	220*, 440	220*, 380	50
Madagascar	---	220	50
Mauritania	---	220	50
Mauritius	---	230, 400	50
Morocco	---	127, 220, 380	50
Mozambique	---	220, 380	50
Namibia	---	220, 230, 380, 400	50

**Table 320-A-1. POWER SUPPLY TYPES IN GENERAL USAGE -**

Continued

<b>Territory</b>	<b>Volts, Direct Current (VDC)</b>	<b>Volts, Alternating Current (VAC)</b>	<b>Freq.(Hz)</b>
Nigeria	---	230, 412	50
Senegal	---	127, 220	50
Sierra Leone	---	230, 400	50
Somalia	230, 450	110, 220*, 230, 380, 440	50
South Africa	---	220*, 380	50
Sudan	---	240, 415	50
Tanzania	---	230, 400	50
Togo	---	127, 220, 380	50
Tunisia	---	127, 220, 380	50
Oceania:		---	---
American Samoa		120, 240, 480	60
Australia		240*, 250, 415, 440	50
Fiji		240, 415	50
Guam		110, 120, 208, 220	60
Hawaii		110, 120*, 208, 240	60
New Caledonia		220, 380	50
New Guinea		110, 220, 440	50
New Zealand		230*, 400	50
Papua New Guinea		240, 415	50
Society Islands		127, 220	60
Tonga		240, 415	50
Western Samoa		230, 400	50
<b>NOTES:</b>			
<p>1. An asterisk (*) indicates the predominate voltage and frequency where different kinds of supply exist. Where approximately equal quantities of alternating current and direct current are available, an asterisk follows each of the principal voltages. Voltages and frequencies are listed in order of preference.</p> <p>2. As general guidance, the 50-Hz power will have the following effect of 60-Hz shipboard equipment:</p> <p>a. Alternating current motors will run at approximately 83 percent normal speed.</p> <p>b. All alternating current equipment, such as motors, transformers, solenoids, and devices provided with magnetic circuits, will operate at higher temperatures.</p> <p>c. Some instruments, such as watt-hour meters, will be considerably in error.</p> <p>d. Devices sensitive to frequency variation to the extent of operating improperly, such as a gyrocompass and radar equipment, should preferably be deenergized.</p> <p>e. Synchro devices overheat excessively when operated longer than 1 hour. These devices and battle-announcing amplifiers should be deenergized except for emergency use.</p> <p>f. All 60-Hz electrical devices operating on 50 Hz should be checked regularly for excessive temperature rises. It may be desirable as a last resort to use lower 50-Hz voltage rather than the rated 60-Hz voltage to reduce temperature rises.</p>			





## APPENDIX B

### MIL-SPEC MOLDED CASE (AQB/NQB) CIRCUIT BREAKER OBSOLESCENCE AND RELATED INFORMATION (NON-NUCLEAR APPLICATIONS)

#### 320-B.1 SCOPE AND CONTACT INFORMATION.

The entire line of SPD AQB thermal magnetic circuit breakers and their NQB counterparts is obsolete. These circuit breakers are installed on many Navy ship classes. A particular obsolete SPD thermal magnetic circuit breaker may not be available for spares or to use as a replacement for a failed circuit breaker in the field. This appendix provides information to assist users when the need arises to replace obsolete SPD AQB/NQB thermal magnetic circuit breakers with alternative circuit breakers in non-nuclear applications.

- a. At present, there are only two AQB/NQB MIL-SPEC circuit breaker vendors, SPD Technologies and Eaton/Cutler-Hammer (formerly Westinghouse). SPD continues to manufacture electronic circuit breakers and their NQB counterparts. Eaton/Cutler-Hammer continues to manufacture a variety of AQB thermal magnetic, electronic, and NQB circuit breakers.
- b. Electronic circuit breakers are available as replacements for most AC applications (they cannot be used in DC applications) and in some instances may be the only replacement option. Eaton/Cutler-Hammer may also have a form, fit, and function thermal magnetic circuit breaker as a replacement option depending on the frame size. [Paragraphs 320-B.2](#) and [320-B.3](#) provide general and detailed information, respectively, on selected AQB/NQB circuit breaker frame sizes from both vendors.
- c. An electronic AQB circuit breaker has several more adjustable settings than a thermal magnetic AQB circuit breaker. [Paragraph 320-B.4](#) and [Tables 320-B-15](#) through [320-B-26](#) provide guidance on how to set a replacement electronic circuit breaker to ensure that, with regard to instantaneous protection and coordination, it is a functional equivalent for the thermal magnetic circuit breaker being replaced.
- d. To completely assess possible functional replacements for obsolete circuit breakers, users need to be aware of similarities and differences in attachments (auxiliary switches, shunt trips/shunt trip cut-off switch, undervoltage releases, motor operators) between SPD and Eaton/Cutler-Hammer (or Westinghouse) circuit breakers as well as similarities and differences in attachments between thermal magnetic and electronic circuit breakers made by the same vendor. [Paragraph 320-B.2.3](#), selected parts of [paragraph 320-B.3](#), and [Tables 320-B-2](#) through [320-B-7](#) provide attachment information.
- e. [Paragraph 320-B.5](#) is an obsolescence/replacement matrix comprised of tables that provide detailed replacement circuit breaker information for specific non-nuclear fleet applications with obsolete SPD AQB/NQB circuit breakers installed. The tables cover frame sizes from 100 amps (A101 design) through 1600 amps (A1600 design) and are organized according to Allowance Parts List (APL) numbers and platform applicability.
- f. Even though obsolete SPD AQB-A50/NQB-A50 and AQB-A100/AQB-LF100/NQB-A100 circuit breakers are discussed in [paragraphs 320-B.2](#) and [320-B.3](#), detailed replacement information is not included for these frame sizes in [paragraph 320-B.5](#). The obsolete SPD versions and the Eaton/Cutler-Hammer (or Westinghouse) replacements have been linked together at the NSN level in the stock system. If an obsolete SPD version of one of these circuit breakers is ordered by NSN, the user should receive a form, fit, function Eaton/Cutler-Hammer (or Westinghouse) replacement if there are no SPD spares.
- g. Any comments or questions concerning this appendix should be addressed to the following NSWCCD-SSES POCs:
  - George Rasich, Code 939, 215-897-1666, [george.rasich@navy.mil](mailto:george.rasich@navy.mil)
  - Glenn Palazzo, Code 939, 215-897-1170, [glenn.palazzo@navy.mil](mailto:glenn.palazzo@navy.mil)

- Tom McGinley, Code 939/LCE contractor support, 215-897-8948, thomas.p.mcginley.ctr@navy.mil

### 320-B.2 GENERAL AQB/NQB CIRCUIT BREAKER INFORMATION.

#### 320-B.2.1 SPD AQB/NQB CIRCUIT BREAKERS. Note the following:

- a. AQB circuit breakers have trip units (thermal magnetic or electronic) that trip the circuit breaker when specific overcurrent levels are reached or exceeded. Some designs also have a fuse unit that allows the circuit breaker to interrupt higher short-circuit currents than the same circuit breaker frame size without a fuse. Refer to [Table 320-B-1](#) for interruption ratings.
- b. SPD designates their electronic AQB circuit breakers listed below as the “Actron” line. Circuit breaker label plates include the “Actron” designation. All Actron AQB circuit breakers are available in “enhanced” and “standard” designs. Enhanced designs have communications capability but standard designs do not. Since obsolete SPD thermal magnetic designs do not have communications capability, all Actron AQB circuit breakers discussed in the rest of this appendix are standard design.
- c. An NQB circuit breaker has no trip unit and therefore does not trip on overcurrent. An NQB is used as a switch but it can have attachments to enable remote tripping, resetting and closing and to provide open/close indication.

#### 320-B-2.1.1 Obsolete SPD AQB Thermal Magnetic And NQB Counterparts. The following circuit breakers are obsolete:

AQB-A50 and NQB-A50	AQB-A100 and NQB-A100
AQB-LF100	AQB-A101 and NQB-A101
AQB-A250 and NQB-A250	AQB-LF226
AQB-LF250	AQB-A400 and NQB-A400
AQB-LF400	AQB-A800 and NQB-A800
AQB-A1600 and NQB-A1600	

#### 320-B-2.1.2 SPD AQB Electronic and NQB Counterparts. The following circuit breakers are currently available:

AQB-A102 (Types E1 and E2 with continuous current setting (CCS) dial)
AQB-A252 (with rating plug or CCS dial/frequency selector switch)
AQB-LF252 (with rating plug or CCS dial)
AQB-A402 (with rating plug or CCS dial/frequency selector switch)
AQB-LF402 (with rating plug or CCS dial)
AQB-A802 (with rating plug)
AQB-A1604 (with rating plug)
NQB versions of the A102, A252, A402, A802, and A1604

#### 320-B.2.2 EATON/CUTLER-HAMMER (FORMERLY WESTINGHOUSE) AQB/NQB CIRCUIT BREAKERS.

- a. AQB circuit breakers have trip units (thermal magnetic or electronic) that trip the circuit breaker when specific overcurrent levels are reached or exceeded. Some thermal magnetic designs also have a fuse unit that allows the circuit breaker to interrupt higher short-circuit currents than the same circuit breaker frame size without a fuse. With the exception of the AQB-A103 circuit breaker, the electronic AQB circuit breakers listed

below do not have fuse units. They are current limiting designs that can interrupt high short-circuit currents without the need for a fuse. Refer to [Table 320-B-1](#) for interruption ratings.

- b. An NQB circuit breaker has no trip unit and therefore does not trip on overcurrent. An NQB is used as a switch but it can have attachments to enable remote tripping, resetting and closing and to provide open/close indication.
- c. In 1994, Eaton/Cutler-Hammer took over production of AQB thermal magnetic, 400 amp AQB electronic, and NQB counterparts formerly manufactured by Westinghouse. Eaton/Cutler-Hammer uses the same part numbers as those for the Westinghouse versions. For example, a Westinghouse 3-pole AQB-A250 circuit breaker with a 125N trip element has part number 313C682G18. An Eaton/Cutler-Hammer 3-pole AQB-A250 circuit breaker with a 125N trip element has the same part number. Circuit breaker labels will designate “Westinghouse” or “Cutler-Hammer” depending on the manufacturing date.
- d. With the exception of the AQB-L400/AQB-LL400/NQB-LL400, the electronic circuit breakers and their NQB counterparts listed below have been manufactured only by Eaton/Cutler-Hammer since 1994. Therefore, “Cutler-Hammer” will appear on the label plate for these electronic circuit breakers but “Westinghouse” will not appear on the label plate.
- e. Eaton/Cutler-Hammer and Westinghouse designate their part numbers as style numbers and abbreviate the term with an “S.” In Navy logistics documentation, the “S” has sometimes been included with circuit breaker part numbers. For example, APL 140901259 applies to a Cutler-Hammer/Westinghouse AQB-LF250 circuit breaker. The circuit breaker part number is shown as S313C748G18 on the APL. The circuit breaker label plate will show the part number without the “S”.
- f. Based on the information above, this appendix will cite “Cutler-Hammer” from here on as the manufacturer designation for Eaton/Cutler-Hammer and Westinghouse thermal magnetic circuit breakers and Eaton/Cutler-Hammer electronic circuit breakers unless otherwise noted.

320-B-2.2.1 Cutler-Hammer AQB Thermal Magnetic and NQB Counterparts. The following circuit breakers are currently available:

AQB-A50 and NQB-A50	AQB-A51 and NQB-A51
AQB-A100 and NQB-A100	AQB-LF100
AQB-A101 and NQB-A101	AQB-A250 and NQB-A250
AQB-LF250	AQB-A1601 and NQB-A1601

320-B-2.2.2 Cutler-Hammer AQB Electronic and NQB Counterparts. The following circuit breakers are currently available:

AQB-A103RMS (with CCS dial)
AQB-A253 (with adjustable rating plug)
AQB-L253 (with adjustable rating plug)
AQB-L400 (with rating plug)
AQB-LL400 (with rating plug)
AQB-A1602 (with rating plug)
NQB-A803 and NQB versions of the A103, A253, LL400, and A1602

320-B.2.3 ATTACHMENTS FOR AQB/NQB CIRCUIT BREAKERS Auxiliary (aux) switches, shunt trips (along with shunt trip cut-off switch), undervoltage releases (UVRs), and motor operators are available attachments for most types of AQB/NQB circuit breakers. Attachments are optional; they are not included with a cir-

circuit breaker unless specified by the user. This section provides general information on these attachments. For detailed information on all attachments, refer to attachment sections in [paragraph 320-B.3](#) for each circuit breaker frame size and [Tables 320-B-2](#) through [320-B-7](#).

**320-B-2.3.1 Typical Auxiliary (Aux) Switches for Customer Use.** Aux switches for customer use are installed inside the circuit breaker and consist of an “a” contact, “b” contact, and a common. When the circuit breaker is tripped or open, the “a” contact is open and the “b” contact is closed. When the circuit breaker is closed, the “a” contact is closed and the “b” contact is open. Therefore, aux switches are used to indicate the status (open or closed) of the circuit breaker. Most applications have aux switches with 1a, 1b or 2a, 2b contacts and leads wired out of the circuit breaker to allow customers to make necessary external switchboard connections. An aux switch used as a shunt trip cut-off switch (refer to [paragraph 320-B.2.3.2](#)) is separate from the aux switches provided for customer use.

**320-B-2.3.2 Shunt Trips/Shunt Trip Cut-off Switch.** Shunt trips are solenoid devices that provide capability for remote tripping of a circuit breaker. Shunt trips are installed inside the circuit breaker and typically have leads wired out of the circuit breaker to allow customers to make necessary external switchboard connections. Shunt trips are not designed to be continuously energized; they are designed to be momentarily energized to trip a circuit breaker. To prevent shunt trip damage, an aux switch (separate from aux switches provided for customer use discussed in [paragraph 320-B.2.3.1](#)) is provided to act as a shunt trip cut-off switch. An “a” contact is connected in series with the shunt trip so that when the circuit breaker trips, the shunt trip will no longer be energized.

**320-B-2.3.3 Undervoltage Releases (UVRs).** UVRs are solenoid devices that trip a circuit breaker when the applied voltage falls below a predetermined value. UVRs are installed inside the circuit breaker and typically have leads wired out of the circuit breaker to allow customers to make necessary external switchboard connections. UVRs are designed to be continuously energized. A circuit breaker with a UVR cannot be closed after a tripping event unless the UVR is energized at a predetermined voltage.

**320-B-2.3.4 Motor Operators.** Motor operators allow remote resetting and closing of selected circuit breaker frame sizes/types. Motor operators are installed on the front face of the circuit breaker to enable manipulation of the circuit breaker handle. In most cases, Cutler-Hammer motor operators cover the entire front face of Cutler-Hammer circuit breakers. SPD motor operators do not cover the entire front face of SPD circuit breakers. Motor operator/switchboard interface connections vary and are discussed in detail in [paragraph 320-B.3](#).

### **320-B.3 DETAILED INFORMATION ON AQB/NQB CIRCUIT BREAKER FRAME SIZES AND ATTACHMENTS.**

This section provides users with detailed information for each SPD and Cutler-Hammer AQB/NQB circuit breaker frame size (50 amp through 1600 amp) and available attachments. Additional information can be found by consulting the specification sheets of MIL-DTL-17361, vendor catalogs, master plans, websites, or by contacting the vendors directly.

**320-B.3.1 50-AMP FRAME SIZE AQB/NQB CIRCUIT BREAKERS.** This frame size has been available from vendors only as an AQB thermal magnetic design along with an NQB version. There has never been an electronic AQB version.

**320-B.3.1.1 SPD AQB and NQB-A50.**

- a. The SPD AQB-A50 and NQB-A50 are obsolete. Although there is no new production, the stock system and other sources may still have assets.
- b. AQB version was available in separate 60Hz/500VAC, 400 Hz/500VAC, and 250 VDC ratings. Refer to [Table 320-B-1](#) for AC and DC interruption ratings.
- c. AQB version has no adjustable settings available. The circuit breaker was delivered with the trip unit type specified by the user.
- d. Attachments were not available for AQB and NQB versions.

#### 320-B.3.1.2 2 Cutler-Hammer AQB-A50/AQB-A51 and NQB Counterparts.

- a. Cutler-Hammer continues to manufacture the AQB-A50 and NQB-A50. AQB version is available in separate 60 Hz/500VAC and 400 Hz/500VAC ratings; there are no DC ratings. Refer to [Table 320-B-1](#) for AC interruption ratings.
- b. Cutler-Hammer continues to manufacture the AQB-A51 and NQB-A51. AQB version is available in 60 Hz/500VAC ratings; there are no DC or 400 Hz AC ratings. Refer to [Table 320-B-1](#) for 60 Hz AC interruption rating.
- c. The AQB-A50 has overcurrent protection in two poles and the AQB-A51 has overcurrent protection in all three poles.
- d. There are no adjustable settings available for either AQB design. Circuit breakers are delivered with the trip unit type specified by the user.
- e. Attachments are not available for AQB and NQB versions of either design.

#### 320-B.3.1.3 Circuit Breaker Form, Fit, and Function Replacement Considerations.

320-B.3.1.3.1 Replacing Obsolete SPD AQB-A50/NQB-A50 with Cutler-Hammer AQB-A50/NQB-A50. The Cutler-Hammer AQB-A50 is a form and fit replacement for the obsolete SPD AQB-A50. To make the Cutler-Hammer AQB-A50 a functional replacement for the obsolete SPD AQB-A50 in 60 Hz and 400 Hz AC applications only, the trip unit type must be the same. The Cutler-Hammer NQB-A50 is a form, fit, function replacement for the obsolete SPD NQB-A50.

320-B.3.1.3.2 Replacing Obsolete SPD AQB-A50/NQB-A50 with Cutler-Hammer AQB-A51/NQB-A51. Cutler-Hammer AQB-A51 is a form and fit replacement for the obsolete SPD AQB-A50. To make the Cutler-Hammer AQB-A51 a functional replacement for the obsolete SPD AQB-A50 in 60 Hz AC applications only, the trip unit type must be the same. The Cutler-Hammer NQB-A51 is a form, fit, function replacement for the obsolete SPD NQB-A50.

320-B.3.2 100-AMP FRAME SIZE CIRCUIT BREAKERS (AQB THERMAL MAGNETIC, AQB ELECTRONIC, AND NQB COUNTERPARTS).

320-B.3.2.1 AQB-A101 Thermal Magnetic, AQB-A102 and AQB-A103 Electronic, and NQB Counterparts.

320-B.3.2.1.1 SPD AQB-A101 Thermal Magnetic, AQB-A102 Electronic, and NQB Counterparts.

320-B.3.2.1.1.1 SPD AQB-A101 and NQB-A101.

- a. The SPD AQB-A101 and NQB-A101 are obsolete. Although there is no new production, the stock system or other sources may still have assets.
- b. AQB version was available in dual-ratings (60 Hz AC and 250 VDC) and separate 400 Hz AC ratings. For some 60 Hz AC applications, fuse units are used in conjunction with the AQB version to obtain a higher interruption rating. The fuse unit is a separate piece that mounts below the circuit breaker; it plugs into the mounting base/block but does not plug into the circuit breaker. Refer to [Table 320-B-1](#) for AC and DC interruption ratings.
- c. AQB version has three adjustable instantaneous pickup setting dials on the front of the circuit breaker (one on each pole). Each pickup dial has 5 settings: LO, 2, 3, 4, HI. Long time delay features are fixed as referred to in [Table 320-B-8](#). Short-time delay features are not available.
- d. AQB version was delivered with the trip unit type specified by the user.

320-B.3.2.1.1.2 SPD AQB-A102 and NQB-A102.

- a. SPD continues to manufacture the AQB-A102 and NQB-A102. The AQB-A102 is available in two designs: Type E1 and Type E2. The original Type E design is obsolete. Although there is no new production of the Type E, the stock system or other sources may still have assets.
- b. The label plate for the Type E2 states “E2”; the Type E1 label plate does not show type designation.
- c. Type E1 and Type E2 designs have dual 60 Hz and 400 Hz AC ratings; there are no DC ratings. For some 60 Hz AC applications, fuse units are used in conjunction with the Type E1 and Type E2 to obtain a higher interruption rating. The fuse unit is a separate piece that mounts below the circuit breaker; it plugs into the mounting base/block but does not plug into the circuit breaker. Refer to [Table 320-B-1](#) for AC interruption ratings.
- d. Type E1 and Type E2 designs use root-mean-square (rms) current sensing and have field adjustable settings for continuous current, instantaneous pickup, short-time delay pickup, and short-time delay time band. Long-time delay features are fixed on both designs as referred to in [Table 320-B-8](#).
- e. Several continuous current settings can be found on the CCS dial of Type E1 and Type E2 designs. However, there are notable differences between CCS dials on these designs: 1) Type E1 has 5 settings while Type E2 has 8 settings and, 2) Type E1 includes a 75-amp setting but does not include an 80-amp setting while Type E2 includes an 80-amp setting but does not include a 75-amp setting.
- f. Available adjustable settings on the AQB-A102 Type E1 and Type E2 designs are as follows:

Type E1	
CCS (amps):	15, 25, 50, 75, 100
Instantaneous pickup (multiply by 100 amps):	3, 4, 6, 8, 10, 12, 15, 20, 30, 40
Short-time delay pickup (multiply by CCS amps):	2, 3, 4, 6, 8, 10, 15

Short-time delay time band:	1 (0.025 - 0.055 seconds)
	2 (0.065 - 0.095 seconds)
	3 (0.105 - 0.135 seconds)
Type E2	
CCS (amps):	15, 20, 25, 40, 50, 60, 80, 100
Instantaneous pickup (multiply by 100 amps):	3, 4, 6, 8, 10, 12, 15, 20, 30, 40
Short-time delay pickup (multiply by CCS amps):	2, 3, 4, 6, 8, 10, 15
Short-time delay time band:	1 (0.025 - 0.055 seconds)
	2 (0.065 - 0.095 seconds)
	3 (0.105 - 0.135 seconds)

320-B.3.2.1.2 Cutler-Hammer AQB-A101 Thermal Magnetic, AQB-A103 Electronic, and NQB Counterparts.

320-B.3.2.1.2.1 Cutler-Hammer AQB-A101 and NQB-A101.

- a. Cutler-Hammer continues to manufacture the AQB-A101 and NQB-A101.
- b. AQB version is available in dual-ratings (60 Hz AC and 250 VDC) and separate 400 Hz AC ratings. For some 60 Hz AC applications, fuse units are used in conjunction with the AQB version to obtain a higher interruption rating. The fuse unit is a separate piece that mounts below the circuit breaker; it plugs into the mounting base/block but does not plug into the circuit breaker. Refer to [Table 320-B-1](#) for AC and DC interruption ratings.
- c. AQB version has three adjustable instantaneous pickup setting dials on the front of the circuit breaker (one on each pole). Each pickup dial has 5 settings but only “LO” and “HI” are labeled; the other three settings have “tick” marks but no label. Long time delay features are fixed as referred to in [Table 320-B-8](#). Short-time delay features are not available.
- d. AQB version is delivered with the trip unit type specified by the user.

320-B.3.2.1.2.2 Cutler-Hammer AQB-A103 and NQB-A103.

- a. The AQB-A103 has gone through two designs: AQB-A103 and AQB-A103RMS. Cutler-Hammer continues to manufacture the AQB-A103RMS and NQB-A103 but the AQB-A103 is obsolete. Although there is no new production of the AQB-A103, the stock system or other sources may still have assets.
- b. The part numbers did not change from the original AQB-A103 design to the AQB-A103RMS. The label plate states “AQB-A103” or “AQB-A103RMS” as applicable.
- c. Both AQB designs have dual 60 Hz and 400 Hz AC ratings; there are no DC ratings. For some 60 Hz AC applications, fuse units are used in conjunction with the AQB versions to obtain a higher interruption rating. The fuse unit is a separate piece that mounts below the circuit breaker; it plugs into the mounting base/block but does not plug into the circuit breaker. Refer to [Table 320-B-1](#) for AC interruption ratings.
- d. The AQB-A103 has peak current sensing and the AQB-A103RMS has rms current sensing. Both AQB designs have field adjustable settings for continuous current, instantaneous pickup, short-time delay pickup, and short-time delay time band. The AQB-A103 has an  $I^2 T$  short-time delay band response while the AQB-A103RMS offers both an  $I^2 T$  and flat short-time delay band response. Long-time delay features are fixed on both designs as referred to in [Table 320-B-8](#).

- e. There are two frame sizes for each AQB design. One frame size covers the CCS range of 10 amps to 25 amps and the other frame size covers the CCS range of 40 amps to 100 amps. Each frame size has a CCS dial with available settings in the applicable ranges.
- f. Available adjustable settings on the AQB-A103 designs are as follows:

AQB-A103	
CCS (25 amp frame rating):	10, 12.5, 15, 20, 25
CCS (100 amp frame rating):	40, 50, 60, 80, 100
Instantaneous pickup (multiply by 25 or 100 frame rating amps as applicable):	6, 8, 10, 12, 15, 20, 30, 40
Short-time delay pickup (multiply by CCS amps):	3, 5, 7, 10, 13
Short-time delay ( $I^2 T$ ) time band (see trip curve for time ranges):	MIN, 1, 2, 3, MAX
AQB-A103RMS	
CCS (25 amp frame rating):	10, 12.5, 15, 18.75, 20, 25
CCS (100 amp frame rating):	40, 50, 60, 75, 80, 100
Instantaneous pickup (multiply by 25 or 100 frame rating amps as applicable):	6, 8, 10, 12, 15, 20, 30, 40
Short-time delay pickup (multiply by CCS amps):	2, 3, 5, 7, 9, 10, 13, 14
Short-time delay ( $I^2 T$ response) time band (see trip curve for time ranges):	MIN, 1, 2, 3, MAX
Short-time delay (flat response) time band (see trip curve for time ranges):	100ms, 200ms, 300ms

### 320-B.3.2.1.3 Circuit Breaker Form, Fit, and Function Replacement Considerations.

#### 320-B.3.2.1.3.1 Replacing Obsolete SPD AQB-A101/NQB-A101 with Cutler-Hammer AQB-A101/NQB-A101.

- a. The Cutler-Hammer AQB-A101 is a form and fit replacement for the obsolete SPD AQB-A101.
- b. To make the Cutler-Hammer AQB-A101 a functional replacement for the obsolete SPD AQB-A101, consider the following:
- Attachments (if applicable) and the trip unit type must be the same. Refer to [paragraph 320-B.3.2.1.4](#) and [Table 320-B-2](#) for AQB attachment information.
  - The instantaneous pickup settings on all three poles of the replacement Cutler-Hammer AQB-A101 circuit breaker must be set identically to those of the obsolete SPD AQB-A101 circuit breaker. The LO and HI settings on the Cutler-Hammer AQB-A101 correspond to the LO and HI settings on the obsolete SPD AQB-A101; the three “tick” mark settings on the Cutler-Hammer AQB-A101 correspond to the 2, 3, 4 settings on the obsolete SPD AQB-A101. The fixed long-time delay features are the same for the Cutler-Hammer and SPD AQB-A101 as referred to in [Table 320-B-8](#).
- c. The Cutler-Hammer NQB-A101 is a form and fit replacement for the obsolete SPD NQB-A101. Attachments (if applicable) must be the same to make the Cutler-Hammer NQB-A101 functionally equivalent to the obsolete SPD NQB-A101. Refer to [paragraph 320-B.3.2.1.4](#) and [Table 320-B-2](#) for NQB attachment information.

#### 320-B.3.2.1.3.2 Replacing Obsolete SPD AQB-A101/NQB-A101 with SPD AQB-A102/NQB-A102.

- a. SPD AQB-A102 Type E1 and Type E2 designs are form and fit replacements for the obsolete SPD AQB-A101.
- b. The SPD AQB-A102 designs and NQB-A102 cannot be used in DC circuit breaker applications.
- c. To make the SPD AQB-A102 Type E1 and Type E2 designs a functional replacement for the obsolete SPD



AQB-A101 in 60 Hz and 400 Hz AC applications, consider the following:

- Attachments (if applicable) must be the same. Refer to [paragraph 320-B.3.2.1.4](#) and [Table 320-B-2](#) for AQB attachment information.
  - Adjustable settings on the electronic designs must be taken into consideration. Refer to [paragraph 320-B.4](#) and [Table 320-B-15](#) for guidance on how to set the SPD AQB-A102 designs to make them functional replacements for the obsolete SPD AQB-A101 with respect to CCS and overcurrent protection.
  - Refer to [Table 320-B-8](#) to note similarities/differences in fixed long-time delay features between obsolete SPD thermal magnetic and SPD replacement electronic designs .
- d. SPD NQB-A102 is a form and fit replacement for the obsolete SPD NQB-A101. Attachments (if applicable) must be the same to make the SPD NQB-A102 functionally equivalent to the obsolete SPD NQB-A101 in AC applications. Refer to [paragraph 320-B.3.2.1.4](#) and [Table 320-B-2](#) for NQB attachment information.

#### 320-B.3.2.1.3.3 Replacing Obsolete SPD AQB-A101/NQB-A101 with Cutler-Hammer AQB-A103/NQB-A103.

- a. The Cutler-Hammer AQB-A103 designs are form and fit replacements for the obsolete SPD AQB-A101.
- b. The Cutler-Hammer AQB-A103 designs and NQB-A103 cannot be used in DC circuit breaker applications.
- c. To make the Cutler-Hammer AQB-A103 designs a functional replacement for the obsolete SPD AQB-A101 in 60 Hz and 400 Hz AC applications, consider the following:
  - Attachments (if applicable) must be the same. Refer to [paragraph 320-B.3.2.1.4](#) and [Table 320-B-2](#) for AQB attachment information.
  - Adjustable settings on the electronic replacement designs must be taken into consideration. Refer to [paragraph 320-B.4](#) and [Tables 320-B-16](#) and [320-B-17](#) for guidance on how to set the Cutler-Hammer AQB-A103 designs to make them functional replacements for the obsolete SPD AQB-A101 with respect to CCS and overcurrent protection.
  - Refer to [Table 320-B-8](#) to note similarities/differences in fixed long-time delay features between obsolete SPD thermal magnetic and Cutler-Hammer electronic designs.
- d. Cutler-Hammer NQB-A103 is a form and fit replacement for the obsolete SPD NQB-A101. Attachments (if applicable) must be the same to make the Cutler-Hammer NQB-A103 functionally equivalent to the obsolete SPD NQB-A101 in AC applications. Refer to [paragraph 320-B.3.2.1.4](#) and [Table 320-B-2](#) for NQB attachment information.

320-B.3.2.1.4 Attachments for AQB-A101/AQB-A102/AQB-A103 and NQB Counterparts. Aux switches and shunt trips are available attachments for the AQB-A101/NQB-A101 as well as the electronic and NQB replacements discussed above. If a circuit breaker is ordered with a shunt trip, a shunt trip cut-off switch is also provided.

320-B.3.2.1.4.1 Typical Aux Switch Configurations for Customer Use. Aux switches for customer use are those intended for circuit breaker status indication; they are separate from the aux switch used as a shunt trip cut-off switch ([paragraph 320-B.3.2.1.4.2.1](#)). Refer to [Table 320-B-2](#) for information on typical aux switch configurations for customer use including number of leads wired out for each circuit breaker design.

#### 320-B.3.2.1.4.2 Shunt Trips.

- a. Refer to [Table 320-B-2](#) for shunt trip ratings and number of shunt trip leads wired out for each circuit breaker design.

- b. SPD AQB-A102 and NQB-A102 circuit breakers have shunt trips with two or three-leads wired out depending on the manufacturing date of the circuit breaker. SPD added the third lead to ensure that all shunt trip ratings operate properly. Only two leads are used for any rating. For circuit breakers supplied with a three-lead shunt trip, a label with wiring instructions is provided on the right side of the circuit breaker to ensure that the shunt trip is connected properly for the rating required in the application and to instruct the user how to handle the unused lead. Configurations are determined as follows:
- 2 shunt trip leads for circuit breakers manufactured before 11/04 and with a serial number of less than 642029.
  - 3 shunt trip leads for circuit breakers manufactured 11/04 and after and with a serial number of 642029 or greater.

#### 320-B.3.2.1.4.2.1 Shunt Trip Cut-off Switch.

320-B.3.2.1.4.2.1.1 SPD AQB-A101 and NQB-A101. For obsolete SPD AQB-A101 and NQB-A101 circuit breakers with shunt trips, an aux switch configuration is provided for dedicated use as a shunt trip cut-off switch. This aux switch configuration results in two leads (“a” contact and common) or three leads (“a” contact, “b” contact, and common) wired out of the circuit breaker. Only the “a” contact lead and common lead are required for the cut-off switch. If a third lead is present, it may be tied off or used for some other application.

320-B.3.2.1.4.2.1.2 Cutler-Hammer AQB-A101 and NQB-A101. For Cutler-Hammer AQB-A101 and NQB-A101 circuit breakers with shunt trips, an aux switch configuration is provided for dedicated use as a shunt trip cut-off switch. This aux switch configuration results in three leads (“a” contact, “b” contact, and common) wired out of the circuit breaker. Only the “a” contact lead and common lead are required for the cut-off switch. The third lead may be tied off or used for some other application.

320-B.3.2.1.4.2.1.3 SPD AQB-A102/NQB-A102 and Cutler-Hammer AQB-A103/NQB-A103. For SPD and Cutler-Hammer electronic circuit breakers and NQB counterparts with shunt trips, there are no aux switch leads wired out of the circuit breaker for use as a shunt trip cut-off switch. The shunt trip cut-off switch for these circuit breakers is wired internally.

320-B.3.2.1.4.2.1.4 Summary of Shunt Trip Cut-off Switch Wiring Configurations. When a shunt trip is provided, the number of shunt trip cut-off switch leads wired out for each circuit breaker design is as shown in [Table 320-B-2](#).

#### 320-B.3.2.2 AQB-A100/AQB-LF100 Thermal Magnetic and NQB-A100.

##### 320-B.3.2.2.1 SPD AQB-A100/AQB-LF100 and NQB-A100.

- a. SPD AQB-A100/AQB-LF100 and NQB-A100 are obsolete. Although there is no new production, the stock system and other sources may still have assets.
- b. AQB-A100 version was available in 500VAC (60 Hz and 400 Hz) and 250 VDC ratings. AQB-LF100 was available in 60 Hz/500VAC ratings only. Refer to [Table 320-B-1](#) for AC and DC interruption ratings.
- c. AQB versions have no adjustable settings available. AQB versions were delivered with the trip unit type specified by the user. Different trip unit types were available as separate piece parts.
- d. The AQB-LF100 fuse unit plugs directly into the circuit breaker.

e. Attachments were not available for AQB and NQB versions.

#### 320-B.3.2.2.2 Cutler-Hammer AQB-A100/AQB-LF100 and NQB-A100.

- a. Cutler-Hammer continues to manufacture the AQB-A100/AQB-LF100 and NQB-A100 for replacement only; they are not recommended for use in new construction.
- b. AQB-A100 version is available in 500VAC (60 Hz and 400 Hz) and 250 VDC ratings. AQB-LF100 is available in 60 Hz/500VAC ratings only. Refer to [Table 320-B-1](#) for AC and DC interruption ratings.
- c. AQB versions have no adjustable settings available. AQB version is delivered with the trip unit type specified by the user. Different trip unit types are available as separate piece parts.
- d. The AQB-LF100 fuse unit plugs directly into the circuit breaker.
- e. Attachments are not available for AQB and NQB versions.

#### 320-B.3.2.2.3 Circuit Breaker Form, Fit, and Function Replacement Considerations.

320-B.3.2.2.3.1 Replacing Obsolete SPD AQB-A100/NQB-A100 with Cutler-Hammer AQB-A100/NQB-A100. The Cutler-Hammer AQB-A100 is a form and fit replacement for the obsolete SPD AQB-A100. To make the Cutler-Hammer AQB-A100 a functional replacement for the obsolete SPD AQB-A100, the trip unit type must be the same. The Cutler-Hammer NQB-A100 is a form, fit, function replacement for the obsolete SPD NQB-A100.

320-B.3.2.2.3.2 Replacing Obsolete SPD AQB-LF100 with Cutler-Hammer AQB-LF100. The Cutler-Hammer AQB-LF100 is a form and fit replacement for the obsolete SPD AQB-LF100. To make the Cutler-Hammer AQB-LF100 a functional replacement for the obsolete SPD AQB-LF100, the trip unit type must be the same.

### 320-B.3.3 250-AMP FRAME SIZE CIRCUIT BREAKERS (AQB THERMAL MAGNETIC, AQB ELECTRONIC, AND NQB COUNTERPARTS).

#### 320-B.3.3.1 SPD.

##### 320-B.3.3.1.1 SPD AQB Thermal Magnetic and NQB Counterpart.

###### 320-3.3.1.1.1 SPD AQB-A250 and NQB-A250.

- a. The SPD AQB-A250 and NQB-A250 are obsolete. Although there is no new production, the stock system or other sources may still have assets.
- b. AQB version was available in dual-ratings (60 Hz AC and 250 VDC) and separate 400 Hz AC ratings. Refer to [Table 320-B-1](#) for AC and DC interruption ratings.
- c. AQB version has three adjustable instantaneous pickup setting dials under the front cover of the circuit breaker (one on each pole). Each pickup dial has 5 settings: LO, 2, 3, 4, HI. Long-time delay features are fixed as referred to in [Table 320-B-9](#). Short-time delay features are not available.
- d. AQB version was delivered with the trip unit type specified by the user. Different trip unit types were available as separate piece parts.

320-3.3.1.1.2 SPD AQB-LF250.

- a. The SPD AQB-LF250 is obsolete. Although there is no new production, the stock system or other sources may still have assets.
- b. The SPD AQB-LF250 was available in 60 Hz AC ratings only. Refer to [Table 320-B-1](#) for 60 Hz AC interruption rating.
- c. The SPD AQB-LF250 has three adjustable instantaneous pickup setting dials (one on each pole). The fuse unit, which plugs directly into the circuit breaker, and the front cover must be removed to access the dials. Each pickup dial has 5 settings: LO, 2, 3, 4, HI. Long-time delay features are fixed as referred to in [Table 320-B-10](#). Short-time delay features are not available.
- d. The circuit breaker was delivered with the trip unit type specified by the user. Different trip unit types were available as separate piece parts.

320-3.3.1.1.3 SPD AQB-LF226.

- a. The SPD AQB-LF226 is obsolete. Although there is no new production, the stock system or other sources may still have assets.
- b. Design is a modified AQB-LF250 rated at 225 amps.
- c. There are currently no form, fit, function replacements for the SPD AQB-LF226. If you have a need for a replacement, contact NSWCCD-SSES.

320-B.3.3.1.2 SPD AQB Electronic and NQB Counterpart.

320-3.3.1.2.1 SPD AQB-A252 and NQB-A252.

- a. SPD continues to manufacture the AQB-A252 and NQB-A252. The SPD AQB-A252 is currently available in two different designs: one design has rating plugs to establish CCS while the other design has an adjustable dial on the front of the circuit breaker to establish CCS. The label plates for both AQB designs state “AQB-A252” but they do have different SPD part numbers. To differentiate between designs, refer to information in this appendix or consult SPD catalogs and master plans for part number information.
- b. The AQB rating plug design is available in separate 60 Hz and 400 Hz AC ratings; the AQB CCS dial design has an adjustable frequency switch on the front of the circuit breaker to select 60 Hz or 400 Hz. There are no DC ratings for either design. Refer to [Table 320-B-1](#) for AC interruption ratings.
- c. Both AQB designs use rms current sensing and have field adjustable settings on the front of the circuit breaker for instantaneous pickup, short-time delay pickup, and short-time delay time band. Long-time delay features are fixed on both designs as referred to in [Table 320-B-9](#).
- d. Available rating plugs and adjustable settings for the SPD AQB-A252 designs are as follows:

AQB-A252 with rating plugs	
Rating plug (amps):	100, 125, 150, 160, 175, 225, 250
Instantaneous pickups for 60 Hz and 400 Hz applications (multiply by 250 amps):	3, 4, 6, 8, 10, 15, 20, 30
Additional instantaneous pickups for 60 Hz applications only (multiply by 250 amps):	40, 50

Short-time delay pickup (multiply by rating plug amps):	2, 3, 4, 6, 8, 10, 15
Short-time delay time band:	1 (0.025 - 0.055 seconds)
	2 (0.065 - 0.095 seconds)
	3 (0.105 - 0.135 seconds)
AQB-A252 with CCS dial	
CCS (amps):	100, 125, 150, 160, 175, 200, 225, 250
Instantaneous pickups for 60 Hz and 400 Hz applications (multiply by 250 amps):	3, 4, 6, 8, 10, 15, 20, 30
Additional instantaneous pickups for 60 Hz applications only (multiply by 250 amps):	40, 50
Short-time delay pickup (multiply by CCS amps):	2, 3, 4, 6, 8, 10, 15
Short-time delay time band:	1 (0.025 - 0.055 seconds)
	2 (0.065 - 0.095 seconds)
	3 (0.105 - 0.135 seconds)

### 320-3.3.1.2.2 SPD AQB-LF252.

- a. SPD continues to manufacture the AQB-LF252. The SPD AQB-LF252 is currently available in two different designs: one design has rating plugs to establish CCS while the other design has an adjustable dial on the front of the circuit breaker to establish CCS. The fuse unit plugs directly into the circuit breaker for both designs. The label plates for both designs state “AQB-LF252” but they do have different SPD part numbers. To differentiate between designs, refer to information in this appendix or consult SPD catalogs and master plans for part number information.
- b. Both designs are available in 60 Hz AC ratings only. Refer to [Table 320-B-1](#) for 60 Hz AC interruption rating.
- c. Both designs use rms current sensing and have field adjustable settings on the front of the circuit breaker for instantaneous pickup, short-time delay pickup, and short-time delay time band. For the rating plug design, the fuse unit must be removed to access the adjustable settings. Long-time delay features are fixed on both designs as referred to in [Table 320-B-10](#).
- d. Available rating plugs and adjustable settings for the SPD AQB-LF252 designs are as follows:

AQB-LF252 with rating plugs	
Rating plug (amps):	125, 150, 175, 225, 250
Instantaneous pickup (multiply by 250 amps):	3, 4, 6, 8, 10, 15, 20, 30, 40, 50
Short-time delay pickup (multiply by rating plug amps):	2, 3, 4, 6, 8, 10, 15
Short-time delay time band:	1 (0.025 - 0.055 seconds)
	2 (0.065 - 0.095 seconds)
	3 (0.105 - 0.135 seconds)
AQB-LF252 with CCS dial	
CCS (amps):	100, 125, 150, 160, 175, 200, 225, 250
Instantaneous pickup (multiply by 250 amps):	3, 4, 6, 8, 10, 15, 20, 30, 40, 50
Short-time delay pickup (multiply by CCS amps):	2, 3, 4, 6, 8, 10, 15
Short-time delay time band:	1 (0.025 - 0.055 seconds)
	2 (0.065 - 0.095 seconds)
	3 (0.105 - 0.135 seconds)

320-B.3.3.2 Cutler-Hammer.

320-B.3.3.2.1 Cutler-Hammer AQB Thermal Magnetic and NQB Counterpart.

320-3.3.2.1.1 Cutler-Hammer AQB-A250 and NQB-A250.

- a. Cutler-Hammer continues to manufacture the AQB-A250 and the NQB-A250.
- b. AQB version is available in dual-ratings (60 Hz AC and 250VDC) and separate 400 Hz AC ratings. Refer to [Table 320-B-1](#) for AC and DC interruption ratings.
- c. AQB version has three adjustable instantaneous pickup setting dials under the front cover of the circuit breaker (one on each pole). Each pickup dial has 5 settings but only the “LO” and “HI” are labeled; the other three settings have “tick” marks but no label. Long-time delay features are fixed as referred to in [Table 320-B-9](#). Short-time delay features are not available.
- d. AQB version is delivered with the trip unit type specified by the user. Different trip unit types are available as separate piece parts.

320-3.3.2.1.2 Cutler-Hammer AQB-LF250.

- a. Cutler-Hammer continues to manufacture the AQB-LF250.
- b. The Cutler-Hammer AQB-LF250 is available in 60 Hz ratings only. Refer to [Table 320-B-1](#) for 60 Hz AC interruption rating.
- c. The Cutler-Hammer AQB-LF250 has three adjustable instantaneous pickup setting dials (one on each pole). The fuse unit, which plugs directly into the circuit breaker, must be removed to access the dials. Each pickup dial has 5 settings but only the “LO” and “HI” are labeled; the other three settings have “tick” marks but no label. Long-time delay features are fixed as referred to in [Table 320-B-10](#). Short-time delay features are not available.
- d. The circuit breaker is delivered with the trip unit amp rating specified by the user. Different trip unit types are available as separate piece parts.

320-B.3.3.2.2 Cutler-Hammer AQB Electronic and NQB Counterpart.

320-3.3.2.2.1 Cutler-Hammer AQB-A253 and NQB-A253.

- a. Cutler-Hammer continues to manufacture the AQB-A253 and NQB-A253. The Cutler-Hammer AQB-A253 has two separate adjustable rating plugs available: one rating plug covers the CCS range of 100 amps to 160 amps and the other rating plug covers the CCS range of 175 amps to 250 amps.
- b. AQB version is available in dual 60 Hz and 400 Hz AC ratings; there are no DC ratings. Refer to [Table 320-B-1](#) for AC interruption ratings.
- c. AQB version uses rms current sensing and has field adjustable settings on the front of the circuit breaker for short-time delay pickup and short-time delay time band. A separate adjustable setting dial for instantaneous is not provided but the short-time delay band dial has an “INST” setting to emulate an instantaneous trip function. The AQB version also has a fixed electronic instantaneous override setting of 7,500 amps. Long-time delay features are fixed as referred to in [Table 320-B-9](#).

d. Available adjustable settings for the Cutler-Hammer AQB-A253 are as follows:

CCS (100-160 amp adjustable rating plug):	100, 125, 150, 160
CCS (175-250 amp adjustable rating plug):	175, 200, 225, 250
Short-time delay pickup (multiply by CCS amps):	2, 3, 4, 6, 8, 10, 12, 13
Short-time delay time band:	INST (0.025-0.050 seconds)
	100ms (0.058-0.083 seconds)
	200ms (0.158-0.183 seconds)
	300ms (0.258-0.283 seconds)

#### 320-3.3.2.2.2 Cutler-Hammer AQB-L253.

- a. Cutler-Hammer continues to manufacture the AQB-L253. There are two separate adjustable rating plugs for this design: one rating plug covers the CCS range of 100 amps to 160 amps and the other rating plug covers the CCS range of 175 amps to 250 amps.
- b. The Cutler-Hammer AQB-L253 is available in 60 Hz AC ratings only; there are no DC or 400 Hz AC ratings. Refer to [Table 320-B-1](#) for 60 Hz AC interruption rating.
- c. The Cutler-Hammer AQB-L253 uses rms current sensing and is current limiting; it does not have a fuse unit that plugs into the circuit breaker. It has field adjustable settings for short-time delay pickup and short-time delay time band. A separate adjustable setting dial for instantaneous is not provided but the short-time delay band dial has an “INST” setting to emulate an instantaneous trip function. There is also a fixed electronic instantaneous override setting of 7,500 amps. Long-time delay features are fixed as referred to in [Table 320-B-10](#).

d. Available adjustable settings for the Cutler-Hammer AQB-L253 are as follows:

CCS (100-160 amp adjustable rating plug):	100, 125, 150, 160
CCS (175-250 amp adjustable rating plug):	175, 200, 225, 250
Short-time delay pickup (multiply by CCS amps):	2, 3, 4, 6, 8, 10, 12, 13
Short-time delay time band:	INST (0.025-0.050 seconds)
	100ms (0.058-0.083 seconds)
	200ms (0.158-0.183 seconds)
	300ms (0.258-0.283 seconds)

#### 320-B.3.3.3 Circuit Breaker Form, Fit, and Function Replacement Considerations.

##### 320-B.3.3.3.1 Replacing Obsolete SPD AQB-A250/NQB-A250 with Cutler-Hammer AQB-A250/NQB-A250.

- a. The Cutler-Hammer AQB-A250 is a form and fit replacement for the obsolete SPD AQB-A250.
- b. To make the Cutler-Hammer AQB-A250 a functional replacement for the obsolete SPD AQB-A250, consider the following:
  - Attachments (if applicable) and trip unit type must be the same. Refer to [paragraph 320-B.3.3.4](#) and [Table 320-B-3](#) for AQB attachment information.
  - The instantaneous pickup settings on all three poles of the Cutler-Hammer circuit breaker must be set identically to those of the obsolete SPD circuit breaker. The LO and HI settings on the Cutler-Hammer AQB-A250 correspond to the LO and HI settings on the obsolete SPD AQB-A250; the three “tick” mark settings on the Cutler-Hammer AQB-A250 correspond to the 2, 3, 4 settings on the obsolete SPD AQB-A250. The fixed long-time delay features are the same for the Cutler-Hammer and SPD AQB-A250, as shown in [Table 320-B-9](#).

- c. The Cutler-Hammer NQB-A250 is a form and fit replacement for the obsolete SPD NQB-A250. Attachments (if applicable) must be the same to make the Cutler-Hammer NQB-A250 functionally equivalent to the obsolete SPD NQB-A250. Refer to [paragraph 320-B.3.3.4](#) and [Table 320-B-3](#) for NQB attachment information.

#### 320-B.3.3.3.2 Replacing Obsolete SPD AQB-A250/NQB-A250 with SPD AQB-A252/NQB-A252.

- a. The SPD AQB-A252 designs are form and fit replacements for the obsolete SPD AQB-A250.
- b. The SPD AQB-A252 designs and NQB-A252 cannot be used in DC circuit breaker applications.
- c. To make the SPD AQB-A252 designs a functional replacement for the obsolete SPD AQB-A250 in 60 Hz and 400 Hz applications, consider the following:
  - Attachments (if applicable) and trip unit type must be the same. Refer to [paragraph 320-B.3.3.4](#) and [Table 320-B-3](#) for AQB attachment information.
  - Adjustable settings on the electronic replacement designs must be taken into consideration. Refer to [paragraph 320-B.4](#) and [Table 320-B-18](#) for guidance on how to set the SPD AQB-A252 designs to make them functional replacements for the obsolete SPD AQB-A250 with respect to CCS and overcurrent protection.
  - Note similarities/differences in fixed long-time delay features between obsolete SPD thermal magnetic and SPD replacement electronic designs as referred to in [Table 320-B-9](#).
- d. The SPD NQB-A252 is a form and fit replacement for the obsolete SPD NQB-A250. Attachments (if applicable) must be the same to make the SPD NQB designs functionally equivalent in AC applications. Refer to [paragraph 320-B.3.3.4](#) and [Table 320-B-3](#) for NQB attachment information.

#### 320-B.3.3.3.3 Replacing Obsolete SPD AQB-A250/NQB-A250 with Cutler-Hammer AQB-A253/NQB-A253.

- a. The Cutler-Hammer AQB-A253 is a form and fit replacement for the obsolete SPD AQB-A250.
- b. The Cutler-Hammer AQB-A253 and NQB-A253 cannot be used in DC circuit breaker applications.
- c. To make the Cutler-Hammer AQB-A253 a functional replacement for the obsolete SPD AQB-A250 in 60 Hz and 400 Hz AC applications, consider the following:
  - Attachments (if applicable) must be the same. Refer to [paragraph 320-B.3.3.4](#) and [Table 320-B-3](#) for AQB attachment information.
  - Adjustable settings on the electronic replacement design must be taken into consideration. Refer to [paragraph 320-B.4](#) and [Table 320-B-19](#) for guidance on how to set the AQB-A253 to make it a functional replacement for the obsolete SPD AQB-A250 with respect to CCS and overcurrent protection.
  - Note similarities/differences in fixed long-time delay features between obsolete SPD thermal magnetic and Cutler-Hammer replacement electronic designs as referred to in [Table 320-B-9](#).
- d. The Cutler-Hammer NQB-A253 is a form and fit replacement for the obsolete SPD NQB-A250. Attachments (if applicable) must be the same to make the Cutler-Hammer NQB-A253 functionally equivalent to the obsolete SPD NQB-A250 in AC applications. Refer to [paragraph 320-B.3.3.4](#) and [Table 320-B-3](#) for NQB attachment information.

#### 320-B.3.3.3.4 Replacing Obsolete SPD AQB-LF250 with Cutler-Hammer AQB-LF250.

- a. The Cutler-Hammer AQB-LF250 is a form and fit replacement for the obsolete SPD AQB-LF250.
- b. To make the Cutler-Hammer AQB-LF250 a functional replacement for the obsolete SPD AQB-LF250, consider the following:



- Attachments (if applicable) and trip unit type must be the same. Refer to [paragraph 320-B.3.3.4](#) and [Table 320-B-3](#) for AQB attachment information.
- The instantaneous pickup settings on all three poles of the Cutler-Hammer circuit breaker must be set identically to those of the obsolete SPD circuit breaker. The LO and HI settings on the Cutler-Hammer AQB-LF250 correspond to the LO and HI settings on the obsolete SPD AQB-LF250; the three “tick” mark settings on the Cutler-Hammer AQB-LF250 correspond to the 2, 3, 4 settings on the obsolete SPD AQB-LF250. The fixed long-time delay features are the same for the Cutler-Hammer and SPD AQB-LF250, as shown in [Table 320-B-10](#).

#### 320-B.3.3.3.5 Replacing Obsolete SPD AQB-LF250 with SPD AQB-LF252.

- a. Both SPD AQB-LF252 designs are form and fit replacements for the obsolete SPD AQB-LF250.
- b. To make the SPD AQB-LF252 designs a functional replacement for the obsolete SPD AQB-LF250, consider the following:
  - Attachments (if applicable) must be the same. Refer to [paragraph 320-B.3.3.4](#) and [Table 320-B-3](#) for AQB attachment information.
  - Adjustable settings on the electronic replacement designs must be taken into consideration. Refer to [paragraph 320-B.4](#) and [Table 320-B-20](#) for guidance on how to set the SPD AQB-LF252 designs to make them functional replacements for the obsolete SPD AQB-LF250 with respect to CCS and overcurrent protection.
  - Refer to [Table 320-B-10](#) to note similarities/differences in fixed long-time delay features between obsolete SPD thermal magnetic and SPD replacement electronic designs.

#### 320-B.3.3.3.6 Replacing Obsolete SPD AQB-LF250 with Cutler-Hammer AQB-L253.

- a. The Cutler-Hammer AQB-L253 will fit into the obsolete SPD AQB-LF250 mounting base/block in the switchboard. However, the Cutler-Hammer AQB-L253 does not have a fuse while the AQB-LF250 does. When the switchboard cover is reinstalled after an L253-for-LF250 swap-out, there will be a gap between the bottom of the Cutler-Hammer AQB-L253 and the switchboard cover where the AQB-LF250 fuse unit used to be. Cutler-Hammer manufactures a close-out plate that covers this gap when installed. Close-out plate ordering information can be found in the 250 amp circuit breaker table entries of [paragraph 320-B.5](#) as applicable.
- b. To make the Cutler-Hammer AQB-L253 a functional replacement for the obsolete SPD AQB-LF250, consider the following:
  - Attachments (if applicable) must be the same. Refer to [paragraph 320-B.3.3.4](#) and [Table 320-B-3](#) for AQB attachment information.
  - Adjustable settings on the electronic replacement design must be taken into consideration. Refer to [paragraph 320-B.4](#) and [Table 320-B-21](#) for guidance on how to set the AQB-L253 to make it a functional replacement for the obsolete SPD AQB-LF250 with respect to CCS and overcurrent protection.
  - Refer to [Table 320-B-10](#) to note similarities/differences in fixed long-time delay features between obsolete SPD thermal magnetic and Cutler-Hammer replacement electronic designs.

320-B.3.3.4 Attachments for 250-Amp Frame Size AQB/NQB Circuit Breakers. Auxiliary switches, shunt trips, undervoltage releases, and motor operators are available attachments for the 250 amp frame circuit breakers discussed above. If a circuit breaker is ordered with a shunt trip, a shunt trip cut-off switch is also provided.

320-B.3.3.4.1 Typical Aux Switch Configurations for Customer Use. Aux switches for customer use are those intended for circuit breaker status indication; they are separate from the aux switch used as a shunt trip cut-off

switch (refer to [paragraph 320-B.3.3.4.2.1](#)). Refer to [Table 320-B-3](#) for information on typical aux switch configurations for customer use including number of leads wired out for each circuit breaker design.

320-B.3.3.4.2 Shunt Trips. Refer to [Table 320-B-3](#) for shunt trip ratings and number of shunt trip leads wired out for each circuit breaker design.

320-B.3.3.4.2.1 Shunt Trip Cut-off Switch.

320-B.3.3.4.2.1.1 SPD AQB-A250/AQB-LF250 and NQB-A250. For SPD AQB-A250/AQB-LF250 thermal magnetic and NQB-A250 circuit breakers with shunt trips, an aux switch configuration is provided for dedicated use as a shunt trip cut-off switch. This aux switch configuration results in two leads (“a” contact and common) or three leads (“a” contact, “b” contact, and common) exiting the circuit breaker. Only the “a” contact lead and common lead are required for the cut-off switch. If a third lead is present, it may be tied off or used for some other application.

320-B.3.3.4.2.1.2 Cutler-Hammer AQB-A250/AQB-LF250 and NQB-A250. For Cutler-Hammer AQB-A250/AQB-LF250 thermal magnetic circuit breakers and NQB-A250 with shunt trips, an aux switch configuration is provided for dedicated use as a shunt trip cut-off switch. This aux switch configuration results in three leads (“a” contact, “b” contact, and common) exiting the circuit breaker. Only the “a” contact lead and common lead are required for the cut-off switch. If a third lead is present, it may be tied off or used for some other application.

320-B.3.3.4.2.1.3 SPD AQB-A252/AQB-LF252/NQB-A252 and Cutler-Hammer AQB-A253/AQB-L253/NQB-A253. For SPD and Cutler-Hammer electronic circuit breakers and NQB counterparts with shunt trips, there are no aux switch leads wired out of the circuit breaker for use as a shunt trip cut-off switch. The shunt trip cut-off switch for these circuit breakers is wired internally.

320-B.3.3.4.2.1.4 Summary of Shunt Trip Cut-off Switch Wiring Configurations. When a shunt trip is provided, the number of shunt trip cut-off switch leads wired out for each circuit breaker design is as listed in [Table 320-B-3](#).

320-B.3.3.4.3 Undervoltage Releases. Refer to [Table 320-B-3](#) for undervoltage release ratings and number of leads wired out for each circuit breaker design.

320-B.3.3.4.4 Motor Operators.

320-B.3.3.4.4.1 SPD.

320-B.3.3.4.4.1.1 Availability, Ratings, and Ordering Information. Motor operators were only available for the AQB-A250 and NQB-A250 when SPD still manufactured these circuit breakers. Motor operators were not available for the AQB-LF250. Motor operators are currently available for AQB-A252, NQB-A252, and AQB-LF252. Refer to [Table 320-B-3](#) for rating details. Motor operators are not automatically provided with replacement circuit breakers since they are installed external to the circuit breaker. If a motor operator is required for replacement, it has to be ordered separately. Motor operator ordering information is provided in the 250 amp circuit breaker entries of [paragraph 320-B.5](#), as applicable.

320-B.3.3.4.4.1.2 Cannon Plug Interface Connector. All motor operators for obsolete SPD AQB-A250/NQB-A250 and current AQB-A252/NQB-A252/AQB-LF252 circuit breakers use a cannon plug connector for the interface connection between the motor operator and the switchboard wiring. Leads are not provided with the motor operator. In 1996, SPD changed the cannon plug design. Since SPD did not change part numbers to differentiate between the old and new design, users may encounter form, fit problems when replacing motor operators in the field (refer to [paragraph 320-B.3.3.4.4.3.2](#)).

#### 320-B.3.3.4.4.2 Cutler-Hammer.

320-B.3.3.4.4.2.1 Availability, Ratings, and Ordering Information. Separate motor operators are available for the AQB-A250/NQB-A250 and the AQB-A253/NQB-A253/AQB-L253. Refer to [Table 320-B-3](#) for rating details. Motor operators are not automatically provided with replacement circuit breakers since they are installed external to the circuit breaker. If a motor operator is required for replacement, it has to be ordered separately. Consult Cutler-Hammer catalogs for ordering information.

320-B.3.3.4.4.2.2 Interface Connections. The AQB-A250/NQB-A250 motor operators are not provided with leads. These motor operators have a terminal block inside the motor operator enclosure where the customer makes switchboard wiring connections. The AQB-A253/NQB-A253/AQB-L253 motor operator has 4 leads exiting the motor operator that can be used by the customer to make switchboard connections. Note that an externally mounted 1KVA step-down transformer is required when using motor operators in a 450VAC application. Refer to [Table 320-B-3](#).

#### 320-B.3.3.4.4.3 Motor Operator Form, Fit, and Function Replacement Considerations.

320-B.3.3.4.4.3.1 Non-interchangeability between Manufacturers. Motor operators are not interchangeable between manufacturers. An SPD motor operator for an SPD 250 amp frame size circuit breaker cannot be installed on a Cutler-Hammer 250 amp frame size circuit breaker and a Cutler-Hammer motor operator for a Cutler-Hammer 250 amp frame size circuit breaker cannot be installed on an SPD 250 amp frame size circuit breaker. Since there are also considerable differences between the interface connections used by each manufacturer, only SPD electronic circuit breakers are recommended as replacements in applications where a motor operator is installed on an obsolete SPD AQB thermal magnetic or NQB circuit breaker. The replacement circuit breaker information cited in the 250 amp circuit breaker entries of [paragraph 320-B.5](#) reflects this recommendation in applications where motor operators are installed.

320-B.3.3.4.4.3.2 Using SPD Motor Operator Installed on Obsolete SPD AQB-A250/NQB-A250 with SPD Replacement AQB-A252/NQB-A252. An SPD motor operator installed on an obsolete SPD AQB-A250 or NQB-A250 can be used on a replacement SPD AQB-A252 or NQB-A252. However, the 1996 design change to the SPD cannon plug connector can cause form and fit problems in the field when replacing a failed SPD motor operator made before 1996 with a replacement SPD motor operator made in 1996 or after. Refer to [Table 320-B-7](#) for details.

### 320-B.3.4 400-AMP FRAME SIZE CIRCUIT BREAKERS (AQB THERMAL MAGNETIC, AQB ELECTRONIC, AND NQB COUNTERPARTS).

#### 320-B.3.4.1 SPD.

##### 320-B.3.4.1.1 SPD AQB Thermal Magnetic and NQB Counterpart.

###### 320-B.3.4.1.1.1 SPD AQB-A400 and NQB-A400.

- a. The SPD AQB-A400 and NQB-A400 are obsolete. Although there is no new production, the stock system or other sources may still have assets.
- b. AQB version was available in dual-ratings (60 Hz AC and 250 VDC) and separate 400 Hz AC ratings. Refer to [Table 320-B-1](#) for AC and DC interruption ratings.
- c. AQB version has three adjustable instantaneous pickup setting dials under the front cover of the circuit breaker (one on each pole). Each pickup dial has 5 settings: LO, 2, 3, 4, HI. Long-time delay features are fixed as shown in [Table 320-B-11](#). Short-time delay features are not available.
- d. AQB version was delivered with the trip unit type specified by the user. The trip unit was not adjustable but trip units of different types were available as separate piece parts.

320-B.3.4.1.1.2 SPD AQB-LF400.

- a. The SPD AQB-LF400 is obsolete. Although there is no new production, the stock system or other sources may still have assets.
- b. The SPD AQB-LF400 was available in 60 Hz AC ratings only. Refer to [Table 320-B-1](#) for 60 Hz AC interruption rating.
- c. The SPD AQB-LF400 has three adjustable instantaneous pickup setting dials (one on each pole) that can be accessed from the front of the circuit breaker. Each pickup dial has 5 settings: LO, 2, 3, 4 and HI. Long-time delay features are fixed as shown in [Table 320-B-12](#). Short-time delay features are not available.
- d. The fuse unit plugs directly into the circuit breaker.
- e. The circuit breaker was delivered with the trip unit type specified by the user. The trip unit was not adjustable but trip units of different types were available as separate piece parts.

320-B.3.4.1.2 .SPD AQB Electronic and NQB Counterpart.

320-B.3.4.1.2.1 SPD AQB-A402 and NQB-A402.

- a. SPD continues to manufacture the AQB-A402 and NQB-A402. The SPD AQB-A402 is currently available in two different designs: one design has rating plugs to establish CCS while the other design has an adjustable dial on the front of the circuit breaker to establish CCS. The label plates for both AQB designs state “AQB-A402” but they do have different SPD part numbers. To differentiate between designs, refer to information in this appendix or consult SPD catalogs and master plans for part number information.
- b. The AQB rating plug design is available in separate 60 Hz and 400 Hz AC ratings; the AQB CCS dial design has an adjustable frequency switch on the front of the circuit breaker to select 60 Hz or 400 Hz. There are no DC ratings for either design. Refer to [Table 320-B-1](#) for AC interruption ratings.
- c. Both AQB designs use rms current sensing and have field adjustable settings on the front of the circuit breaker for instantaneous pickup, short-time delay pickup, and short-time delay time band. Long-time delay features are fixed on both designs as shown in [Table 320-B-11](#).
- d. Available rating plugs and adjustable settings for the SPD AQB-A402 designs are as follows:

AQB-A402 with rating plugs	
Rating plug (amps):	250, 300, 350, 400

Instantaneous pickups for 60 Hz and 400 Hz applications (multiply by 400 amps):	3, 4, 6, 8, 10, 12, 15, 20
Additional instantaneous pickups for 60 Hz applications only (multiply by 400 amps):	30, 40
Short-time delay pickup (multiply by rating plug amps):	2, 3, 4, 6, 8, 10, 15
Short-time delay time band:	1 (0.025 - 0.055 seconds)
	2 (0.065 - 0.095 seconds)
	3 (0.105 - 0.135 seconds)
AQB-A402 with CCS dial	
CCS (amps):	250, 300, 350, 400
Instantaneous pickups for 60 Hz and 400 Hz applications (multiply by 400 amps):	3, 4, 6, 8, 10, 12, 15, 20
Additional instantaneous pickups for 60 Hz applications only (multiply by 400 amps):	30, 40
Short-time delay pickup (multiply by CCS amps):	2, 3, 4, 6, 8, 10, 15
Short-time delay time band:	1 (0.025 - 0.055 seconds)
	2 (0.065 - 0.095 seconds)
	3 (0.105 - 0.135 seconds)

## 320-B.3.4.1.2.2 SPD AQB-LF402.

- a. SPD continues to manufacture the AQB-LF402. The SPD AQB-LF402 is currently available in two different designs: one design has rating plugs to establish CCS while the other design has an adjustable dial on the front of the circuit breaker to establish CCS. The fuse unit plugs directly into the circuit breaker for both designs. The label plates for both designs say “AQB-LF402” but they do have different SPD part numbers. To differentiate between designs, refer to information in this appendix or consult SPD catalogs and master plans for part number information.
- b. Both designs are available in 60 Hz AC ratings only. Refer to [Table 320-B-1](#) for 60 Hz AC interruption rating.
- c. Both designs use rms current sensing and have field adjustable settings on the front of the circuit breaker for instantaneous pickup, short-time delay pickup, and short-time delay time band. For the rating plug design, the fuse unit must be removed to access the adjustable settings. Long-time delay features are fixed on both designs as shown in [Table 320-B-12](#).
- d. Available rating plugs and adjustable settings for the SPD AQB-LF402 designs are as follows:

AQB-LF402 with rating plugs	
Rating plug (amps):	250, 300, 350, 400
Instantaneous pickup (multiply by 400 amps):	3, 4, 6, 8, 10, 12, 15, 20, 30, 40
Short-time delay pickup (multiply by rating plug amps):	2, 3, 4, 6, 8, 10, 15
Short-time delay time band:	1 (0.025 - 0.055 seconds)
	2 (0.065 - 0.095 seconds)
	3 (0.105 - 0.135 seconds)
AQB-LF402 with CCS dial	
CCS (amps):	250, 300, 350, 400
Instantaneous pickup (multiply by 400 amps):	3, 4, 6, 8, 10, 12, 15, 20, 30, 40
Short-time delay pickup (multiply by CCS amps):	2, 3, 4, 6, 8, 10, 15

Short-time delay time band:	1 (0.025 - 0.055 seconds)
	2 (0.065 - 0.095 seconds)
	3 (0.105 - 0.135 seconds)

#### 320-B.3.4.2 Cutler-Hammer.

320-B.3.4.2.1 Non-availability of Cutler-Hammer AQB Thermal Magnetic and NQB Counterpart. Cutler-Hammer does not manufacture a thermal magnetic 400 amp AQB frame size or an NQB version.

320-B.3.4.2.2 Cutler-Hammer AQB Electronic (AQB-LL400QS/AQB-L400QF/AQB-L400QM) and NQB-LL400.

- a. Cutler-Hammer continues to manufacture the AQB-LL400QS, AQB-L400QF, AQB-L400QM, and NQB-LL400. All AQB designs have rating plugs to establish CCS and all AQB designs are current limiting; they do not have fuse units that plug into the circuit breaker.
- b. All AQB designs are available in 60 Hz AC ratings; there are no DC or 400 Hz AC ratings. The Cutler-Hammer AQB-LL400QS and AQB-L400 designs are not functionally equivalent with respect to interruption rating. The AQB-L400 designs have an interruption rating of 150KA and the AQB-LL400 has an interruption rating of 100KA (refer to [Table 320-B-1](#)).
- c. All AQB designs have field adjustable settings for short-time delay pickup and short-time delay time band. A separate adjustable setting dial for instantaneous is not provided but the short-time delay band dial has a “MIN” setting to emulate an instantaneous trip function. The long-time delay features are fixed as shown in [Table 320-B-12](#).
- d. The Cutler-Hammer AQB-LL400QS, AQB-L400QF, and AQB-L400QM are not functionally equivalent with respect to short-time pickup ranges. The short-time pickup ranges are as follows:

AQB-LL400QS:	3,600 - 5,800 amps
AQB-L400QF:	650 - 1,500 amps
AQB-L400QM:	1,700 - 3,200 amps
- e. The Cutler-Hammer AQB-LL400QS and AQB-L400 designs have a fixed electronic instantaneous override. However, the three designs are not functionally equivalent with respect to fixed instantaneous override pickup settings. The instantaneous override pickup settings are as follows:

AQB-LL400QS:	6,300 amps
AQB-L400QF:	1,850 amps
AQB-L400QM:	3,280 amps
- f. The Cutler-Hammer AQB-LL400QS and AQB-L400 designs are identical with respect to form and fit.

#### 320-B.3.4.3 Circuit Breaker Form, Fit, and Function Replacement Considerations.

320-B.3.4.3.1 Replacing Obsolete SPD AQB-A400/NQB-A400 with SPD AQB-A402/NQB-A402.

- a. The SPD AQB-A402 designs are form and fit replacements for the obsolete SPD AQB-A400.
- b. The SPD AQB-A402 designs and NQB-A402 cannot be used in DC circuit breaker applications.
- c. To make the SPD AQB-A402 designs a functional replacement for the obsolete SPD AQB-A400 in 60 Hz and

400 Hz applications, consider the following:

- Attachments (if applicable) must be the same. Refer to [paragraph 320-B.3.4.4](#) and [Table 320-B-4](#) for AQB attachment information.
  - Adjustable settings on the electronic replacement designs must be taken into consideration. Refer to [paragraph 320-B.4](#) and [Table 320-B-22](#) for guidance on how to set the SPD AQB-A402 designs to make them functional replacements for the obsolete SPD AQB-A400 with respect to CCS and overcurrent protection.
  - Note similarities/differences in fixed long-time delay features between obsolete SPD thermal magnetic and SPD replacement electronic designs as shown in [Table 320-B-11](#).
- d. The SPD NQB-A402 is a form and fit replacement for the obsolete SPD NQB-A400. Attachments (if applicable) must be the same to make SPD NQB designs functionally equivalent in AC applications. Refer to [paragraph 320-B.3.4.4](#) and [Table 320-B-4](#) for NQB attachment information.

320-B.3.4.3.2 Replacing obsolete SPD AQB-A400/NQB-A400 with Cutler-Hammer AQB-LL400/AQB-L400/NQB-LL400. Because of significant dimensional differences, the Cutler-Hammer AQB-LL400QS and AQB-L400 designs cannot be used as form and fit replacements for the obsolete SPD AQB-A400. Likewise, the Cutler-Hammer NQB-LL400 cannot be used as a form and fit replacement for the obsolete SPD NQB-A400.

320-B.3.4.3.3 Replacing Obsolete SPD AQB-LF400 with SPD AQB-LF402

- a. The SPD AQB-LF402 designs are form and fit replacements for the obsolete SPD AQB-LF400.
- b. To make the SPD AQB-LF402 designs a functional replacement for the obsolete SPD AQB-LF400, consider the following:
- Attachments (if applicable) must be the same. Refer to [paragraph 320-B.3.4.4](#) and [Table 320-B-4](#) for AQB attachment information.
  - Adjustable settings on the electronic replacement designs must be taken into consideration. Refer to [paragraph 320-B.4](#) and [Table 320-B-23](#) for guidance on how to set the SPD AQB-LF402 designs to make them functional replacements for the obsolete SPD AQB-LF400 with respect to CCS and overcurrent protection.
  - Note similarities/differences in fixed long-time delay features between obsolete SPD thermal magnetic and SPD replacement electronic designs as shown in [Table 320-B-12](#).

320-B.3.4.3.4 Replacing Obsolete SPD AQB-LF400 with Cutler-Hammer AQB-LL400/AQB-L400.

- a. The Cutler-Hammer AQB-LL400 and AQB-L400 are smaller than the obsolete SPD AQB-LF400 and do not have a fuse unit like the SPD AQB-LF400. To make them form and fit replacements for the obsolete SPD AQB-LF400, an adapter kit supplied by Cutler-Hammer is required. The kit consists of modified line and load side interface connectors and a close-out plate. The connectors allow the Cutler-Hammer AQB-LL400 and AQB-L400 to fit into the SPD AQB-LF400 mounting base/block. The close-out plate covers the gap between the bottom of the Cutler-Hammer AQB-LL400/L400 and the switchboard cover where the SPD AQB-LF400 fuse unit used to be. Adapter kit ordering information can be found in the 400 amp circuit breaker entires listed in [paragraph 320-B.5](#) as applicable.
- b. To make the Cutler-Hammer AQB-LL400 or AQB-L400 a functional replacement for the obsolete SPD AQB-LF400, consider the following:
- Attachments (if applicable) must be the same. Refer to [paragraph 320-B.3.4.4](#) and [Table 320-B-4](#) for AQB attachment information.
  - Adjustable settings on the electronic replacement designs must be taken into consideration. Refer to [paragraph 320-B.4](#) and [Table 320-B-24](#) for guidance on how to set Cutler-Hammer AQB-LL400 and AQB-L400 designs to make them functional replacements for the obsolete SPD AQB-LF400 with respect to CCS

and overcurrent protection.

- Since the Cutler-Hammer AQB-LL400 and AQB-L400 designs do not have a separate, dedicated instantaneous setting switch, the short-time delay pickup settings along with the “MIN” short-time delay band setting are used to approximate the instantaneous function of the obsolete SPD AQB-LF400 as shown in [Table 320-B-24](#).

- For obsolete SPD AQB-LF400 applications with trip unit types 250T, 300T, 350T, and 400T listed in [Table 320-B-24](#) and the applicable 400 amp circuit breaker entries listed in [paragraph 320-B.5](#), both the AQB-L400QF and AQB-L400QM designs are shown as possible replacement options with specific application restrictions on when these designs can be used. Neither circuit breaker design by itself can provide short-time delay pickup settings to approximate the entire instantaneous range (1,380-2,280 amps) of the obsolete SPD AQB-LF400 with the T-suffix trip unit types cited above.

- For obsolete SPD AQB-LF400 applications with trip unit types 250TM, 300TM, 350TM, and 400TM listed in [Table 320-B-16](#) and the applicable 400 amp circuit breaker entries listed in [paragraph 320-B.5](#), both the AQB-LL400QS and AQB-L400QM designs are shown as possible replacement options with specific application restrictions on when these designs can be used. Neither circuit breaker design by itself can provide short-time delay pickup settings to approximate the entire instantaneous range (3,190-5,825 amps) of the obsolete SPD AQB-LF400 with the TM-suffix trip unit types cited above.

- Refer to [Table 320-B-12](#) to note similarities/differences in fixed long-time delay features between obsolete SPD thermal magnetic and Cutler-Hammer replacement electronic designs.

320-B.3.4.4 Attachments for 400-Amp Frame Size AQB/NQB Circuit Breakers. Auxiliary switches, shunt trips, undervoltage releases, and motor operators are available attachments for the 400 amp frame circuit breakers discussed above. If a circuit breaker is ordered with a shunt trip, a shunt trip cut-off switch is also provided.

320-B.3.4.4.1 Typical Aux Switch Configurations for Customer Use. Aux switches for customer use are those for circuit breaker status indication; they are separate from the aux switch used as a shunt trip cut-off switch (refer to [paragraph 320-B.3.4.4.2.1](#)). Refer to [Table 320-B-4](#) for information on typical aux switch configurations for customer use including number of leads wired out for each circuit breaker design.

320-B.3.4.4.2 Shunt Trips. Refer to [Table 320-B-4](#) for shunt trip ratings and number of shunt trip leads wired out for each circuit breaker design.

320-B.3.4.4.2.1 Shunt Trip Cut-off Switch.

320-B.3.4.4.2.1.1 SPD AQB-A400/AQB-LF400 and NQB-A400. For SPD AQB-A400/AQB-LF400 thermal magnetic and NQB-A400 circuit breakers with shunt trips, an aux switch configuration is provided for dedicated use as a shunt trip cut-off switch. This aux switch configuration results in two leads (“a” contact and common) or three leads (“a” contact, “b” contact, and common) wired out of the circuit breaker. Only the “a” contact lead and common lead are required for the cut-off switch. If a third lead is present, it may be tied off or used for some other application.

320-B.3.4.4.2.1.2 SPD AQB-A402/AQB-LF402/NQB-A402 and Cutler-Hammer AQB-LL400/AQB-L400/NQB-LL400. For SPD and Cutler-Hammer electronic circuit breakers and NQB counterparts with shunt trips, there are no aux switch leads wired out of the circuit breaker for use as a shunt trip cut-off switch. The shunt trip cut-off switch for these circuit breakers is wired internally.



320-B.3.4.4.2.1.3 Summary of Shunt Trip Cut-off Switch Wiring Configurations. When a shunt trip is provided, the number of shunt trip cut-off switch leads wired out for each circuit breaker design as shown in [Table 320-B-4](#).

320-B.3.4.4.3 Undervoltage Releases. Refer to [Table 320-B-4](#) for undervoltage release ratings and number of leads wired out for each circuit breaker design. Note that the Cutler-Hammer AQB-LL400 and AQB-L400 450VAC undervoltage release requires an externally mounted step-down transformer when used in a 115VAC application. Because of the transformer requirement, it is strongly recommended that Cutler-Hammer AQB-LL400/L400 circuit breakers not be used as replacements for obsolete SPD AQB-LF400 circuit breakers in applications where a 450VAC undervoltage release is required. The replacement circuit breaker information cited in the 400 amp circuit breaker entries of [paragraph 320-B.5](#) reflect this recommendation in applications where a 450VAC undervoltage release is installed.

320-B.3.4.4.4 Motor Operators.

320-B.3.4.4.4.1 SPD.

320-B.3.4.4.4.1.1 Availability, Ratings, and Ordering Information. Motor operators were available for the AQB-A400/NQB-A400/AQB-LF400 when SPD still manufactured these circuit breakers. Motor operators are currently available for the AQB-A402/NQB-A402/AQB-LF402. Refer to [Table 320-B-4](#) for rating details. Motor operators are not automatically provided with replacement circuit breakers since they are installed external to the circuit breaker. If a motor operator is required for replacement, it has to be ordered separately. Motor operator ordering information is provided in the 400 amp circuit breaker entries of [paragraph 320-B.5](#) where applicable.

320-B.3.4.4.4.1.2 Cannon Plug Interface Connector. All motor operators for obsolete SPD AQB-A400/NQB-A400/AQB-LF400 and current AQB-A402/NQB-A402/AQB-LF402 circuit breakers use a cannon plug connector for the interface connection between the motor operator and the switchboard wiring. Leads are not provided with the motor operator. In 1996, SPD changed the cannon plug design. Since SPD did not change part numbers to differentiate between the old and new design, users may encounter form, fit problems when replacing motor operators in the field (refer to [paragraph 320-B.3.4.4.3.2](#)).

320-B.3.4.4.4.2 Cutler-Hammer.

320-B.3.4.4.4.2.1 Availability, Ratings, and Ordering Information. A motor operator is available for the AQB-LL400/NQB-LL400/AQB-L400. Refer to [Table 320-B-4](#) for rating details. The motor operator is not automatically provided with replacement circuit breakers since it is installed external to the circuit breaker. If a motor operator is required for replacement, it has to be ordered separately. Consult Cutler-Hammer catalogs for ordering information.

320-B.3.4.4.4.2.2 Interface Connections. The motor operator is not provided with leads. The motor operator has a terminal block inside the motor operator enclosure where the customer makes switchboard wiring connections. Note that an externally mounted 1KVA step-down transformer is required when using the motor operator in a 450VAC application. Refer to [Table 320-B-4](#).

### 320-B.3.4.4.3 Motor Operator Form, Fit, and Function Replacement Considerations.

320-B.3.4.4.3.1 Non-interchangeability between Manufacturers. Motor operators are not interchangeable between manufacturers. An SPD motor operator for an SPD 400 amp frame size circuit breaker cannot be installed on a Cutler-Hammer 400 amp frame size circuit breaker and a Cutler-Hammer motor operator for a Cutler-Hammer 400 amp frame size circuit breaker cannot be installed on an SPD 400 amp frame size circuit breaker. Since there are also considerable differences between the interface connections used by each manufacturer, only SPD circuit breakers are recommended as replacements in applications where a motor operator is installed on an obsolete SPD AQB or NQB circuit breaker. The replacement circuit breaker info cited in the 400 amp circuit breaker entries of [paragraph 320-B.5](#) reflects this recommendation in applications where motor operators are installed.

320-B.3.4.4.3.2 Using SPD Motor Operator Installed on Obsolete SPD AQB-A400/NQB-A400/AQB-LF400 with SPD Replacement AQB-A402/NQB-A402/AQB-LF402. An SPD motor operator installed on an obsolete SPD AQB-A400/NQB-A400/AQB-LF400 can be used on a replacement SPD AQB-A402/NQB-A402/AQB-LF402. However, the 1996 design change to the SPD cannon plug connector can cause form and fit problems in the field when replacing a failed SPD motor operator made before 1996 with a replacement SPD motor operator made in 1996 or after. Refer to [Table 320-B-7](#) for details.

320-B.3.5 SPD 800-AMP FRAME SIZE CIRCUIT BREAKERS (AQB THERMAL MAGNETIC, AQB ELECTRONIC, AND NQB COUNTERPARTS). Details of SPD circuit breakers are discussed in this section. At present, Cutler-Hammer only manufactures an NQB-A803; this circuit breaker has no trip unit and it is not a form and fit replacement for the obsolete SPD NQB-A800.

#### 320-B.3.5.1 SPD AQB-A800 Thermal Magnetic and NQB-A800.

- a. The AQB-A800 and NQB-A800 are obsolete. Although there is no new production, the stock system or other sources may still have assets.
- b. AQB version was available in dual-ratings (60 Hz AC and 250 VDC) and 400 Hz AC ratings. Refer to [Table 320-B-1](#) for AC interruption ratings. SPD documentation does not clearly define the DC interruption rating.
- c. AQB version has three adjustable instantaneous pickup setting dials under the front cover of the circuit breaker (one on each pole). Each pickup dial has 5 settings: LO, 2, 3, 4 and HI. Long-time delay features are fixed as listed in [Table 320-B-13](#). Short-time delay features are not available.
- d. AQB version was delivered with the trip unit type specified by the user. The trip unit was not adjustable but trip units of different types were available as separate piece parts.

#### 320-B.3.5.2 SPD AQB-A802 Electronic and NQB-A802.

- a. SPD continues to manufacture the AQB-A802 and NQB-A802. The SPD AQB-A802 is available in separate 60 Hz and 400 Hz AC ratings; there are no DC ratings. Refer to [Table 320-B-1](#) for AC interruption ratings.
- b. AQB version has rating plugs to establish CCS. AQB versions use rms current sensing and have field adjustable settings on the front of the circuit breaker for instantaneous pickup, short-time delay pickup, and short-time delay time band. Long-time delay features are fixed as listed in [Table 320-B-13](#).
- c. Available rating plugs and adjustable settings for the SPD AQB-A802 design are as follows:

Rating plug (amps):	400, 500, 600, 700, 800
Instantaneous pickups for 60 Hz and 400 Hz applications (multiply by 800 amps):	3, 4, 5, 6, 8, 10
Additional instantaneous pickups for 60 Hz applications only (multiply by 800 amps):	12, 15, 20, 30
Short-time delay pickup (multiply by rating plug amps):	2, 3, 4, 6, 8, 10
Short-time delay time band:	1 (0.025 - 0.055 seconds)
	2 (0.065 - 0.095 seconds)
	3 (0.105 - 0.135 seconds)

### 320-B.3.5.3 Circuit Breaker Form, Fit, and Function Replacement Considerations (Replacing Obsolete SPD AQB-A800/NQB-A800 with SPD AQB-A802/NQB-A802).

- a. The SPD AQB-A802 is a form and fit replacement for the obsolete SPD AQB-A800.
- b. The SPD AQB-A802 and NQB-A802 cannot be used in DC applications.
- c. To make the SPD AQB-A802 a functional replacement for the obsolete SPD AQB-A800 in 60 Hz and 400 Hz AC applications, consider the following:
  - Attachments (if applicable) must be the same. Refer to [paragraph 320-B.3.5.4](#) and [Table 320-B-5](#) for AQB attachment information.
  - Adjustable settings on the electronic design must be taken into consideration. Refer to [paragraph 320-B.4](#) and [Table 320-B-25](#) for guidance on how to set the SPD AQB-A802 to make it a functional replacement for the obsolete SPD AQB-A800 with respect to CCS and overcurrent protection.
  - Refer to [Table 320-B-13](#) to note similarities/differences in fixed long-time delay features between obsolete SPD thermal magnetic and SPD replacement electronic designs.
- d. The SPD NQB-A802 is a form and fit replacement for the obsolete SPD NQB-A800. Attachments (if applicable) must be the same to make the SPD NQB designs functionally equivalent in AC applications. Refer to [paragraph 320-B.3.5.4](#) and [Table 320-B-5](#) for NQB attachment information.

320-B.3.5.4 Attachments for SPD 800-Amp Frame Size AQB/NQB Circuit Breakers. Auxiliary switches, shunt trips, undervoltage releases, and motor operators are available attachments for the 800 amp frame circuit breakers discussed above. If a circuit breaker is ordered with a shunt trip, a shunt trip cut-off switch is also provided.

320-B.3.5.4.1 Typical Aux Switch Configurations for Customer Use. Aux switches for customer use are those intended for circuit breaker status indication; they are separate from the aux switch used as a shunt trip cut-off switch (refer to [paragraph 320-B.3.5.4.2.1](#)). Refer to [Table 320-B-5](#) for information on typical aux switch configurations for customer use including number of leads wired out for each circuit breaker design.

320-B.3.5.4.2 Shunt Trips. Refer to [Table 320-B-5](#) for shunt trip ratings and number of shunt trip leads wired out for each circuit breaker design.

320-B.3.5.4.2.1 Shunt Trip Cut-off Switch.

320-B.3.5.4.2.1.1 SPD AQB-A800 and NQB-A800. For SPD AQB-A800 and NQB-A800 circuit breakers with shunt trips, an aux switch configuration is provided for dedicated use as a shunt trip cut-off switch. This aux switch configuration results in two leads (“a” contact and common) or three leads (“a” contact, “b” contact, and

common) wired out of the circuit breaker. Only the “a” contact lead and common lead are required for the cut-off switch. If a third lead is present, it may be tied off or used for some other application.

320-B.3.5.4.2.1.2 SPD AQB-A802 and NQB-A802. For SPD AQB-A802 and NQB-A802 circuit breakers with shunt trips, there are no aux switch leads wired out of the circuit breaker for use as a shunt trip cut-off switch. The shunt trip cut-off switch for these circuit breakers is wired internally.

320-B.3.5.4.2.1.3 Summary of Shunt Trip Cut-off Switch Wiring Configurations. When a shunt trip is provided, the number of shunt trip cut-off switch leads wired out for each circuit breaker design is listed in [Table 320-B-5](#).

320-B.3.5.4.3 Undervoltage Releases. Refer to [Table 320-B-5](#) for undervoltage release ratings and number of leads wired out for each circuit breaker design.

320-B.3.5.4.4 Motor Operators.

320-B.3.5.4.4.1 Availability, Ratings, and Ordering Information. A motor operator was available for the SPD AQB-A800 and NQB-A800 when SPD still manufactured these circuit breakers. A motor operator is currently available for the SPD AQB-A802 and NQB-A802. Refer to [Table 320-B-5](#) for rating details. Motor operators are not automatically provided with replacement circuit breakers since they are installed external to the circuit breaker. If a motor operator is required for replacement, it has to be ordered separately. Motor operator ordering information is provided in the 800 amp circuit breaker entries listed in [paragraph 320-B.5](#) where applicable.

320-B.3.5.4.4.2 Cannon Plug Interface Connector. Motor operators for obsolete SPD AQB-A800/NQB-A800 and current AQB-A802/NQB-A802 circuit breakers use a cannon plug connector for the interface connection between the motor operator and the switchboard wiring. Leads are not provided with the motor operator. In 1996, SPD changed the cannon plug design. Since SPD did not change part numbers to differentiate between the old and new design, users may encounter form, fit problems when replacing motor operators in the field (refer to [paragraph 320-B.3.5.4.4.3](#)).

320-B.3.5.4.4.3 Using SPD Motor Operator Installed on Obsolete SPD AQB-A800/NQB-A800 with SPD Replacement AQB-A802/NQB-A802. An SPD motor operator installed on an obsolete SPD AQB-A800/NQB-A800 can be used on a replacement SPD AQB-A802/NQB-A802. However, the 1996 design change to the SPD cannon plug connector can cause form and fit problems in the field when replacing a failed SPD motor operator made before 1996 with a replacement SPD motor operator made in 1996 or after. Refer to [Table 320-B-7](#) for details.

320-B.3.6 SPD 1600-AMP FRAME SIZE CIRCUIT BREAKERS (AQB THERMAL MAGNETIC, AQB ELECTRONIC, AND NQB COUNTERPARTS). Details of SPD circuit breakers are discussed in this section. Cutler-Hammer manufactures an AQB-A1601 thermal magnetic and AQB-A1602 electronic circuit breaker and their NQB counterparts. Since the AQB-A1601 and AQB-A1602 and NQB counterparts are not replacement options for any obsolete SPD circuit breaker, they are not discussed further in this section. For more details on these circuit breakers, refer to the applicable specification sheets of MIL-DTL-17361 or contact Cutler-Hammer.

320-B.3.6.1 SPD AQB-A1600 Thermal Magnetic and NQB-A1600.

- a. The AQB-A1600 and NQB-A1600 are obsolete. Although there is no new production, the stock system or other sources may still have assets.
- b. AQB version was available in 60 Hz AC ratings only. Refer to [Table 320-B-1](#) for 60 Hz AC interruption rating.
- c. AQB version has three adjustable instantaneous pickup setting dials that can be accessed from the front of the circuit breaker. Each pickup dial has 5 settings: LO, 2, 3, 4 and HI. Long-time delay features are fixed as listed in [Table 320-B-14](#). Short-time delay features are not available.
- d. AQB version was delivered with the trip unit type specified by the user. The trip unit was not adjustable but trip units of different types were available as separate piece parts.

#### 320-B.3.6.2 SPD AQB-A1604 Electronic and NQB-A1604.

- a. SPD continues to manufacture the AQB-A1604 and NQB-A1604. The SPD AQB-A1604 is available in 60 Hz AC ratings.
- b. AQB version has rating plugs to establish CCS. AQB version uses rms current sensing and has field adjustable settings on the front of the circuit breaker for instantaneous pickup, short-time delay pickup, and short-time delay time band. Long-time delay features are fixed as listed in [Table 320-B-14](#).
- c. Available rating plugs and adjustable settings for the SPD AQB-A1604 design are as follows:

Rating plug (amps):	600, 800, 1,000, 1,200, 1,400, 1,600
Instantaneous pickup (multiply by 1600 amps):	3, 4, 5, 6, 8, 10, 12, 15
Short-time delay pickup (multiply by rating plug amps):	2, 3, 4, 6, 8, 10
Short-time delay time band:	1 (0.025 - 0.055 seconds)
	2 (0.065 - 0.095 seconds)
	3 (0.105 - 0.135 seconds)

#### 320-B.3.6.3 Circuit Breaker Form, Fit, and Function Replacement Considerations (Replacing Obsolete SPD AQB-A1600/NQB-A1600 with SPD AQB-A1604/NQB-A1604).

- a. The SPD AQB-A1604 is a form and fit replacement for the obsolete SPD AQB-A1600.
- b. To make the SPD AQB-A1604 a functional replacement for the obsolete SPD AQB-A1600 in 60 Hz AC applications, consider the following:
  - Attachments (if applicable) must be the same. Refer to [paragraph 320-B.3.6.4](#) and [Tables 320-B-6](#) and [320-B-6A](#) for AQB attachment information.
  - Adjustable settings on the electronic AQB-A1604 must be taken into consideration. Refer to [paragraph 320-B.4](#) and [Table 320-B-26](#) for guidance on how to set the SPD AQB-A1604 to make it a functional replacement for the obsolete SPD AQB-A1600 with respect to CCS and overcurrent protection.
  - Refer to [Table 320-B-14](#) to note similarities/differences in fixed long-time delay features between SPD thermal magnetic and SPD replacement electronic designs.
- c. The SPD NQB-A1604 is a form and fit replacement for the obsolete SPD NQB-A1600. Attachments (if applicable) must be the same to make the SPD NQB designs functionally equivalent. Refer to [paragraph 320-B.3.6.4](#) and [Tables 320-B-6](#) and [320-B-6A](#) for NQB attachment information.

320-B.3.6.4 Attachments for SPD 1600-Amp Frame Size AQB/NQB Circuit Breakers. Aux switches, shunt trips, undervoltage releases, and motor operators are available attachments for the 1,600 amp frame circuit breakers discussed above. If a circuit breaker is ordered with a shunt trip, a shunt trip cut-off switch is also provided.

320-B.3.6.4.1 Typical Aux Switch Configurations for Customer Use, Shunt Trips, Shunt Trip Cut-off Switch, and Undervoltage Releases. All of these internal attachments on all obsolete AQB-A1600 and NQB-A1600 circuit breakers in the field are wired out through cannon plug connectors. Refer to [Table 320-B-6](#) for attachment ratings and [Tables 320-B-6A](#) for cannon plug configurations. All replacement AQB-A1604/NQB-A1604 circuit breakers cited in the 1,600 amp circuit breaker tables in [paragraph 320-B.5](#) have cannon plug connectors configured to match those of the obsolete AQB-A1600/NQB-A1600 as closely as possible. For SPD AQB-A1604 and NQB-A1604 circuit breakers with shunt trips, there are no aux switch leads wired out of through the cannon plug connector for use as a shunt trip cut-off switch. The shunt trip cut-off switch for these circuit breakers is wired internally.

320-B.3.6.4.2 Motor Operators.

320-B.3.6.4.2.1 Availability, Ratings, and Ordering Information. Motor operators were available for the AQB-A1600 and NQB-A1600 when SPD still manufactured these circuit breakers. Motor operators are currently available for the AQB-A1604 and NQB-A1604. Refer to [Table 320-B-6](#) for rating details. Motor operators are not automatically provided with replacement circuit breakers since they are installed external to the circuit breaker. If a motor operator is required for replacement, it has to be ordered separately. Motor operator ordering information is provided in the 1600 amp circuit breaker entries listed in [paragraph 320-B.5](#) where applicable.

320-B.3.6.4.2.2 Cannon Plug Interface Connector. Motor operators for obsolete SPD AQB-A1600/NQB-A1600 and current AQB-A1604/NQB-A1604 circuit breakers use a cannon plug connector for the interface connection between the motor operator and the switchboard wiring. Leads are not provided with the motor operator. In 1996, SPD changed the cannon plug design. Since SPD did not change part numbers to differentiate between the old and new design, users may encounter form, fit problems when replacing motor operators in the field (Refer to [paragraph 320-B.3.6.4.2.3](#)).

320-B.3.6.4.2.3 Using SPD Motor Operator Installed on Obsolete SPD AQB-A1600/NQB-A1600 with SPD Replacement AQB-A1604/NQB-A1604. An SPD motor operator installed on an obsolete SPD AQB-A1600/NQB-A1600 can be used on a replacement SPD AQB-A1604/NQB-A1604. However, the 1996 design change to the SPD cannon plug connector can cause form and fit problems in the field when replacing a failed SPD motor operator made before 1996 with a replacement SPD motor operator made in 1996 or after. Refer to [Table 320-B-7](#) for details.

**Table 320-B-1.** AQB Circuit Breaker Interruption Ratings

Circuit Breaker Type and Manufacturer	Interruption Ratings (Asymmetrical Amps)		
	60 Hz /500VAC	400 Hz /500VAC	250VDC
AQB-A50 (SPD)	5,000	Rating not published	2,500
AQB-A50 (Cutler-Hammer)	5,000	2,500	N/A
AQB-A51 (Cutler-Hammer)	5,000	N/A	N/A
AQB-A100 (SPD)	15,000	7,500	10,000
AQB-A100 (Cutler-Hammer)	15,000	7,500	10,000
AQB-LF100 (SPD)	100,000	N/A	N/A

**Table 320-B-1.** AQB Circuit Breaker Interruption Ratings - Continued

Circuit Breaker Type and Manufacturer	Interruption Ratings (Asymmetrical Amps)		
	60 Hz /500VAC	400 Hz /500VAC	250VDC
AQB-LF100 (Cutler-Hammer)	100,000	N/A	N/A
AQB-A101 without fuse (SPD)	15,000	10,000	10,000
AQB-A101 without fuse (Cutler-Hammer)	15,000	10,000	10,000
AQB-A102 without fuse (SPD)	15,000	10,000	N/A
AQB-A103 without fuse (Cutler-Hammer)	15,000	7,500	N/A
AQB-A101 with fuse (SPD)	100,000	N/A	N/A
AQB-A101 with fuse (Cutler-Hammer)	100,000	N/A	N/A
AQB-A102 with fuse (SPD)	100,000	N/A	N/A
AQB-A103 with fuse (Cutler-Hammer)	100,000	N/A	N/A
AQB-A250 (SPD)	20,000	10,000	15,000
AQB-A250 (Cutler-Hammer)	20,000	10,000	15,000
AQB-A252 (SPD)	20,000	10,000	N/A
AQB-A253 (Cutler-Hammer)	30,000	10,000	N/A
AQB-LF250 (SPD)	100,000	N/A	N/A
AQB-LF250 (Cutler-Hammer)	100,000	N/A	N/A
AQB-LF252 (SPD)	100,000	N/A	N/A
AQB-L253 (Cutler-Hammer)	100,000	N/A	N/A
AQB-A400 (SPD)	30,000	10,000	20,000
AQB-A402 (SPD)	30,000	10,000	N/A
AQB-LF400 (SPD)	100,000	N/A	N/A
AQB-LF402 (SPD)	100,000	N/A	N/A
AQB-LL400QS (Cutler-Hammer)	100,000	N/A	N/A
AQB-L400QF Cutler-Hammer)	150,000	N/A	N/A
AQB-L400QM (Cutler-Hammer)	150,000	N/A	N/A
AQB-A800 (SPD)	50,000	10,000	Rating not published
AQB-A802 (SPD)	50,000	10,000	N/A
AQB-A1600 (SPD)	75,000	N/A	N/A
AQB-A1604 (SPD)	75,000	N/A	N/A

**Table 320-B-2.** Attachment Information for AQB-A101/A102/A103 Circuit Breakers and NQB Counterparts

Type of circuit breaker and manufacturer	Shunt trip ratings	Number of shunt trip leads exiting circuit breaker	Auxiliary switch configurations (typical for customer use)	Number of auxiliary switch leads exiting circuit breaker	Number of shunt trip cut-off switch leads exiting circuit breaker
SPD AQB-A101 (obsolete thermal magnetic) NQB-A101 (obsolete)	3 different types: a. 115VAC, 60Hz b. 115VAC, 400Hz c. 120VDC	2 leads on all ratings	1a and 1b 2a and 2b	3 leads 6 leads	2 or 3 leads

**Table 320-B-2.** Attachment Information for AQB-A101/A102/A103 Circuit

## Breakers and NQB Counterparts - Continued

Type of circuit breaker and manufacturer	Shunt trip ratings	Number of shunt trip leads exiting circuit breaker	Auxiliary switch configurations (typical for customer use)	Number of auxiliary switch leads exiting circuit breaker	Number of shunt trip cut-off switch leads exiting circuit breaker
SPD AQB-A102 Type E1 (electronic) NQB-A102	One design rated for all the following: a. 115VAC, 60Hz b. 450VAC, 60Hz c. 115VAC, 400Hz d. 120VDC e. 250VDC	2 or 3 leads depending on circuit breaker manufacturing date (refer to <a href="#">paragraph 320-B.3.2.1.4.2</a> )	1a and 1b 2a and 2b	3 leads 6 leads	No leads (wired internally)
SPD AQB-A102 Type E2 (electronic) NQB-A102	One design rated for all the following: a. 115VAC, 60Hz b. 450VAC, 60Hz c. 115VAC, 400Hz d. 120VDC e. 250VDC	2 or 3 leads depending on circuit breaker manufacturing date (refer to <a href="#">paragraph 320-B.3.2.1.4.2</a> )	1a and 1b 2a and 2b	3 leads 6 leads	No leads (wired internally)
Cutler-Hammer AQB-A101 (thermal magnetic) NQB-A101	3 different types: a. 115VAC, 60Hz b. 115VAC, 400Hz c. 120VDC	2 leads on all ratings.	1a and 1b 2a and 2b	3 leads 6 leads	3 leads
Cutler-Hammer AQB-A103 and AQB-A103rms (both electronic) NQB-A103	115VAC, 60Hz	2 leads	1a and 1b 2a and 2b	3 leads 6 leads	No leads (wired internally)



**Table 320-B-3.** Attachment I information for SPD and Cutler-Hammer 250 Amp Frame Size Circuit Breakers (AQB and NQB)

Type of circuit breaker and manufacturer	Shunt trip ratings and number of leads exiting circuit breaker	Auxiliary switch configurations and number of leads exiting circuit breaker (typical for customer use)	Undervoltage release ratings and number of leads exiting circuit breaker	Motor operator ratings and number of leads or type of connector	Number of shunt trip cut-off switch leads exiting circuit breaker
SPD AQB-A250 (obsolete thermal magnetic) NQB-A250 (obsolete)	2 different types (both have 2 leads): a. 450VAC, 60Hz/ 120VDC b. 115VAC, 60Hz/ 28VDC	1a and 1b (3 leads) 2a and 2b (6 leads)	2 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz	2 different types: a. 115VAC, 60Hz/ 120VDC b. 115VAC, 400Hz (Refer to <a href="#">Table 320-B-7</a> for connector info)	2 or 3 leads
SPD AQB-A252 (electronic with rating plug or CCS dial ) NQB-A252	5 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz c. 250VDC d. 120VDC e. 28VDC	1a and 1b (3 leads) 2a and 2b (6 leads)	5 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz c. 250VDC d. 120VDC e. 33VDC	2 different types for standard circuit breaker design: a. 115VAC, 60Hz/ 120VDC b. 115VAC, 400Hz (Refer to <a href="#">Table 320-B-7</a> for connector info)	No leads (wired internally)
SPD AQB-LF250 (obsolete thermal magnetic)	2 different types (both have 2 leads): a. 450VAC, 60Hz/ 120VDC b. 115VAC, 60Hz/ 28VDC	1a and 1b (3 leads) 2a and 2b (6 leads)	2 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz	N/A	2 or 3 leads
SPD AQB-LF252 (electronic with rating plug or CCS dial)	5 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz c. 250VDC d. 120VDC e. 28VDC	1a and 1b (3 leads) 2a and 2b (6 leads)	5 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz c. 250VDC d. 120VDC e. 33VDC	115VAC, 60Hz/ 120VDC for standard circuit breaker design (Refer to <a href="#">Table 320-B-7</a> for connector info)	No leads (wired internally)
Cutler-Hammer AQB-A250 (thermal magnetic) NQB-A250	2 different types (both have 2 leads): a. 450VAC, 60Hz/ 120VDC b. 115VAC, 60Hz/ 28VDC	1a and 1b (3 leads) 2a and 2b (6 leads)	4 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz c. 250VDC d. 33VDC	115VAC, 60Hz rating with terminal block connector; requires an externally mounted step-down transformer for 450VAC applications	3 leads

**Table 320-B-3.** Attachment I information for SPD and Cutler-Hammer 250

## Amp Frame Size Circuit Breakers (AQB and NQB) - Continued

Type of circuit breaker and manufacturer	Shunt trip ratings and number of leads exiting circuit breaker	Auxiliary switch configurations and number of leads exiting circuit breaker (typical for customer use)	Undervoltage release ratings and number of leads exiting circuit breaker	Motor operator ratings and number of leads or type of connector	Number of shunt trip cut-off switch leads exiting circuit breaker
Cutler-Hammer AQB-A253 (electronic) NQB-A253	5 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz c. 250VDC d. 120VDC e. 28VDC	1a and 1b (3 leads) 2a and 2b (6 leads)	115VAC, 60Hz (2 leads)	120VAC (60Hz and 400Hz)/ 120VDC rating with 4 leads; requires an externally mounted step-down transformer for 450VAC applications	No leads (wired internally)
Cutler-Hammer AQB-LF250 (thermal magnetic)	2 different types (both have 2 leads): a. 450VAC, 60Hz/ 120VDC b. 115VAC, 60Hz/ 28VDC	1a and 1b (3 leads) 2a and 2b (6 leads)	4 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz c. 250VDC d. 33VDC	N/A	3 leads
Cutler-Hammer AQB-L253 (electronic)	5 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz c. 250VDC d. 120VDC e. 28VDC	1a and 1b (3 leads) 2a and 2b (6 leads)	115VAC, 60Hz (2 leads)	120VAC (60Hz and 400Hz)/ 120VDC rating with 4 leads; requires an externally mounted step-down transformer for 450VAC applications	No leads (wired internally)

**Table 320-B-4.** Attachment Information for SPD and Cutler-Hammer 400 Amp Frame Size Circuit Breakers (AQB and NQB)

Type of circuit breaker and manufacturer	Shunt trip ratings and number of leads exiting circuit breaker	Auxiliary switch configurations and number of leads exiting circuit breaker (typical for customer use)	Undervoltage release ratings and number of leads exiting circuit breaker	Motor operator ratings and number of leads or type of connector	Number of shunt trip cut-off switch leads exiting circuit breaker
SPD AQB-A400 (obsolete thermal magnetic) NQB-A400 (obsolete)	2 different types (both have 2 leads): a. 450VAC, 60Hz/ 120VDC b. 115VAC, 60Hz/ 28VDC	1a and 1b (3 leads) 2a and 2b (6 leads)	2 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz	2 different types: a. 115VAC, 60Hz/ 120VDC b. 115VAC, 400Hz (Refer to <a href="#">Table 320-B-7</a> for connector info)	2 or 3 leads
SPD AQB-A402 (electronic with rating plug or CCS dial) NQB-A402	5 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz c. 250VDC d. 120VDC e. 28VDC	1a and 1b (3 leads) 2a and 2b (6 leads)	5 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz c. 250VDC d. 120VDC e. 33VDC	2 different types: a. 115VAC, 60Hz/ 120VDC b. 115VAC, 400Hz (Refer to <a href="#">Table 320-B-7</a> for connector info)	No leads (wired internally)
SPD AQB-LF400 (obsolete thermal magnetic)	2 different types (both have 2 leads): a. 450VAC, 60Hz/ 120VDC b. 115VAC, 60Hz/ 28VDC	1a and 1b (3 leads) 2a and 2b (6 leads)	2 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz	2 different types: a. 115VAC, 60 Hz/ 120VDC b. 115VAC, 400Hz (Refer to <a href="#">Table 320-B-7</a> for connector info)	2 or 3 leads
SPD AQB-LF402 (electronic with rating plug or CCS dial)	5 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz c. 250VDC d. 120VDC e. 28VDC	1a and 1b (3 leads) 2a and 2b (6 leads)	5 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz c. 250VDC d. 120VDC e. 33VDC	2 different types: a. 115VAC, 60 Hz/ 120VDC b. 115VAC, 400Hz (Refer to <a href="#">Table 320-B-7</a> for connector info)	No leads (wired internally)
Cutler-Hammer AQB-LL400 and AQB-L400 (electronic with rating plug) NQB-LL400	2 different types (both have 2 leads): a. 450VAC b. 115VAC/ 28VDC to 120VDC	1a and 1b (3 leads) 2a and 2b (6 leads)	4 different types (2 leads for each type): a. 450VAC, 60Hz with externally mounted step-down transformer b. 115VAC, 60Hz c. 250VDC d. 120VDC	115VAC, 60Hz rating with terminal block connector; requires an externally mounted step-down transformer for 450VAC applications	No leads (wired internally)

**Table 320-B-5.** Attachment Information for SPD 800 Amp Frame Size Circuit Breakers (AQB and NQB)

Type of circuit breaker and manufacturer	Shunt trip ratings and number of leads exiting circuit breaker	Auxiliary switch configurations and number of leads exiting circuit breaker (typical)	Undervoltage release ratings and number of leads exiting circuit breaker	Motor operator ratings and number of leads or type of connector	Number of shunt trip cut-off switch leads exiting circuit breaker
SPD AQB-A800 (obsolete thermal magnetic) NQB-A800 (obsolete)	3 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz c. 120VDC	1a and 1b (3 leads) 2a and 2b (6 leads)	450VAC, 60Hz (2 leads)	115VAC, 60 Hz/ 120VDC dual-rated (Refer to <a href="#">Table 320-B-7</a> for connector info)	Refer to <a href="#">paragraph 320-B.3.5.4</a>
SPD AQB-A802 (electronic with rating plug) NQB-A802	5 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz c. 250VDC d. 120VDC e. 28VDC	1a and 1b (3 leads) 2a and 2b (6 leads)	5 different types (2 leads for each type): a. 450VAC, 60Hz b. 115VAC, 60Hz c. 250VDC d. 120VDC e. 33VDC	115VAC, 60 Hz/ 120VDC dual-rated (Refer to <a href="#">Table 320-B-7</a> for connector info)	No leads (wired internally)

**Table 320-B-6.** Attachment Information for SPD 1600 Amp Frame Size Circuit Breakers (AQB and NQB)

Type of circuit breaker and manufacturer	Shunt trip ratings	Auxiliary switch configurations	Undervoltage release ratings	Motor operator ratings	Shunt trip cut-off switch
SPD AQB-A1600 (obsolete thermal magnetic) NQB-A1600 (obsolete)	4 different types: a. 450VAC, 60Hz b. 115VAC, 60Hz c. 250VDC d. 120VDC (Refer to <a href="#">Table 320-B-6A</a> for connector info)	1a and 1b 2a and 2b (Refer to <a href="#">Table 320-B-6A</a> for connector info)	4 different types: a. 450VAC, 60Hz b. 115VAC, 60Hz c. 250VDC d. 120VDC (Refer to <a href="#">Table 320-B-6A</a> for connector info)	2 different types: a. 450VAC, 60Hz b. 115VAC, 60 Hz/120VDC (Refer to <a href="#">Table 320-B-7</a> for connector info)	Refer to <a href="#">Table 320-B-6A</a> for connector info
SPD AQB-A1604 (electronic with rating plug) NQB-A1604	5 different types: a. 450VAC, 60 Hz b. 115VAC, 60 Hz c. 250VDC d. 120VDC e. 28VDC (Refer to <a href="#">Table 320-B-6A</a> for connector info)	1a and 1b 2a and 2b (Refer to <a href="#">Table 320-B-6A</a> for connector info)	5 different types a. 450VAC, 60 Hz b. 115VAC, 60 Hz c. 250VDC d. 120VDC e. 33VDC (Refer to <a href="#">Table 320-B-6A</a> for connector info)	2 different types a. 450VAC, 60Hz b. 115VAC, 60 Hz/120VDC (Refer to <a href="#">Table 320-B-7</a> for connector info)	Refer to <a href="#">Table 320-B-6A</a> for connector info

**Table 320-B-6A.** Attachment Combinations (not including Motor Operator) and Corresponding Cannon Plug Connector Configurations for SPD 1,600 Amp Frame Size Circuit Breakers (AQB and NQB)

Attachment combinations for AQB-A1600/NQB-A1600 and replacement AQB-A1604/ NQB-A1604	Cannon plug connector configurations AQB-A1600/NQB-A1600	Cannon plug connector configurations AQB-A1604/NQB-A1604
1a, 1b aux switch for customer use	1 cannon plug connector with 8 pins: - 1a, 1b aux switch wired to pins A through D	1 cannon plug connector with 8 pins: - 1a, 1b aux switch wired to pins A through D
2a, 2b aux switch for customer use	1 cannon plug connector with 8 pins: - 1a, 1b aux switch for customer use wired to pins A through D - 1a, 1b aux switch for customer use wired to pins E through H	1 cannon plug connector with 8 pins: - 1a, 1b aux switch for customer use wired to pins A through D - 1a, 1b aux switch for customer use wired to pins E through H
Shunt trip and shunt trip cut-off switch	2 cannon plug connectors: - One 3-pin cannon plug has shunt trip wired to pins A and B - One 8-pin cannon plug has the shunt trip cut-off switch wired to pins E through H	1 cannon plug connector: - One 3-pin cannon plug has shunt trip wired to pins A and B (Note that shunt trip cutoff switch is wired internal to the circuit breaker; it is not wired out to the cannon plug)
UVR	1 cannon plug connector with 3 pins: - UVR wired to pins A and B	1 cannon plug connector with 3 pins: - UVR wired to pins A and B
1a, 1b aux switch for customer use, shunt trip, and shunt trip cut-off switch	2 cannon plug connectors: - One 8-pin cannon plug has 1a, 1b aux switch for customer use wired to pins A through D and the shunt trip cut-off switch wired to pins E through H - One 3-pin cannon plug has the shunt trip wired to pins A and B	2 cannon plug connectors: - One 8-pin cannon plug has 1a, 1b aux switch for customer use wired to pins A through D (Note that shunt trip cutoff switch is wired internal to the circuit breaker; it is not wired out to the cannon plug) - One 3-pin cannon plug has the shunt trip wired to pins A and B
1a, 1b aux switch for customer use and UVR	2 cannon plug connectors: - One 8-pin cannon plug has 1a, 1b aux switch for customer use wired to pins A through D - One 3-pin cannon plug has the UVR wired to pins A and B	2 cannon plug connectors: - One 8-pin cannon plug has 1a, 1b aux switch for customer use wired to pins A through D - One 3-pin cannon plug has the UVR wired to pins A and B
2a, 2b aux switch for customer use and UVR	2 cannon plug connectors: - One 8-pin cannon plug has a 1a, 1b aux switch for customer use wired to pins A through D and another 1a, 1b aux switch for customer use wired to pins E through H - One 3-pin cannon plug has the UVR wired to pins A and B	2 cannon plug connectors: - One 8-pin cannon plug has a 1a, 1b aux switch for customer use wired to pins A through D and another 1a, 1b aux switch for customer use wired to pins E through H - One 3-pin cannon plug has the UVR wired to pins A and B

**Table 320-B-7. SPD Obsolete and Actron AQB/NQB Circuit Breaker Cannon Plug Connector Configurations for Motor Operators and Installation Guidelines for Motor Operator Field Change-Out**

**CANNON PLUG CONNECTOR CONFIGURATIONS FOR SPD AQB/NQB CIRCUIT BREAKER MOTOR OPERATORS**

All SPD motor operators for obsolete AQB/NQB and Actron AQB/NQB circuit breakers use a cannon plug connector design as the interface connection between the motor operator and switchboard wiring. Leads are not provided with the motor operator. The cannon plug interface connection is made up of two pieces: a male piece permanently installed on top of the motor operator and a female piece that comes in a separate parts bag with the motor operator. The customer connects wiring from the switchboard to one end of the female connector. The other end of the female connector is then mated with the male connector on top of the motor operator. In 1996, SPD changed the cannon plug design for motor operators across all obsolete and Actron AQB circuit breaker frame sizes. Since SPD did not change part numbers to differentiate between the old and new design, users may encounter form, fit problems in the field when replacing a failed SPD motor operator made before 1996 with a replacement SPD motor operator made in 1996 or after. In such a scenario, the existing switchboard wiring connection with the original female cannon plug connector will not fit into the male cannon plug connector on top of the replacement motor operator.

**INSTALLATION GUIDELINES FOR SPD MOTOR OPERATOR FIELD CHANGE-OUT**

The following procedure is recommended when replacing SPD motor operators in the field. Switchboard and circuit breaker should be tagged-out in accordance with tag-out users manual and other official guidance before performing motor operator change-out:

- 1). Disconnect female cannon connector/switchboard wiring at interface with male connector on top of the original motor operator.
- 2). Determine if original female cannon connector fits into the male cannon plug connector on top of the replacement motor operator. If it fits, install replacement motor operator on circuit breaker, ensure proper connection between female connector/switchboard wiring and male connector on motor operator, and perform testing to verify that the motor operator functions properly when switchboard is re-energized. If it does not fit, go to step 3.
- 3). Find the female cannon connector in the parts bag supplied with the replacement motor operator and verify that it properly mates with the male connector on top of the replacement motor operator.
- 4). Remove the original female cannon plug by cutting the switchboard wiring connected to it. Ensure that there is sufficient wire length for reconnection to the replacement female connector. If not, switchboard wiring will have to be replaced.
- 5). The original female connector has connection markings A, B, and C on one end. The three wires from the switchboard originally connected to A, B, and C should now be soldered to connections 1, 2, and 3, respectively, on one end of the replacement female connector.
- 6). Install motor operator on the circuit breaker and verify that motor operator functions properly when switchboard is re-energized.

**320-B.4 COORDINATION CONSIDERATIONS FOR REPLACEMENT ELECTRONIC AQB CIRCUIT BREAKERS .**

**320-B.4.1 LONG-TIME DELAY CHARACTERISTICS OF OBSOLETE THERMAL MAGNETIC AND POTENTIAL REPLACEMENT ELECTRONIC AQB CIRCUIT BREAKERS.** As with thermal magnetic AQB circuit breakers, electronic AQB circuit breakers have fixed long-time delay characteristics. As listed in [Tables 320-B-8](#) through [320-B-14](#), the fixed long-time delay characteristics are not always the same between thermal magnetic and electronic circuit breakers of the same frame size. Users should be aware of this when considering an electronic replacement circuit breaker and determine any coordination issues that may result from the long-time delay differences.

**320-B.4.2 GUIDANCE ON SETTING ELECTRONIC AQB CIRCUIT BREAKERS WHEN USED AS A REPLACEMENT FOR OBSOLETE THERMAL MAGNETIC AQB CIRCUIT BREAKERS (CONVERSION TABLES).**

- a. Because an electronic circuit breaker has several more settings than a thermal magnetic circuit breaker, the user needs guidance on how to set the electronic version to best approximate the instantaneous characteristics of the thermal magnetic design being replaced. The conversion tables (Tables 320-B-15 through 320-B-26) provide that guidance.
- b. Since the long-time delay features of the thermal magnetic and electronic circuit breakers are not adjustable, only the continuous current rating and instantaneous characteristics of thermal magnetic circuit breakers can be approximated or matched by electronic circuit breakers using the available adjustable settings. As shown in the conversion tables, the short-time delay features on the electronic circuit breakers are sometimes used to more closely approximate or match the instantaneous characteristics of thermal magnetic circuit breakers. Thermal magnetic circuit breakers do not have short-time delay features.
- c. The settings in the conversion tables are not requirements; they are offered as recommendations only. They do not replace or supersede circuit breaker settings determined by coordination studies or other analyses.

320-B.4.2.1 How to Use Conversion Tables. To use the conversion tables to set a replacement AQB electronic circuit breaker:

- a. Determine the trip unit type used in the obsolete AQB thermal magnetic circuit breaker being replaced.
- b. Determine the instantaneous pickup setting (LO, 2, 3, 4, or HI) used in the obsolete AQB thermal magnetic circuit breaker application.
- c. Consult the applicable conversion table in this appendix to obtain recommended settings for the electronic circuit breaker replacement.

320-B.4.2.1.1 Example of How to use Conversion Tables. As an example of how to use the conversion tables, consider a scenario where an obsolete SPD AQB-LF400 thermal magnetic circuit breaker installed in the field has just failed. Ships force determines that no spares are available and the circuit breaker cannot be repaired. Ships force orders an SPD AQB-LF402 electronic circuit breaker with CCS dial as a replacement. Before installing the AQB-LF402, ships force takes the following actions to ensure that the replacement circuit breaker is set properly for the application:

- a. Determines that the failed AQB-LF400 has a 300T trip unit.
- b. Determines that the AQB-LF400 instantaneous pickups are set at “HI” in the application.
- c. Consults Table 320-B-23 (AQB-LF400 to AQB-LF402 conversion settings) of this appendix and finds the following recommended AQB-LF402 settings when using an AQB-LF402 to replace an AQB-LF400 with 300T trip unit and instantaneous pickups set at “HI”:

CCS:	300
Instantaneous pickup:	6X (2,400 amps)
Short-time delay pickup:	8X (2,400 amps)
Short-time delay time band:	1

**Table 320-B-8.** Long-time Delay Tripping Characteristics for AQB-A101/  
AQB-A102/AQB-A103 Circuit Breakers

AQB-A101 trip units (SPD and Cutler-Hammer)
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**Table 320-B-8.** Long-time Delay Tripping Characteristics for AQB-A101/  
AQB-A102/AQB-A103 Circuit Breakers - Continued

Current as multiple of trip element rating	Tripping time 60-Hz AC trip element DC trip element	Tripping time 400-Hz AC trip element
1.35	----	Not less than 1 hour
1.5	Not less than 1 hour	----
2.25	Less than 1 hour	Less than 1 hour
6	Between 20 and 32 seconds	Between 35 and 45 seconds
1.5 2 3	Trip unit with "G" marking (see Note)	Not less than 20 minutes Between 5 and 15 minutes Between 60 and 120 seconds
	Not less than 20 minutes	
	Between 5 and 15 minutes	
	Between 60 and 120 seconds	
SPD AQB-A102 type "E1" & "E2" trip units		
Current in multiples of CCS	Tripping time 60 Hz and 400 Hz AC	
1.35	Not less than 1 hour	
1.65	Less than 1 hour	
4	Between 35 and 55 seconds	
6	Between 20 and 32 seconds	
Cutler-Hammer AQB-A103/AQB-A103 RMS trip units		
Current in multiples of CCS	Tripping time 60 Hz and 400 Hz AC	
1.5	Not less than 1 hour	
2.25	Less than 1 hour	
6	Between 20 and 32 seconds	
<b>NOTE</b>		
Letter "G" denotes special calibration for use as generator or transformer protection.		

**Table 320-B-9.** Long-time Delay Tripping Characteristics for AQB-A250/  
AQB-A252/AQB-A253 Circuit Breakers

AQB-A250 trip units (SPD and Cutler-Hammer)		
Current as multiple of trip element rating	Tripping time 60-Hz AC trip element DC trip element	Tripping time 400-Hz AC trip element
1.35	----	Not less than 1 hour
1.5	Not less than 1 hour	----
2.25	Less than 1 hour	Less than 1 hour
6	Between 20 and 32 seconds	Between 35 and 45 seconds
1.5 2 3	Trip unit with "G" marking (see Note 1)	Not less than 20 minutes Between 5 and 15 minutes Between 60 and 120 seconds
	Not less than 20 minutes	
	Between 5 and 15 minutes	
	Between 60 and 120 seconds	
SPD AQB-A252 trip units		
Current as multiple of CCS	Tripping time 60 Hz and 400 Hz AC	
1.35	Not less than 1 hour	



**Table 320-B-9.** Long-time Delay Tripping Characteristics for AQB-A250/

## AQB-A252/AQB-A253 Circuit Breakers - Continued

1.65	Less than 1 hour
4	Between 35 and 55 seconds
6	Between 20 and 32 seconds
Cutler-Hammer AQB-A253 trip units	
Current as multiple of CCS	Tripping time 60 Hz and 400 Hz AC
1.35	Not less than 1 hour
1.65	Less than 1 hour
4	Between 31 and 49 seconds
6	Between 14 and 22 seconds
<b>NOTE</b>	
Letter "G" denotes special calibration for use as generator or transformer protection.	

**Table 320-B-10.** Long-time Delay Tripping Characteristics for AQB-LF250/

## AQB-LF252/AQB-L253 Circuit Breakers

AQB-LF250 trip units (SPD and Cutler-Hammer)	
Current as multiple of trip element rating	Tripping time 60-Hz AC trip element
1.5	Not less than 1 hour
2.25	Less than 1 hour
6	Between 20 and 32 seconds
SPD AQB-LF252 trip units	
Current as multiple of CCS	Tripping time 60 Hz AC
1.35	Not less than 1 hour
1.65	Less than 1 hour
4	Between 35 and 55 seconds
6	Between 20 and 32 seconds
Cutler-Hammer AQB-L253 trip units	
Current as multiple of CCS	Tripping time 60 Hz AC
1.35	Not less than 1 hour
1.65	Less than 1 hour
4	Between 31 and 49 seconds
6	Between 14 and 22 seconds

**Table 320-B-11.** Long-time Delay Tripping Characteristics for AQB-A400/

## AQB-A402 Circuit Breakers

SPD AQB-A400 trip units		
Current as multiple of trip element rating	Tripping time 60-Hz AC trip element DC trip element	Tripping time 400-Hz AC trip element
1.35	----	Not less than 1 hour
1.5	Not less than 1 hour	----

**Table 320-B-11.** Long-time Delay Tripping Characteristics for AQB-A400/  
AQB-A402 Circuit Breakers - Continued

2.25	Less than 1 hour	Less than 1 hour
6	Between 20 and 32 seconds	Between 35 and 45 seconds
1.5 2 3	Trip unit with "G" marking (see Note 1)	Not less than 20 minutes Between 5 and 15 minutes Between 60 and 120 seconds
	Not less than 20 minutes	
	Between 5 and 15 minutes	
3	Between 60 and 120 seconds	Between 60 and 120 seconds
SPD AQB-A402 trip units		
Current as multiple of CCS	Tripping time 60 Hz and 400 Hz AC	
1.35	Not less than 1 hour	
1.65	Less than 1 hour	
4	Between 35 and 55 seconds	
6	Between 20 and 32 seconds	
<b>NOTE</b>		
Letter "G" denotes special calibration for use as generator or transformer protection.		

**Table 320-B-12.** Long-time Delay Tripping Characteristics for AQB-LF400/  
AQB-LF402/AQB-LL400/AQB-L400 Circuit Breakers

SPD AQB-LF400 trip units		
Current as multiple of trip element rating	Tripping time 60-Hz AC trip element DC trip elements	
1.3	Not less than 1 hour	
2.25	Less than 1 hour	
6	Between 20 and 32 seconds	
SPD AQB-LF402 trip units		
Current as multiple of CCS	Tripping time 60 Hz and 400 Hz AC	
1.35	Not less than 1 hour	
1.65	Less than 1 hour	
4	Between 35 and 55 seconds	
6	Between 20 and 32 seconds	
Cutler-Hammer AQB-LL400/AQB-L400 trip units		
Current as multiple of trip element rating	Tripping time 60 Hz AC trip element	
1.3	Not less than 1 hour	
2.25	Less than 1 hour	
6	Between 20 and 32 seconds	

**Table 320-B-13.** Long-time Delay Tripping Characteristics for AQB-A800/  
AQB-A802 Circuit Breakers

SPD AQB-A800 trip units		
Current as multiple of trip element rating	Tripping time 60-Hz AC trip element	

**Table 320-B-13.** Long-time Delay Tripping Characteristics for AQB-A800/  
AQB-A802 Circuit Breakers - Continued

1.35	----
1.5	Not less than 1 hour
2.25	Less than 1 hour
6	Between 20 and 32 seconds
Trip unit with "G" marking (see Note 1)	
1.5	Not less than 20 minutes
2	Between 5 and 15 minutes
3	Between 60 and 120 seconds
SPD AQB-A802 trip units	
Current as multiple of CCS	Tripping time 60 Hz and 400 Hz AC
1.35	Not less than 1 hour
1.65	Less than 1 hour
4	Between 35 and 55 seconds
6	Between 20 and 32 seconds
<b>NOTE</b>	
Letter "G" denotes special calibration for use as generator or transformer protection.	

**Table 320-B-14.** Long-time Delay Tripping Characteristics for AQB-A1600/  
AQB-A1604 Circuit Breakers

SPD AQB-A1600 trip units	
Current as multiple of trip element rating	Tripping time 60-Hz AC trip element
1.5	Not less than 1 hour
2.25	Less than 1 hour
6	Between 20 and 32 seconds
SPD AQB-A1604 trip units	
Current as multiple of CCS	Tripping time 60 Hz and 400 Hz AC
1.35	Not less than 1 hour
1.65	Less than 1 hour
4	Between 35 and 55 seconds
6	Between 20 and 32 seconds

**Table 320-B-15.** AQB-A101 to A102 Type "E1" and "E2" Conversion  
Settings

SPD AQB-A101 settings		SPD AQB-A102 Type "E1" and "E2" equivalent settings AC applications only (see Note 1)			
Trip unit type	Instantaneous pickup (AC amps)	Continuous current setting (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
15	LO (90)	15	3X (300)	6X (90)	1
15	2 (115)	15	3X (300)	8X (120)	1
15	3 (140)	15	3X (100)	10X (150)	1

**Table 320-B-15.** AQB-A101 to A102 Type “E1” and “E2” Conversion

Settings - Continued

SPD AQB-A101 settings		SPD AQB-A102 Type “E1” and “E2” equivalent settings AC applications only (see Note 1)			
Trip unit type	Instantaneous pickup (AC amps)	Continuous current setting (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
15	4 (165)	15	3X (300)	10X (150)	2
15	HI (195)	15	3X (300)	10X (150)	2
15H	LO (90)	15	3X (300)	6X (90)	1
15H	2 (115)	15	3X (300)	8X (120)	1
15H	3 (140)	15	3X (100)	10X (150)	1
15H	4 (165)	15	3X (300)	10X (150)	2
15H	HI (195)	15	3X (300)	10X (150)	2
15I	LO (90)	N/A	N/A	N/A	N/A
15I	2 (115)	N/A	N/A	N/A	N/A
15I	3 (140)	N/A	N/A	N/A	N/A
15I	4 (165)	N/A	N/A	N/A	N/A
15I	HI (195)	N/A	N/A	N/A	N/A
25	LO (150)	25	3X (300)	6X (150)	1
25	2 (190)	25	3X (300)	6X (150)	2
25	3 (235)	25	3X (300)	8X (200)	2
25	4 (280)	25	3X (300)	10X (250)	2
25	HI (325)	25	3X (300)	10X (250)	3
25H	LO (150)	25	3X (300)	6X (150)	1
25H	2 (190)	25	3X (300)	6X (150)	2
25H	3 (235)	25	3X (300)	8X (200)	2
25H	4 (280)	25	3X (300)	10X (250)	2
25H	HI (325)	25	3X (300)	10X (250)	3
25I	LO (150)	N/A	N/A	N/A	N/A
25I	2 (190)	N/A	N/A	N/A	N/A
25I	3 (235)	N/A	N/A	N/A	N/A
25I	4 (280)	N/A	N/A	N/A	N/A
25I	HI (325)	N/A	N/A	N/A	N/A
50	LO (300)	50	3X (300)	6X (300)	1
50	2 (380)	50	4X (400)	6X (300)	2
50	3 (470)	50	6X (600)	8X (400)	2
50	4 (560)	50	6X (600)	10X (500)	2
50	HI (650)	50	6X (600)	10X (500)	3
50G	LO (300)	N/A	N/A	N/A	N/A
50G	2 (380)	N/A	N/A	N/A	N/A
50G	3 (470)	N/A	N/A	N/A	N/A
50G	4 (560)	N/A	N/A	N/A	N/A
50G	HI (650)	N/A	N/A	N/A	N/A
50H	LO (300)	50	3X (300)	6X (300)	1
50H	2 (380)	50	4X (400)	6X (300)	2
50H	3 (470)	50	6X (600)	8X (400)	2
50H	4 (560)	50	6X (600)	10X (500)	2

**Table 320-B-15.** AQB-A101 to A102 Type “E1” and “E2” Conversion

Settings - Continued

SPD AQB-A101 settings		SPD AQB-A102 Type “E1” and “E2” equivalent settings AC applications only (see Note 1)			
Trip unit type	Instantaneous pickup (AC amps)	Continuous current setting (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
50H	HI (650)	50	6X (600)	10X (500)	3
50I	LO (300)	N/A	N/A	N/A	N/A
50I	2 (380)	N/A	N/A	N/A	N/A
50I	3 (470)	N/A	N/A	N/A	N/A
50I	4 (560)	N/A	N/A	N/A	N/A
50I	HI (650)	N/A	N/A	N/A	N/A
75 (see Note 2)	LO (450)	75	6X (600)	6X (450)	1
75 (see Note 2)	2 (580)	75	6X (600)	6X (450)	2
75 (see Note 2)	3 (710)	75	8X (800)	10X (750)	1
75 (see Note 2)	4 (840)	75	8X (800)	10X (750)	3
75 (see Note 2)	HI (975)	75	10X (1,000)	10X (750)	3
75H (see Note 2)	LO (450)	75	6X (600)	6X (450)	1
75H (see Note 2)	2 (580)	75	6X (600)	6X (450)	2
75H (see Note 2)	3 (710)	75	8X (800)	10X (750)	1
75H (see Note 2)	4 (840)	75	8X (800)	10X (750)	3
75H (see Note 2)	HI (975)	75	10X (1,000)	10X (750)	3
75I (see Note 2)	LO (450)	N/A	N/A	N/A	N/A
75I (see Note 2)	2 (580)	N/A	N/A	N/A	N/A
75I (see Note 2)	3 (710)	N/A	N/A	N/A	N/A
75I (see Note 2)	4 (840)	N/A	N/A	N/A	N/A
75I (see Note 2)	HI (975)	N/A	N/A	N/A	N/A
100	LO (600)	100	6X (600)	6X (600)	1
100	2 (775)	100	8X (800)	6X (600)	2
100	3 (950)	100	10X (1,000)	8X (800)	2
100	4 (1,125)	100	12X (1,200)	10X (1,000)	2
100	HI (1,300)	100	12X (1,200)	10X (1,000)	3
100G	LO (600)	N/A	N/A	N/A	N/A
100G	2 (775)	N/A	N/A	N/A	N/A
100G	3 (950)	N/A	N/A	N/A	N/A
100G	4 (1,125)	N/A	N/A	N/A	N/A
100G	HI (1,300)	N/A	N/A	N/A	N/A
100H	LO (600)	100	6X (600)	6X (600)	1
100H	2 (775)	100	8X (800)	6X (600)	2
100H	3 (950)	100	10X (1,000)	8X (800)	2
100H	4 (1,125)	100	12X (1,200)	10X (1,000)	2
100H	HI (1,300)	100	12X (1,200)	10X (1,000)	3
100I	LO (600)	N/A	N/A	N/A	N/A

**Table 320-B-15.** AQB-A101 to A102 Type “E1” and “E2” Conversion

Settings - Continued

SPD AQB-A101 settings		SPD AQB-A102 Type “E1” and “E2” equivalent settings AC applications only (see Note 1)			
Trip unit type	Instantaneous pickup (AC amps)	Continuous current setting (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
100I	2 (775)	N/A	N/A	N/A	N/A
100I	3 (950)	N/A	N/A	N/A	N/A
100I	4 (1,125)	N/A	N/A	N/A	N/A
100I	HI (1,300)	N/A	N/A	N/A	N/A

NOTES:

- “N/A” stands for “Not Applicable”. An AQB-A102 cannot be used as a replacement for the AQB-A101 with 50G and 100G trip elements because the differences between the circuit breakers in the fixed long-time delay features are considerable. An AQB-A102 cannot be used as a replacement for the AQB-A101 with 15I, 25I, 50I, 75I, and 100I trip units because the AQB-A102 has fixed long-time delay features and the AQB-A101 with I-suffix trip units has no long-time delay features (it has instantaneous only).
- When replacing an AQB-A101 that has a 75-amp trip element, use an AQB-A102 Type “E1” circuit breaker.

**Table 320-B-16.** AQB-A101 to AQB-A103 Conversion Settings

SPD AQB-A101 settings		Cutler-Hammer AQB-A103 equivalent settings 60 Hz AC applications only (see Note 1)				
Trip unit type	Instantaneous pickup (AC amps)	Frame size	Continuous current setting (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
15	LO (90)	25	15	6X (150)	7X (105)	MIN
15	2 (115)	25	15	6X (150)	7X (105)	MIN
15	3 (140)	25	15	6X (150)	10X (150)	MIN
15	4 (165)	25	15	6X (150)	10X (150)	MIN
15	HI (195)	25	15	8X (200)	13X (195)	MIN
15H	LO (90)	N/A	N/A	N/A	N/A	N/A
15H	2 (115)	N/A	N/A	N/A	N/A	N/A
15H	3 (140)	N/A	N/A	N/A	N/A	N/A
15H	4 (165)	N/A	N/A	N/A	N/A	N/A
15H	HI (195)	N/A	N/A	N/A	N/A	N/A
15I	LO (90)	N/A	N/A	N/A	N/A	N/A
15I	2 (115)	N/A	N/A	N/A	N/A	N/A
15I	3 (140)	N/A	N/A	N/A	N/A	N/A
15I	4 (165)	N/A	N/A	N/A	N/A	N/A
15I	HI (195)	N/A	N/A	N/A	N/A	N/A
25	LO (150)	25	25	6X (150)	7X (175)	MIN
25	2 (190)	25	25	8X (200)	10X (250)	MIN
25	3 (235)	25	25	10X (250)	10X (250)	MIN
25	4 (280)	25	25	12X (300)	13X (325)	MIN
25	HI (325)	25	25	15X (375)	13X (325)	MIN
25H	LO (150)	N/A	N/A	N/A	N/A	N/A
25H	2 (190)	N/A	N/A	N/A	N/A	N/A
25H	3 (235)	N/A	N/A	N/A	N/A	N/A

Table 320-B-16. AQB-A101 to AQB-A103 Conversion Settings - Continued

SPD AQB-A101 settings		Cutler-Hammer AQB-A103 equivalent settings 60 Hz AC applications only (see Note 1)				
Trip unit type	Instantaneous pickup (AC amps)	Frame size	Continuous current setting (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
25H	4 (280)	N/A	N/A	N/A	N/A	N/A
25H	HI (325)	N/A	N/A	N/A	N/A	N/A
25I	LO (150)	N/A	N/A	N/A	N/A	N/A
25I	2 (190)	N/A	N/A	N/A	N/A	N/A
25I	3 (235)	N/A	N/A	N/A	N/A	N/A
25I	4 (280)	N/A	N/A	N/A	N/A	N/A
25I	HI (325)	N/A	N/A	N/A	N/A	N/A
50	LO (300)	100	50	6X (600)	7X (350)	MIN
50	2 (380)	100	50	6X (600)	7X (350)	MIN
50	3 (470)	100	50	6X (600)	10X (500)	MIN
50	4 (560)	100	50	6X (600)	13X (650)	MIN
50	HI (650)	100	50	8X (800)	13X (650)	MIN
50G	LO (300)	N/A	N/A	N/A	N/A	N/A
50G	2 (380)	N/A	N/A	N/A	N/A	N/A
50G	3 (470)	N/A	N/A	N/A	N/A	N/A
50G	4 (560)	N/A	N/A	N/A	N/A	N/A
50G	HI (650)	N/A	N/A	N/A	N/A	N/A
50H	LO (300)	N/A	N/A	N/A	N/A	N/A
50H	2 (380)	N/A	N/A	N/A	N/A	N/A
50H	3 (470)	N/A	N/A	N/A	N/A	N/A
50H	4 (560)	N/A	N/A	N/A	N/A	N/A
50H	HI (650)	N/A	N/A	N/A	N/A	N/A
50I	LO (300)	N/A	N/A	N/A	N/A	N/A
50I	2 (380)	N/A	N/A	N/A	N/A	N/A
50I	3 (470)	N/A	N/A	N/A	N/A	N/A
50I	4 (560)	N/A	N/A	N/A	N/A	N/A
50I	HI (650)	N/A	N/A	N/A	N/A	N/A
75	LO (450)	N/A	N/A	N/A	N/A	N/A
75	2 (580)	N/A	N/A	N/A	N/A	N/A
75	3 (710)	N/A	N/A	N/A	N/A	N/A
75	4 (840)	N/A	N/A	N/A	N/A	N/A
75	HI (975)	N/A	N/A	N/A	N/A	N/A
75H	LO (450)	N/A	N/A	N/A	N/A	N/A
75H	2 (580)	N/A	N/A	N/A	N/A	N/A
75H	3 (710)	N/A	N/A	N/A	N/A	N/A
75H	4 (840)	N/A	N/A	N/A	N/A	N/A
75H	HI (975)	N/A	N/A	N/A	N/A	N/A
75I	LO (450)	N/A	N/A	N/A	N/A	N/A
75I	2 (580)	N/A	N/A	N/A	N/A	N/A
75I	3 (710)	N/A	N/A	N/A	N/A	N/A
75I	4 (840)	N/A	N/A	N/A	N/A	N/A
75I	HI (975)	N/A	N/A	N/A	N/A	N/A
100	LO (600)	100	100	6X (600)	7X (700)	MIN

**Table 320-B-16.** AQB-A101 to AQB-A103 Conversion Settings - Continued

SPD AQB-A101 settings		Cutler-Hammer AQB-A103 equivalent settings 60 Hz AC applications only (see Note 1)				
Trip unit type	Instantaneous pickup (AC amps)	Frame size	Continuous current setting (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
100	2 (775)	100	100	8X (800)	10X (1,000)	MIN
100	3 (950)	100	100	10X (1,000)	10X (1,000)	MIN
100	4 (1,125)	100	100	12X (1,200)	13X (1,300)	MIN
100	HI (1,300)	100	100	15X (1,500)	13X (1,300)	MIN
100G	LO (600)	N/A	N/A	N/A	N/A	N/A
100G	2 (775)	N/A	N/A	N/A	N/A	N/A
100G	3 (950)	N/A	N/A	N/A	N/A	N/A
100G	4 (1,125)	N/A	N/A	N/A	N/A	N/A
100G	HI (1,300)	N/A	N/A	N/A	N/A	N/A
100H	N/A	N/A	N/A	N/A	N/A	N/A
100H	N/A	N/A	N/A	N/A	N/A	N/A
100H	N/A	N/A	N/A	N/A	N/A	N/A
100H	N/A	N/A	N/A	N/A	N/A	N/A
100H	N/A	N/A	N/A	N/A	N/A	N/A
100I	LO (600)	N/A	N/A	N/A	N/A	N/A
100I	2 (775)	N/A	N/A	N/A	N/A	N/A
100I	3 (950)	N/A	N/A	N/A	N/A	N/A
100I	4 (1,125)	N/A	N/A	N/A	N/A	N/A
100I	HI (1,300)	N/A	N/A	N/A	N/A	N/A

Notes:

1. "N/A" stands for "Not Applicable". An AQB-A103 cannot be used as a replacement in some applications because of the following:
  - An AQB-A103 cannot be used as a replacement for an AQB-A101 with 50G and 100G trip units because the differences between the circuit breakers in the fixed long-time delay features are considerable.
  - An AQB-A103 cannot be used as a replacement for an AQB-A101 with 15I, 25I, 50I, 75I, and 100I trip units because the AQB-A103 has fixed long-time delay features and the AQB-A101 with I-suffix trip units has no long-time delay features (it has instantaneous only).
  - An AQB-A103 cannot be used as a replacement for an AQB-A101 with 75 amp trip unit because the AQB-A103 does not have a 75 amp continuous current setting.
  - An AQB-A103 cannot be used as a replacement for an AQB-A101 with 15H, 25H, 50H, 75H, and 100H 400 Hz trip units because the AQB-A103 has a 400 Hz/500VAC interruption rating of 7,500 amps and the AQB-A101 with H-suffix trip units has a 400 Hz/500VAC interruption rating of 10,000 amps (refer to [Table 320-B-1](#)).

**Table 320-B-17.** AQB-A101 to AQB-A103RMS Conversion Settings

SPD AQB-A101 settings		Cutler-Hammer AQB-A103RMS equivalent settings 60 Hz AC applications only (see Note 1)				
Trip unit type	Instantaneous pickup (AC amps)	Frame size	Continuous current setting (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
15	LO (90)	25	15	6X (150)	7X (105)	MIN
15	2 (115)	25	15	6X (150)	7X (105)	MIN
15	3 (140)	25	15	6X (150)	10X (150)	MIN



Table 320-B-17. AQB-A101 to AQB-A103RMS Conversion Settings -

Continued

SPD AQB-A101 settings		Cutler-Hammer AQB-A103RMS equivalent settings 60 Hz AC applications only (see Note 1)				
Trip unit type	Instantaneous pickup (AC amps)	Frame size	Continuous current setting (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
15	4 (165)	25	15	6X (150)	10X (150)	MIN
15	HI (195)	25	15	8X (200)	13X (195)	MIN
15H	LO (90)	N/A	N/A	N/A	N/A	N/A
15H	2 (115)	N/A	N/A	N/A	N/A	N/A
15H	3 (140)	N/A	N/A	N/A	N/A	N/A
15H	4 (165)	N/A	N/A	N/A	N/A	N/A
15H	HI (195)	N/A	N/A	N/A	N/A	N/A
15I	LO (90)	N/A	N/A	N/A	N/A	N/A
15I	2 (115)	N/A	N/A	N/A	N/A	N/A
15I	3 (140)	N/A	N/A	N/A	N/A	N/A
15I	4 (165)	N/A	N/A	N/A	N/A	N/A
15I	HI (195)	N/A	N/A	N/A	N/A	N/A
25	LO (150)	25	25	6X (150)	7X (175)	MIN
25	2 (190)	25	25	8X (200)	10X (250)	MIN
25	3 (235)	25	25	10X (250)	10X (250)	MIN
25	4 (280)	25	25	12X (300)	13X (325)	MIN
25	HI (325)	25	25	15X (375)	13X (325)	MIN
25H	LO (150)	N/A	N/A	N/A	N/A	N/A
25H	2 (190)	N/A	N/A	N/A	N/A	N/A
25H	3 (235)	N/A	N/A	N/A	N/A	N/A
25H	4 (280)	N/A	N/A	N/A	N/A	N/A
25H	HI (325)	N/A	N/A	N/A	N/A	N/A
25I	LO (150)	N/A	N/A	N/A	N/A	N/A
25I	2 (190)	N/A	N/A	N/A	N/A	N/A
25I	3 (235)	N/A	N/A	N/A	N/A	N/A
25I	4 (280)	N/A	N/A	N/A	N/A	N/A
25I	HI (325)	N/A	N/A	N/A	N/A	N/A
50	LO (300)	100	50	6X (600)	7X (350)	MIN
50	2 (380)	100	50	6X (600)	7X (350)	MIN
50	3 (470)	100	50	6X (600)	10X (500)	MIN
50	4 (560)	100	50	6X (600)	10X (500)	MIN
50	HI (650)	100	50	8X (800)	13X (650)	MIN
50G	LO (300)	N/A	N/A	N/A	N/A	N/A
50G	2 (380)	N/A	N/A	N/A	N/A	N/A
50G	3 (470)	N/A	N/A	N/A	N/A	N/A
50G	4 (560)	N/A	N/A	N/A	N/A	N/A
50G	HI (650)	N/A	N/A	N/A	N/A	N/A
50H	LO (300)	N/A	N/A	N/A	N/A	N/A
50H	2 (380)	N/A	N/A	N/A	N/A	N/A
50H	3 (470)	N/A	N/A	N/A	N/A	N/A
50H	4 (560)	N/A	N/A	N/A	N/A	N/A

Table 320-B-17. AQB-A101 to AQB-A103RMS Conversion Settings -

Continued

SPD AQB-A101 settings		Cutler-Hammer AQB-A103RMS equivalent settings 60 Hz AC applications only (see Note 1)				
Trip unit type	Instantaneous pickup (AC amps)	Frame size	Continuous current setting (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
50H	HI (650)	N/A	N/A	N/A	N/A	N/A
50I	LO (300)	N/A	N/A	N/A	N/A	N/A
50I	2 (380)	N/A	N/A	N/A	N/A	N/A
50I	3 (470)	N/A	N/A	N/A	N/A	N/A
50I	4 (560)	N/A	N/A	N/A	N/A	N/A
50I	HI (650)	N/A	N/A	N/A	N/A	N/A
75	LO (450)	100	75	6X (600)	5X (375)	MIN
75	2 (580)	100	75	6X (600)	7X (525)	MIN
75	3 (710)	100	75	8X (800)	9X (675)	MIN
75	4 (840)	100	75	8X (800)	10X (750)	MIN
75	HI (975)	100	75	10X (1,000)	13X (975)	MIN
75H	LO (450)	N/A	N/A	N/A	N/A	N/A
75H	2 (580)	N/A	N/A	N/A	N/A	N/A
75H	3 (710)	N/A	N/A	N/A	N/A	N/A
75H	4 (840)	N/A	N/A	N/A	N/A	N/A
75H	HI (975)	N/A	N/A	N/A	N/A	N/A
75I	LO (450)	N/A	N/A	N/A	N/A	N/A
75I	2 (580)	N/A	N/A	N/A	N/A	N/A
75I	3 (710)	N/A	N/A	N/A	N/A	N/A
75I	4 (840)	N/A	N/A	N/A	N/A	N/A
75I	HI (975)	N/A	N/A	N/A	N/A	N/A
100	LO (600)	100	100	6X (600)	7X (700)	MIN
100	2 (775)	100	100	8X (800)	10X (1,000)	MIN
100	3 (950)	100	100	10X (1,000)	10X (1,000)	MIN
100	4 (1,125)	100	100	12X (1,200)	13X (1,300)	MIN
100	HI (1,300)	100	100	15X (1,500)	13X (1,300)	MIN
100G	LO (600)	N/A	N/A	N/A	N/A	N/A
100G	2 (775)	N/A	N/A	N/A	N/A	N/A
100G	3 (950)	N/A	N/A	N/A	N/A	N/A
100G	4 (1,125)	N/A	N/A	N/A	N/A	N/A
100G	HI (1,300)	N/A	N/A	N/A	N/A	N/A
100H	N/A	N/A	N/A	N/A	N/A	N/A
100H	N/A	N/A	N/A	N/A	N/A	N/A
100H	N/A	N/A	N/A	N/A	N/A	N/A
100H	N/A	N/A	N/A	N/A	N/A	N/A
100H	N/A	N/A	N/A	N/A	N/A	N/A
100I	LO (600)	N/A	N/A	N/A	N/A	N/A
100I	2 (775)	N/A	N/A	N/A	N/A	N/A
100I	3 (950)	N/A	N/A	N/A	N/A	N/A
100I	4 (1,125)	N/A	N/A	N/A	N/A	N/A
100I	HI (1,300)	N/A	N/A	N/A	N/A	N/A

**Table 320-B-17.** AQB-A101 to AQB-A103RMS Conversion Settings -

Continued

SPD AQB-A101 settings		Cutler-Hammer AQB-A103RMS equivalent settings 60 Hz AC applications only (see Note 1)				
Trip unit type	Instantaneous pickup (AC amps)	Frame size	Continuous current setting (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
Notes:						
1. "N/A" stands for "Not Applicable". An AQB-A103RMS cannot be used as a replacement in some applications because of the following:						
- An AQB-A103RMS cannot be used as a replacement for an AQB-A101 with 50G and 100G trip units because the differences between the circuit breakers in the fixed long-time delay features are considerable.						
- An AQB-A103RMS cannot be used as a replacement for an AQB-A101 with 15I, 25I, 50I, 75I, and 100I trip units because the AQB-A103RMS has fixed long-time delay features and the AQB-A101 with I-suffix trip units has no long-time delay features (it has instantaneous only).						
- An AQB-A103RMS cannot be used as a replacement for an AQB-A101 with 75 amp trip unit because the AQB-A103RMS does not have a 75 amp continuous current setting.						
- An AQB-A103RMS cannot be used as a replacement for an AQB-A101 with 15H, 25H, 50H, 75H, and 100H 400 Hz trip units because the AQB-A103RMS has a 400 Hz/500VAC interruption rating of 7,500 amps and the AQB-A101 with H-suffix trip units has a 400 Hz/500VAC interruption rating of 10,000 amps (refer to <a href="#">Table 320-B-1</a> ).						

**Table 320-B-18.** AQB-A250 to AQB-A252 Conversion Settings

SPD AQB-A250 settings		SPD AQB-A252 equivalent settings (AC applications only)				
Trip unit type	Instantaneous pickup (AC amps)	Continuous current setting/ rating plug (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band	Frequency selector switch (CCS dial version only)
125N	LO (650)	125	3X (750)	6X (750)	1	60Hz
125N	2 (780)	125	3X (750)	6X (750)	3	60Hz
125N	3 (900)	125	4X (1,000)	6X (750)	3	60Hz
125N	4 (1,040)	125	4X (1,000)	8X (1,000)	3	60Hz
125N	HI (1,300)	125	6X (1,500)	10X (1,250)	1	60Hz
150N	LO (650)	150	3X (750)	4X (600)	1	60Hz
150N	2 (780)	150	3X (750)	6X (900)	1	60Hz
150N	3 (900)	150	4X (1,000)	6X (900)	1	60Hz
150N	4 (1,040)	150	4X (1,000)	8X (1,200)	1	60Hz
150N	HI (1,300)	150	6X (1,500)	8X (1,200)	2	60Hz
175N	LO (650)	175	3X (750)	4X (700)	1	60Hz
175N	2 (780)	175	3X (750)	6X (1,050)	1	60Hz
175N	3 (900)	175	4X (1,000)	6X (1,050)	1	60Hz
175N	4 (1,040)	175	4X (1,000)	6X (1,050)	1	60Hz
175N	HI (1,300)	175	6X (1,500)	8X (1,400)	1	60Hz
225N	LO (650)	225	3X (750)	3X (675)	1	60Hz
225N	2 (780)	225	3X (750)	4X (900)	1	60Hz
225N	3 (900)	225	4X (1,000)	4X (900)	1	60Hz
225N	4 (1,040)	225	4X (1,000)	4X (900)	3	60Hz
225N	HI (1,300)	225	6X (1,500)	6X (1,350)	1	60Hz

**Table 320-B-18.** AQB-A250 to AQB-A252 Conversion Settings - Continued

250N	LO (650)	250	3X (750)	3X (750)	1	60Hz
250N	2 (780)	250	3X (750)	3X (750)	1	60Hz
250N	3 (900)	250	4X (1,000)	3X (750)	3	60Hz
250N	4 (1,040)	250	4X (1,000)	4X (1,000)	3	60Hz
250N	HI (1,300)	250	6X (1,500)	6X (1,500)	1	60Hz
100NG	LO (1,175)	100	6X (1,500)	10X (1,000)	3	60Hz
100NG	2 (1,400)	100	6X (1,500)	15X (1,500)	1	60Hz
100NG	3 (1,620)	100	6X (1,500)	15X (1,500)	3	60Hz
100NG	4 (1,880)	100	8X (2,000)	15X (1,500)	3	60Hz
100NG	HI (2,350)	100	10X (2,500)	15X (1,500)	3	60Hz
160NG	LO (1,950)	150	8X (2,000)	15X (2,250)	1	60Hz
160NG	2 (2,425)	150	10X (2,500)	15X (2,250)	3	60Hz
160NG	3 (2,760)	150	10X (2,500)	15X (2,250)	3	60Hz
160NG	4 (3,200)	150	15X (3,750)	15X (2,250)	3	60Hz
160NG	HI (3,900)	150	15X (3,750)	15X (2,250)	3	60Hz
100NGH	LO (2,020)	100	8X (2,000)	15X (1,500)	3	400Hz
100NGH	2 (2,225)	100	8X (2,000)	15X (1,500)	3	400Hz
100NGH	3 (2,530)	100	10X (2,500)	15X (1,500)	3	400Hz
100NGH	4 (2,840)	100	10X (2,500)	15X (1,500)	3	400Hz
100NGH	HI (3,420)	100	15X (3,750)	15X (1,500)	3	400Hz
160NGH	LO (2,020)	150	8X (2,000)	15X (2,250)	1	400Hz
160NGH	2 (2,225)	150	8X (2,000)	15X (2,250)	3	400Hz
160NGH	3 (2,530)	150	10X (2,500)	15X (2,250)	3	400Hz
160NGH	4 (2,840)	150	10X (2,500)	15X (2,250)	3	400Hz
160NGH	HI (3,420)	150	15X (3,750)	15X (2,250)	3	400Hz
125NH	LO (910)	125	4X (1,000)	8X (1,000)	1	400Hz
125NH	2 (1,050)	125	4X (1,000)	8X (1,000)	2	400Hz
125NH	3 (1,180)	125	4X (1,000)	10X (1,250)	1	400Hz
125NH	4 (1,320)	125	6X (1,500)	10X (1,250)	1	400Hz
125NH	HI (1,560)	125	6X (1,500)	15X (1,875)	1	400Hz
150NH	LO (910)	150	4X (1,000)	6X (900)	1	400Hz
150NH	2 (1,050)	150	4X (1,000)	6X (900)	2	400Hz
150NH	3 (1,180)	150	4X (1,000)	8X (1,200)	1	400Hz
150NH	4 (1,320)	150	6X (1,500)	8X (1,200)	1	400Hz
150NH	HI (1,560)	150	6X (1,500)	10X (1,500)	1	400Hz
175NH	LO (910)	175	4X (1,000)	6X (1,050)	1	400Hz
175NH	2 (1,050)	175	4X (1,000)	6X (1,050)	1	400Hz
175NH	3 (1,180)	175	6X (1,500)	6X (1,050)	3	400Hz
175NH	4 (1,320)	175	6X (1,500)	8X (1,400)	1	400Hz
175NH	HI (1,560)	175	6X (1,500)	8X (1,400)	3	400Hz
225NH	LO (910)	225	4X (1,000)	4X (900)	1	400Hz
225NH	2 (1,050)	225	4X (1,000)	4X (900)	3	400Hz
225NH	3 (1,180)	225	6X (1,500)	6X (1,350)	1	400Hz
225NH	4 (1,320)	225	6X (1,500)	6X (1,350)	1	400Hz
225NH	HI (1,560)	225	6X (1,500)	8X (1,800)	1	400Hz
250NH	LO (910)	250	4X (1,000)	4X (1,000)	1	400Hz
250NH	2 (1,050)	250	4X (1,000)	4X (1,000)	1	400Hz
250NH	3 (1,180)	250	6X (1,500)	4X (1,000)	3	400Hz
250NH	4 (1,320)	250	6X (1,500)	4X (1,000)	3	400Hz

**Table 320-B-18.** AQB-A250 to AQB-A252 Conversion Settings - Continued

250NH	HI (1,560)	250	6X (1,500)	6X (1,500)	1	400Hz
125NM	LO (1,950)	125	8X (2,000)	15X (1,875)	3	60Hz
125NM	2 (2,425)	125	10X (2,500)	15X (1,875)	3	60Hz
125NM	3 (2,760)	125	10X (2,500)	15X (1,875)	3	60Hz
125NM	4 (3,200)	125	15X (3,750)	15X (1,875)	3	60Hz
125NM	HI (3,900)	125	15X (3,750)	15X (1,875)	3	60Hz
150NM	LO (1,950)	150	8X (2,000)	15X (2,250)	1	60Hz
150NM	2 (2,425)	150	10X (2,500)	15X (2,250)	3	60Hz
150NM	3 (2,760)	150	10X (2,500)	15X (2,250)	3	60Hz
150NM	4 (3,200)	150	15X (3,750)	15X (2,250)	3	60Hz
150NM	HI (3,900)	150	15X (3,750)	15X (2,250)	3	60Hz
175NM	LO (1,950)	175	8X (2,000)	15X (2,625)	1	60Hz
175NM	2 (2,425)	175	10X (2,500)	15X (2,625)	1	60Hz
175NM	3 (2,760)	175	10X (2,500)	15X (2,625)	3	60Hz
175NM	4 (3,200)	175	15X (3,750)	15X (2,625)	3	60Hz
175NM	HI (3,900)	175	15X (3,750)	15X (2,625)	3	60Hz
225NM	LO (1,500)	225	6X (1,500)	8X (1,800)	1	60Hz
225NM	2 (1,770)	225	8X (2,000)	8X (1,800)	1	60Hz
225NM	3 (2,025)	225	8X (2,000)	10X (2,250)	1	60Hz
225NM	4 (2,325)	225	10X (2,500)	10X (2,250)	3	60Hz
225NM	HI (3,000)	225	15X (3,750)	15X (3,375)	1	60Hz
250NM	LO (1,700)	250	8X (2,000)	6X (1,500)	3	60Hz
250NM	2 (1,880)	250	8X (2,000)	8X (2,000)	1	60Hz
250NM	3 (2,240)	250	10X (2,500)	8X (2,000)	3	60Hz
250NM	4 (2,625)	250	10X (2,500)	10X (2,500)	3	60Hz
250NM	HI (3,400)	250	15X (3,750)	15X (3,750)	1	60Hz

**Table 320-B-19.** AQB-A250 to AQB-A253 Conversion Settings

SPD AQB-A250 settings		Cutler-Hammer AQB-A253 equivalent settings AC applications only (see Note 1)		
Trip unit type	Instantaneous pickup (AC amps)	Continuous current setting on adjustable rating plug (amps)	Short-time delay pickup (amps)	Short-time delay time band (see Note 2)
125N	LO (650)	125	6X (750)	INST
125N	2 (780)	125	6X (750)	INST
125N	3 (900)	125	8X (1,000)	INST
125N	4 (1,040)	125	10X (1,250)	INST
125N	HI (1,300)	125	10X (1,250)	INST
150N	LO (650)	150	4X (600)	INST
150N	2 (780)	150	6X (900)	INST
150N	3 (900)	150	6X (900)	INST
150N	4 (1,040)	150	8X (1,200)	INST
150N	HI (1,300)	150	10X (1,500)	INST
175N	LO (650)	175	4X (700)	INST
175N	2 (780)	175	4X (700)	INST
175N	3 (900)	175	6X (1,050)	INST
175N	4 (1,040)	175	6X (1,050)	INST
175N	HI (1,300)	175	8X (1,400)	INST

**Table 320-B-19.** AQB-A250 to AQB-A253 Conversion Settings - Continued

SPD AQB-A250 settings		Cutler-Hammer AQB-A253 equivalent settings AC applications only (see Note 1)		
Trip unit type	Instantaneous pickup (AC amps)	Continuous current setting on adjustable rating plug (amps)	Short-time delay pickup (amps)	Short-time delay time band (see Note 2)
225N	LO (650)	225	3X (675)	INST
225N	2 (780)	225	4X (900)	INST
225N	3 (900)	225	4X (900)	INST
225N	4 (1,040)	N/A	N/A	N/A
225N	HI (1,300)	225	6X (1,350)	INST
250N	LO (650)	250	3X (750)	INST
250N	2 (780)	250	3X (750)	INST
250N	3 (900)	250	4X (1,000)	INST
250N	4 (1,040)	N/A	N/A	N/A
250N	HI (1,300)	250	6X (1,500)	INST
100NG	LO (1,175)	100	13X (1,300)	INST
100NG	2 (1,400)	100	13X (1,300)	INST
100NG	3 (1,620)	N/A	N/A	N/A
100NG	4 (1,880)	N/A	N/A	N/A
100NG	HI (2,350)	N/A	N/A	N/A
160NG	LO (1,950)	160	13X (2,080)	INST
160NG	2 (2,425)	160	13X (2,080)	INST
160NG	3 (2,760)	N/A	N/A	N/A
160NG	4 (3,200)	N/A	N/A	N/A
160NG	HI (3,900)	N/A	N/A	N/A
125NH	LO (910)	125	8X (1,000)	INST
125NH	2 (1,050)	125	8X (1,000)	INST
125NH	3 (1,180)	125	10X (1,250)	INST
125NH	4 (1,320)	125	12X (1,500)	INST
125NH	HI (1,560)	125	13X (1,625)	INST
150NH	LO (910)	150	6X (900)	INST
150NH	2 (1,050)	150	8X (1,200)	INST
150NH	3 (1,180)	150	8X (1,200)	INST
150NH	4 (1,320)	150	10X (1,500)	INST
150NH	HI (1,560)	150	10X (1,500)	INST
175NH	LO (910)	175	6X (1,050)	INST
175NH	2 (1,050)	175	6X (1,050)	INST
175NH	3 (1,180)	175	8X (1,400)	INST
175NH	4 (1,320)	175	8X (1,400)	INST
175NH	HI (1,560)	175	10X (1,750)	INST
225NH	LO (910)	225	4X (900)	INST
225NH	2 (1,050)	225	4X (900)	INST
225NH	3 (1,180)	225	6X (1,350)	INST
225NH	4 (1,320)	225	6X (1,350)	INST
225NH	HI (1,560)	225	8X (1,800)	INST
250NH	LO (910)	250	4X (1,000)	INST
250NH	2 (1,050)	250	4X (1,000)	INST
250NH	3 (1,180)	250	6X (1,500)	INST

**Table 320-B-19.** AQB-A250 to AQB-A253 Conversion Settings - Continued

SPD AQB-A250 settings		Cutler-Hammer AQB-A253 equivalent settings AC applications only (see Note 1)		
Trip unit type	Instantaneous pickup (AC amps)	Continuous current setting on adjustable rating plug (amps)	Short-time delay pickup (amps)	Short-time delay time band (see Note 2)
250NH	4 (1,320)	250	6X (1,500)	INST
250NH	HI (1,560)	250	6X (1,500)	INST
100NGH	LO (2,020)	N/A	N/A	N/A
100NGH	2 (2,225)	N/A	N/A	N/A
100NGH	3 (2,530)	N/A	N/A	N/A
100NGH	4 (2,840)	N/A	N/A	N/A
100NGH	HI (3,420)	N/A	N/A	N/A
160NGH	LO (2,020)	160	13X (2,080)	INST
160NGH	2 (2,225)	160	13X (2,080)	INST
160NGH	3 (2,530)	160	13X (2,080)	INST
160NGH	4 (2,840)	N/A	N/A	N/A
160NGH	HI (3,420)	N/A	N/A	N/A
250NGH	LO (2,520)	250	10X (2,500)	INST
250NGH	2 (2,960)	250	12X (3,000)	INST
250NGH	3 (3,120)	250	12X (3,000)	INST
250NGH	4 (3,590)	250	13X (3,250)	INST
250NGH	HI (4,200)	N/A	N/A	N/A
125NM	LO (1,950)	125	13X (1,625)	INST
125NM	2 (2,425)	N/A	N/A	N/A
125NM	3 (2,760)	N/A	N/A	N/A
125NM	4 (3,200)	N/A	N/A	N/A
125NM	HI (3,900)	N/A	N/A	N/A
150NM	LO (1,950)	150	13X (1,950)	INST
150NM	2 (2,425)	150	13X (1,950)	INST
150NM	3 (2,760)	N/A	N/A	N/A
150NM	4 (3,200)	N/A	N/A	N/A
150NM	HI (3,900)	N/A	N/A	N/A
175NM	LO (1,950)	175	13X (2,275)	INST
175NM	2 (2,425)	175	13X (2,275)	INST
175NM	3 (2,760)	175	13X (2,275)	INST
175NM	4 (3,200)	N/A	N/A	N/A
175NM	HI (3,900)	N/A	N/A	N/A
225NM	LO (1,500)	225	6X (1,350)	INST
225NM	2 (1,770)	225	8X (1,800)	INST
225NM	3 (2,025)	22%	10X (2,250)	INST
225NM	4 (2,325)	225	12X (2,700)	INST
225NM	HI (3,000)	N/A	N/A	N/A
250NM	LO (1,700)	250	6X (1,500)	INST
250NM	2 (1,880)	250	8X (2,000)	INST
250NM	3 (2,240)	250	10X (2,500)	INST
250NM	4 (2,625)	250	12X (3,000)	INST
250NM	HI (3,400)	250	13X (3,250)	INST

NOTES:

**Table 320-B-19.** AQB-A250 to AQB-A253 Conversion Settings - Continued

SPD AQB-A250 settings		Cutler-Hammer AQB-A253 equivalent settings AC applications only (see Note 1)		
Trip unit type	Instantaneous pickup (AC amps)	Continuous current setting on adjustable rating plug (amps)	Short-time delay pickup (amps)	Short-time delay time band (see Note 2)
1. "N/A" stands for "Not Applicable". Where noted, it means that the AQB-A253 cannot be considered as a replacement for the AQB-A250 in that particular application because available settings of the AQB-A253 do not match the AQB-A250 setting within $\pm 20\%$ .				
2. "INST" setting emulates an instantaneous function.				

**Table 320-B-20.** AQB-LF250 to AQB-LF252 Conversion Settings

SPD AQB-LF250 settings		SPD AQB-LF252 equivalent settings			
Trip unit type	Instantaneous pickup (AC amps)	Continuous current setting/ rating plug (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
125L	LO (650)	125	3X (750)	6X (750)	1
125L	2 (780)	125	3X (750)	6X (750)	3
125L	3 (900)	125	4X (1,000)	6X (750)	3
125L	4 (1,040)	125	4X (1,000)	8X (1,000)	3
125L	HI (1,300)	125	6X (1,500)	10X (1250)	1
150L	LO (650)	150	3X (750)	4X (600)	1
150L	2 (780)	150	3X (750)	6X (900)	1
150L	3 (900)	150	4X (1,000)	6X (900)	1
150L	4 (1,040)	150	4X (1,000)	8X (1,200)	1
150L	HI (1,300)	150	6X (1,500)	8X (1,200)	2
175L	LO (650)	175	3X (750)	4X (700)	1
175L	2 (780)	175	3X (750)	6X (1,050)	1
175L	3 (900)	175	4X (1,000)	6X (1,050)	1
175L	4 (1,040)	175	4X (1,000)	6X (1,050)	1
175L	HI (1,300)	175	6X (1,500)	8X (1,400)	1
225L	LO (650)	225	3X (750)	3X (675)	1
225L	2 (780)	225	3X (750)	4X (900)	1
225L	3 (900)	225	4X (1,000)	4X (900)	1
225L	4 (1,040)	225	4X (1,000)	4X (900)	3
225L	HI (1,300)	225	6X (1,500)	6X (1350)	1
250L	LO (650)	250	3X (750)	3X (750)	1
250L	2 (780)	250	3X (750)	3X (750)	1
250L	3 (900)	250	4X (1,000)	3X (750)	3
250L	4 (1,040)	250	4X (1,000)	4X (1,000)	3
250L	HI (1,300)	250	6X (1,500)	6X (1,500)	1
125LM	LO (1,500)	125	6X (1,500)	15X (1,875)	1
125LM	2 (1,770)	125	8X (2,000)	15X (1,875)	1
125LM	3 (2,025)	125	8X (2,000)	15X (1,875)	3
125LM	4 (2,325)	125	10X (2,500)	15X (1,875)	3
125LM	HI (3,000)	125	15X (3,750)	15X (1,875)	3
150LM	LO (1,500)	150	6X (1,500)	10X (1,500)	2
150LM	2 (1,770)	150	8X (2,000)	15X (2,250)	1



**Table 320-B-20.** AQB-LF250 to AQB-LF252 Conversion Settings -

Continued

SPD AQB-LF250 settings		SPD AQB-LF252 equivalent settings			
Trip unit type	Instantaneous pickup (AC amps)	Continuous current setting/ rating plug (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
150LM	3 (2,025)	150	8X (2,000)	15X (2,250)	1
150LM	4 (2,325)	150	10X (2,500)	15X (2,250)	3
150LM	HI (3,000)	150	15X (3,750)	15X (2,250)	3
175LM	LO (1,500)	175	6X (1,500)	10X (1,750)	1
175LM	2 (1,770)	175	8X (2,000)	10X (1,750)	1
175LM	3 (2,025)	175	8X (2,000)	15X (2,625)	1
175LM	4 (2,325)	175	10X (2,500)	15X (2,625)	1
175LM	HI (3,000)	175	15X (3,750)	15X (2,625)	3
225LM	LO (1,500)	225	6X (1,500)	8X (1,800)	1
225LM	2 (1,770)	225	8X (2,000)	8X (1,800)	1
225LM	3 (2,025)	225	8X (2,000)	10X (2,250)	1
225LM	4 (2,325)	225	10X (2,500)	10X (2,250)	1
225LM	HI (3,000)	225	15X (3,750)	15X (3,375)	1
250LM	LO (1,500)	250	6X (1,500)	6X (1,500)	2
250LM	2 (1,770)	250	8X (2,000)	8X (2,000)	1
250LM	3 (2,025)	250	8X (2,000)	8X (2,000)	3
250LM	4 (2,325)	250	10X (2,500)	10X (2,500)	1
250LM	HI (3,000)	250	15X (3,750)	10X (2,500)	3

**Table 320-B-21.** AQB-LF250 to AQB-L253 Conversion Settings

SPD AQB-LF250 settings		Cutler-Hammer AQB-L253 equivalent settings (see Note 1)			
Trip unit type	Instantaneous pickup (AC amps)	Frame size	Continuous current setting on adjustable rating plug (amps)	Short-time delay pickup (amps)	Short-time delay time band (see Note 2)
125L	LO (650)	250	125	6X (750)	INST
125L	2 (780)	250	125	6X (750)	INST
125L	3 (900)	250	125	8X (1,000)	INST
125L	4 (1,040)	250	125	10X (1250)	INST
125L	HI (1,300)	250	125	10X (1250)	INST
150L	LO (650)	250	150	4X (600)	INST
150L	2 (780)	250	150	6X (900)	INST
150L	3 (900)	250	150	6X (900)	INST
150L	4 (1,040)	250	150	8X (1,200)	INST
150L	HI (1,300)	250	150	10X (1,500)	INST
175L	LO (650)	250	175	4X (700)	INST
175L	2 (780)	250	175	4X (700)	INST
175L	3 (900)	250	175	6X (1,050)	INST
175L	4 (1,040)	250	175	6X (1,050)	INST
175L	HI (1,300)	250	175	8X (1,400)	INST
225L	LO (650)	250	225	3X (675)	INST

**Table 320-B-21.** AQB-LF250 to AQB-L253 Conversion Settings - Continued

SPD AQB-LF250 settings		Cutler-Hammer AQB-L253 equivalent settings (see Note 1)			
Trip unit type	Instantaneous pickup (AC amps)	Frame size	Continuous current setting on adjustable rating plug (amps)	Short-time delay pickup (amps)	Short-time delay time band (see Note 2)
225L	2 (780)	250	225	4X (900)	INST
225L	3 (900)	250	225	4X (900)	INST
225L	4 (1,040)	250	225	6X (1,350)	INST
225L	HI (1,300)	250	225	6X (1,350)	INST
250L	LO (650)	250	250	3X (750)	INST
250L	2 (780)	250	250	3X (750)	INST
250L	3 (900)	250	250	4X (1,000)	INST
250L	4 (1,040)	250	250	6X (1,500)	INST
250L	HI (1,300)	250	250	6X (1,500)	INST
125LM	LO (1,500)	250	125	13X (1,625)	INST
125LM	2 (1,770)	250	125	13X (1,625)	INST
125LM	3 (2,025)	250	125	13X (1,625)	INST
125LM	4 (2,325)	N/A	N/A	N/A	N/A
125LM	HI (3,000)	N/A	N/A	N/A	N/A
150LM	LO (1,500)	250	150	10X (1,500)	INST
150LM	2 (1,770)	250	150	12X (1,800)	INST
150LM	3 (2,025)	250	150	13X (1,950)	INST
150LM	4 (2,325)	250	150	13X (1,950)	INST
150LM	HI (3,000)	N/A	N/A	N/A	N/A
175LM	LO (1,500)	250	175	8X (1,400)	INST
175LM	2 (1,770)	250	175	10X (1,750)	INST
175LM	3 (2,025)	250	175	12X (2,100)	INST
175LM	4 (2,325)	250	175	13X (2,275)	INST
175LM	HI (3,000)	N/A	N/A	N/A	N/A
225LM	LO (1,500)	250	225	6X (1,350)	INST
225LM	2 (1,770)	250	225	8X (1,800)	INST
225LM	3 (2,025)	250	225	10X (2,250)	INST
225LM	4 (2,325)	250	225	12X (2,700)	INST
225LM	HI (3,000)	250	225	13X (2,925)	INST
250LM	LO (1,500)	250	250	6X (1,500)	INST
250LM	2 (1,770)	250	250	8X (2,000)	INST
250LM	3 (2,025)	250	250	8X (2,000)	INST
250LM	4 (2,325)	250	250	10X (2,500)	INST
250LM	HI (3,000)	250	250	12X (3,000)	INST

NOTES:

1. "N/A" stands for "Not Applicable". Where noted, it means that the AQB-L253 cannot be considered as a replacement for the AQB-LF250 in that particular application because available settings of the AQB-L253 do not match the AQB-LF250 setting within  $\pm 20\%$ .
2. "INST" setting emulates an instantaneous function.

Table 320-B-22. AQB-A400 to AQB-A402 Conversion Settings

SPD AQB-A400 settings		SPD AQB-A402 equivalent settings (AC applications only)				
Trip unit type	Instantaneous pickup (AC amps)	Continuous current setting/ rating plug (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band	Frequency selector switch (CCS dial version only)
250K	LO (800)	250	3X (1,200)	3X (750)	3	60Hz
250K	2 (1,035)	250	3X (1,200)	4X (1,000)	3	60Hz
250K	3 (1,165)	250	3X (1,200)	4X (1,000)	3	60Hz
250K	4 (1,325)	250	3X (1,200)	6X (1,500)	1	60Hz
250K	HI (1,530)	250	4X (1,600)	6X (1,500)	1	60Hz
300K	LO (1,380)	300	4X (1,600)	4X (1,200)	3	60Hz
300K	2 (1,610)	300	4X (1,600)	6X (1,800)	1	60Hz
300K	3 (1,820)	300	6X (2,400)	6X (1,800)	1	60Hz
300K	4 (2,035)	300	6X (2,400)	6X (1,800)	3	60Hz
300K	HI (2,280)	300	6X (2,400)	8X (2,400)	1	60Hz
350K	LO (1,380)	350	4X (1,600)	4X (1,400)	1	60Hz
350K	2 (1,610)	350	4X (1,600)	6X (2,100)	1	60Hz
350K	3 (1,820)	350	4X (1,600)	6X (2,100)	1	60Hz
350K	4 (2,035)	350	6X (2,400)	6X (2,100)	1	60Hz
350K	HI (2,280)	350	6X (2,400)	6X (2,100)	1	60Hz
400K	LO (1,380)	400	4X (1,600)	3X (1,200)	3	60Hz
400K	2 (1,610)	400	4X (1,600)	4X (1,600)	1	60Hz
400K	3 (1,820)	400	4X (1,600)	4X (1,600)	3	60Hz
400K	4 (2,035)	400	6X (2,400)	4X (1,600)	3	60Hz
400K	HI (2,280)	400	6X (2,400)	6X (2,400)	1	60Hz
350KG	LO (3,190)	350	8X (3,200)	10X (3,500)	1	60Hz
350KG	2 (3,725)	350	10X (4,000)	10X (3,500)	3	60Hz
350KG	3 (4,325)	350	10X (4,000)	15X (5,250)	1	60Hz
350KG	4 (5,175)	350	12X (4,800)	15X (5,250)	1	60Hz
350KG	HI (5,825)	350	15X (6,000)	15X (5,250)	3	60Hz
400KG	LO (3,190)	400	8X (3,200)	8X (3,200)	2	60Hz
400KG	2 (3,725)	400	10X (4,000)	10X (4,000)	1	60Hz
400KG	3 (4,325)	400	10X (4,000)	10X (4,000)	3	60Hz
400KG	4 (5,175)	400	12X (4,800)	15X (6,000)	1	60Hz
400KG	HI (5,825)	400	15X (6,000)	15X (6,000)	1	60Hz
350KGH	LO (2,020)	350	6X (2,400)	6X (2,100)	1	400Hz
350KGH	2 (2,225)	350	6X (2,400)	6X (2,100)	1	400Hz
350KGH	3 (2,530)	350	6X (2,400)	6X (2,100)	3	400Hz
350KGH	4 (2,840)	350	8X (3,200)	8X (2,800)	1	400Hz
350KGH	HI (3,420)	350	8X (3,200)	10X (3,500)	1	400Hz
400KGH	LO (2,020)	400	6X (2,400)	6X (2,400)	1	400Hz
400KGH	2 (2,225)	400	6X (2,400)	6X (2,400)	1	400Hz
400KGH	3 (2,530)	400	6X (2,400)	6X (2,400)	1	400Hz
400KGH	4 (2,840)	400	8X (3,200)	6X (2,400)	2	400Hz
400KGH	HI (3,420)	400	8X (3,200)	8X (3,200)	2	400Hz
250KH	LO (2,020)	250	6X (2,400)	8X (2,000)	1	400Hz
250KH	2 (2,225)	250	6X (2,400)	8X (2,000)	2	400Hz
250KH	3(2,530)	250	6X (2,400)	10X (2,500)	1	400Hz
250KH	4 (2,840)	250	8X (3,200)	10X (2,500)	2	400Hz

Table 320-B-22. AQB-A400 to AQB-A402 Conversion Settings - Continued

SPD AQB-A400 settings		SPD AQB-A402 equivalent settings (AC applications only)				
Trip unit type	Instantaneous pickup (AC amps)	Continuous current setting/ rating plug (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band	Frequency selector switch (CCS dial version only)
250KH	HI (3,420)	250	8X (3,200)	15X (3,750)	1	400Hz
300KH	LO (2,020)	300	6X (2,400)	6X (1,800)	2	400Hz
300KH	2 (2,225)	300	6X (2,400)	6X (1,800)	3	400Hz
300KH	3(2,530)	300	6X (2,400)	8X (2,400)	1	400Hz
300KH	4 (2,840)	300	8X (3,200)	10X (3,000)	1	400Hz
300KH	HI (3,420)	300	8X (3,200)	10X (3,000)	3	400Hz
350KH	LO (2,020)	350	6X (2,400)	6X (2,100)	1	400Hz
350KH	2 (2,225)	350	6X (2,400)	6X (2,100)	1	400Hz
350KH	3 (2,530)	350	6X (2,400)	8X (2,800)	1	400Hz
350KH	4 (2,840)	350	8X (3,200)	8X (2,800)	1	400Hz
350KH	HI (3,420)	350	8X (3,200)	10X (3,500)	1	400Hz
400KH	LO (2,020)	400	6X (2,400)	6X (2,400)	1	400Hz
400KH	2 (2,225)	400	6X (2,400)	6X (2,400)	1	400Hz
400KH	3(2,530)	400	6X (2,400)	6X (2,400)	1	400Hz
400KH	4 (2,840)	400	8X (3,200)	6X (2,400)	2	400Hz
400KH	HI (3,420)	400	8X (3,200)	8X (3,200)	2	400Hz
250KM	LO (3,190)	250	8X (3,200)	15X (3,750)	1	60Hz
250KM	2 (3,725)	250	10X (4,000)	15X (3,750)	1	60Hz
250KM	3 (4,325)	250	10X (4,000)	15X (3,750)	3	60Hz
250KM	4 (5,175)	250	12X (4,800)	15X (3,750)	3	60Hz
250KM	HI (5,820)	250	15X (6,000)	15X (3,750)	3	60Hz
300KM	LO (3,190)	300	8X (3,200)	15X (4,500)	1	60Hz
300KM	2 (3,725)	300	10X (4,000)	12X (3,600)	3	60Hz
300KM	3 (4,325)	300	10X (4,000)	15X (4,500)	1	60Hz
300KM	4 (5,175)	300	12X (4,800)	15X (4,500)	3	60Hz
300KM	HI (5,820)	300	15X (6,000)	15X (4,500)	3	60Hz
350KM	LO (3,190)	350	8X (3,200)	10X (3,500)	1	60Hz
350KM	2 (3,725)	350	10X (4,000)	10X (3,500)	3	60Hz
350KM	3 (4,325)	350	10X (4,000)	15X (5,250)	1	60Hz
350KM	4 (5,175)	350	12X (4,800)	15X (5,250)	1	60Hz
350KM	HI (5,820)	350	15X (6,000)	15X (5,250)	3	60Hz
400KM	LO (3,190)	400	8X (3,200)	8X (3,200)	2	60Hz
400KM	2 (3,725)	400	10X (4,000)	10X (4,000)	1	60Hz
400KM	3 (4,325)	400	10X (4,000)	10X (4,000)	3	60Hz
400KM	4 (5,175)	400	12X (4,800)	15X (6,000)	1	60Hz
400KM	HI (5,820)	400	15X (6,000)	15X (6,000)	1	60Hz

Table 320-B-23. AQB-LF400 to AQB-LF402 Conversion Settings

SPD AQB-LF400 settings		SPD AQB-LF402 equivalent settings			
Trip unit type	Instantaneous pickup (AC amps)	Continuous current setting/ rating plug (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
250T	LO (880)	250	3X (1,200)	3X (750)	3
250T	2 (1,035)	250	3X (1,200)	4X (1,000)	1
250T	3 (1,165)	250	3X (1,200)	6X (1,500)	1
250T	4 (1,325)	250	3X (1,200)	6X (1,500)	1
250T	HI (1,530)	250	4X (1,600)	6X (1,500)	2
300T	LO (1,380)	300	4X (1,600)	4X (1,200)	3
300T	2 (1,610)	300	4X (1,600)	6X (1,800)	1
300T	3 (1,820)	300	6X (2,400)	6X (1,800)	1
300T	4 (2,035)	300	6X (2,400)	6X (1,800)	3
300T	HI (2,280)	300	6X (2,400)	8X (2,400)	1
350T	LO (1,380)	350	4X (1,600)	4X (1,400)	1
350T	2 (1,610)	350	4X (1,600)	6X (2,100)	1
350T	3 (1,820)	350	6X (2,400)	6X (2,100)	1
350T	4 (2,035)	350	6X (2,400)	6X (2,100)	1
350T	HI (2,280)	350	6X (2,400)	6X (2,100)	1
400T	LO (1,380)	400	4X (1,600)	3X (1,200)	3
400T	2 (1,610)	400	4X (1,600)	4X (1,600)	1
400T	3 (1,820)	400	6X (2,400)	4X (1,600)	3
400T	4 (2,035)	400	6X (2,400)	6X (2,400)	1
400T	HI (2,280)	400	6X (2,400)	6X (2,400)	1
250TM	LO (3,190)	250	8X (3,200)	15X (3,750)	1
250TM	2 (3,725)	250	10X (4,000)	15X (3,750)	1
250TM	3 (4,325)	250	10X (4,000)	15X (3,750)	3
250TM	4 (5,175)	250	12X (4,800)	15X (3,750)	3
250TM	HI (5,825)	250	15X (6,000)	15X (3,750)	2
300TM	LO (3,190)	300	8X (3,200)	15X (4,500)	1
300TM	2 (3,725)	300	10X (4,000)	12X (3,600)	3
300TM	3 (4,325)	300	10X (4,000)	15X (4,500)	1
300TM	4 (5,175)	300	12X (4,800)	15X (4,500)	3
300TM	HI (5,825)	300	15X (6,000)	15X (4,500)	3
350TM	LO (3,190)	350	8X (3,200)	10X (3,500)	1
350TM	2 (3,725)	350	10X (4,000)	10X (3,500)	3
350TM	3 (4,325)	350	10X (4,000)	12X (4,200)	3
350TM	4 (5,175)	350	12X (4,800)	15X (5,250)	1
350TM	HI (5,825)	350	15X (6,000)	15X (5,250)	3
400TM	LO (3,190)	400	8X (3,200)	8X (3,200)	2
400TM	2 (3,725)	400	10X (4,000)	10X (4,000)	1
400TM	3 (4,325)	400	10X (4,000)	10X (4,000)	3
400TM	4 (5,175)	400	12X (4,800)	12X (4,800)	3
400TM	HI (5,825)	400	15X (6,000)	15X (6,000)	1

**Table 320-B-24.** AQB-LF400 to AQB-LL400/AQB-L400 Conversion Settings

SPD AQB-LF400 Settings		Cutler-Hammer AQB-L400/LL400 equivalent settings			
Trip unit type	Instantaneous pickup (AC amps)	Frame size	Rating plug (amps)	Short-time delay pickup (amps)	Short-time delay time band (see Note 1)
250T	LO (880)	L400QF	250Q	2 (860)	MIN
250T	2 (1,035)	L400QF	250Q	3 (1,070)	MIN
250T	3 (1,165)	L400QF	250Q	3 (1,070)	MIN
250T	4 (1,325)	L400QF	250Q	4 (1,280)	MIN
250T	HI (1,530)	L400QF	250Q	HI (1,500)	MIN
300T	LO (1,380)	L400QF	300Q	HI (1,500)	MIN
300T	2 (1,610)	L400QM	300Q	LO (1,700)	MIN
300T	3 (1,820)	L400QM	300Q	LO (1,700)	MIN
300T	4 (2,035)	L400QM	300Q	2 (2,075)	MIN
300T	HI (2,280)	L400QM	300Q	3 (2,450)	MIN
350T	LO (1,380)	L400QF	350Q	HI (1,500)	MIN
350T	2 (1,610)	L400QM	350Q	LO (1,700)	MIN
350T	3 (1,820)	L400QM	350Q	LO (1,700)	MIN
350T	4 (2,035)	L400QM	350Q	2 (2,075)	MIN
350T	HI (2,280)	L400QM	350Q	3 (2,450)	MIN
400T	LO (1,380)	L400QF	400Q	HI (1,500)	MIN
400T	2 (1,610)	L400QM	400Q	LO (1,700)	MIN
400T	3 (1,820)	L400QM	400Q	LO (1,700)	MIN
400T	4 (2,035)	L400QM	400Q	2 (2,075)	MIN
400T	HI (2,280)	L400QM	400Q	3 (2,450)	MIN
250TM	LO (3,190)	L400QM	250Q	HI (3,200)	MIN
250TM	2 (3,725)	LL400QS	250Q	LO (3,600)	MIN
250TM	3 (4,325)	LL400QS	250Q	1 (4,700)	MIN
250TM	4 (5,175)	LL400QS	250Q	3 (5,250)	MIN
250TM	HI (5,825)	LL400QS	250Q	HI (5,800)	MIN
300TM	LO (3,190)	L400QM	300Q	HI (3,200)	MIN
300TM	2 (3,725)	LL400QS	300Q	LO (3,600)	MIN
300TM	3 (4,325)	LL400QS	300Q	1 (4,700)	MIN
300TM	4 (5,175)	LL400QS	300Q	3 (5,250)	MIN
300TM	HI (5,825)	LL400QS	300Q	HI (5,800)	MIN
350TM	LO (3,190)	L400QM	350Q	HI (3,200)	MIN
350TM	2 (3,725)	LL400QS	350Q	LO (3,600)	MIN
350TM	3 (4,325)	LL400QS	350Q	1 (4,700)	MIN
350TM	4 (5,175)	LL400QS	350Q	3 (5,250)	MIN
350TM	HI (5,825)	LL400QS	350Q	HI (5,800)	MIN
400TM	LO (3,190)	L400QM	400Q	HI (3,200)	MIN
400TM	2 (3,725)	LL400QS	400Q	LO (3,600)	MIN
400TM	3 (4,325)	LL400QS	400Q	1 (4,700)	MIN
400TM	4 (5,175)	LL400QS	400Q	3 (5,250)	MIN
400TM	HI (5,825)	LL400QS	400Q	HI (5,800)	MIN

NOTES:  
1. "MIN" setting emulates an instantaneous function.

**Table 320-B-25.** AQB-A800 to AQB-A802 Conversion Settings

SPD AQB-A800 settings		SPD AQB-A802 equivalent settings			
Trip unit type	Instantaneous pickup (AC amps)	Rating plug (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
400U	LO (1,900)	400	3X (2,400)	4X (1,600)	3
400U	2 (2,300)	400	3X (2,400)	6X (2,400)	1
400U	3 (2,700)	400	4X (3,200)	6X (2,400)	3
400U	4 (3,100)	400	4X (3,200)	8X (3,200)	1
400U	HI (3,500)	400	4X (3,200)	8X (3,200)	3
400UH	LO (1,900)	400	3X (2,400)	4X (1,600)	3
400UH	2 (2,300)	400	3X (2,400)	6X (2,400)	1
400UH	3 (2,700)	400	4X (3,200)	6X (2,400)	3
400UH	4 (3,100)	400	4X (3,200)	8X (3,200)	1
400UH	HI (3,500)	400	4X (3,200)	8X (3,200)	3
400UM	LO (3,200)	400	4X (3,200)	8X (3,200)	1
400UM	2 (3,600)	400	5X (4,000)	8X (3,200)	3
400UM	3 (4,100)	400	5X (4,000)	10X (4,000)	1
400UM	4 (5,100)	400	6X (4,800)	10X (4,000)	3
400UM	HI (5,600)	400	8X (6,400)	10X (4,000)	3
500U	LO (1,900)	500	3X (2,400)	4X (2,000)	1
500U	2 (2,300)	500	3X (2,400)	4X (2,000)	3
500U	3 (2,700)	500	4X (3,200)	6X (3,000)	1
500U	4 (3,100)	500	4X (3,200)	6X (3,000)	1
500U	HI (3,500)	500	4X (3,200)	8X (4,000)	1
500UGH	LO (1,900)	500	3X (2,400)	4X (2,000)	1
500UGH	2 (2,300)	500	3X (2,400)	4X (2,000)	3
500UGH	3 (2,700)	500	4X (3,200)	6X (3,000)	1
500UGH	4 (3,100)	500	4X (3,200)	6X (3,000)	1
500UGH	HI (3,500)	500	4X (3,200)	8X (4,000)	1
500UH	LO (1,900)	500	3X (2,400)	4X (2,000)	1
500UH	2 (2,300)	500	3X (2,400)	4X (2,000)	3
500UH	3 (2,700)	500	4X (3,200)	6X (3,000)	1
500UH	4 (3,100)	500	4X (3,200)	6X (3,000)	1
500UH	HI (3,500)	500	4X (3,200)	8X (4,000)	1
500UM	LO (3,200)	500	4X (3,200)	6X (3,000)	2
500UM	2 (3,600)	500	5X (4,000)	8X (4,000)	1
500UM	3 (4,100)	500	5X (4,000)	8X (4,000)	1
500UM	4 (5,100)	500	6X (4,800)	10X (5,000)	1
500UM	HI (5,600)	500	8X (6,400)	10X (5,000)	3
600U	LO (1,900)	600	3X (2,400)	3X (1,800)	1
600U	2 (2,300)	600	3X (2,400)	4X (2,400)	1
600U	3 (2,700)	600	4X (3,200)	4X (2,400)	3
600U	4 (3,100)	600	4X (3,200)	6X (3,600)	1
600U	HI (3,500)	600	4X (3,200)	6X (3,600)	1
600UGH	LO (1,900)	600	3X (2,400)	3X (1,800)	1
600UGH	2 (2,300)	600	3X (2,400)	4X (2,400)	1
600UGH	3 (2,700)	600	4X (3,200)	4X (2,400)	3
600UGH	4 (3,100)	600	4X (3,200)	6X (3,600)	1
600UGH	HI (3,500)	600	4X (3,200)	6X (3,600)	1

**Table 320-B-25.** AQB-A800 to AQB-A802 Conversion Settings - Continued

SPD AQB-A800 settings		SPD AQB-A802 equivalent settings			
Trip unit type	Instantaneous pickup (AC amps)	Rating plug (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
600UH	LO (1,900)	600	3X (2,400)	3X (1,800)	1
600UH	2 (2,300)	600	3X (2,400)	4X (2,400)	1
600UH	3 (2,700)	600	4X (3,200)	4X (2,400)	3
600UH	4 (3,100)	600	4X (3,200)	6X (3,600)	1
600UH	HI (3,500)	600	4X (3,200)	6X (3,600)	1
600UM	LO (3,200)	600	4X (3,200)	6X (3,600)	1
600UM	2 (3,600)	600	5X (4,000)	6X (3,600)	1
600UM	3 (4,100)	600	5X (4,000)	6X (3,600)	3
600UM	4 (5,100)	600	6X (4,800)	8X (4,800)	3
600UM	HI (5,600)	600	8X (6,400)	10X (6,000)	1
800	LO (1,900)	800	3X (2,400)	2X (1,600)	3
800	2 (2,300)	800	3X (2,400)	3X (2,400)	1
800	3 (2,700)	800	4X (3,200)	3X (2,400)	3
800	4 (3,100)	800	4X (3,200)	4X (3,200)	1
800	HI (3,500)	800	4X (3,200)	4X (3,200)	3
800U	LO (3,200)	800	4X (3,200)	4X (3,200)	1
800U	2 (3,600)	800	5X (4,000)	4X (3,200)	3
800U	3 (4,100)	800	5X (4,000)	4X (3,200)	3
800U	4 (5,100)	800	6X (4,800)	6X (4,800)	3
800U	HI (5,600)	800	8X (6,400)	6X (4,800)	3
800UM	LO (5,000)	800	6X (4,800)	6X (4,800)	1
800UM	2 (6,100)	800	8X (6,400)	8X (6,400)	1
800UM	3 (6,700)	800	8X (6,400)	8X (6,400)	1
800UM	4 (7,400)	800	10X (8,000)	8X (6,400)	3
800UM	HI (8,000)	800	10X (8,000)	10X (8,000)	1

**Table 320-B-26.** AQB-A1600 to AQB-A1604 Conversion Settings

SPD AQB-A1600 settings		SPD AQB-A1604 equivalent settings			
Trip unit type	Instantaneous pickup (AC amps)	Rating plug (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
600Y	LO (2,000)	600	3X (4,800)	3X (1,800)	3
600Y	2 (3,000)	600	3X (4,800)	4X (2,400)	3
600Y	3 (4,000)	600	3X (4,800)	6X (2,600)	3
600Y	4 (5,000)	600	3X (4,800)	8X (4,800)	3
600Y	HI (6,000)	600	4X (6,400)	10X (6,000)	1
600YM	LO (4,000)	600	3X (4,800)	3X (1,800)	1
600YM	2 (6,000)	600	4X (6,400)	4X (2,400)	3
600YM	3 (8,000)	600	5X (8,000)	6X (3,600)	1
600YM	4 (10,000)	600	6X (9,600)	8X (4,800)	1
600YM	HI (12,000)	600	8X (12,800)	8X (4,800)	3
800Y	LO (2,000)	800	3X (4,800)	2X (1,600)	3
800Y	2 (3,000)	800	3X (4,800)	4X (3,200)	1



**Table 320-B-26.** AQB-A1600 to AQB-A1604 Conversion Settings -

Continued

SPD AQB-A1600 settings		SPD AQB-A1604 equivalent settings			
Trip unit type	Instantaneous pickup (AC amps)	Rating plug (amps)	Instantaneous pickup (amps)	Short-time delay pickup (amps)	Short-time delay time band
800Y	3 (4,000)	800	3X (4,800)	4X (3,200)	3
800Y	4 (5,000)	800	3X (4,800)	6X (4,800)	3
800Y	HI (6,000)	800	4X (6,400)	8X (6,400)	1
1000Y	LO (2,000)	1000	3X (4,800)	2X (2,000)	1
1000Y	2 (3,000)	1000	3X (4,800)	3X (3,000)	1
1000Y	3 (4,000)	1000	3X (4,800)	4X (4,000)	1
1000Y	4 (5,000)	1000	3X (4,800)	6X (6,000)	1
1000Y	HI (6,000)	1000	4X (6,400)	6X (6,000)	1
1200Y	LO (2,000)	1200	3X (4,800)	2X (2,400)	1
1200Y	2 (3,000)	1200	3X (4,800)	2X (2,400)	3
1200Y	3 (4,000)	1200	3X (4,800)	3X (3,600)	3
1200Y	4 (5,000)	1200	3X (4,800)	4X (4,800)	3
1200Y	HI (6,000)	1200	4X (6,400)	6X (7,200)	1
1400Y	LO (4,000)	1400	3X (4,800)	3X (4,200)	1
1400Y	2 (6,000)	1400	4X (6,400)	4X (5,600)	3
1400Y	3 (8,000)	1400	5X (8,000)	6X (8,400)	1
1400Y	4 (10,000)	1400	6X (9,600)	8X (11,200)	1
1400Y	HI (12,000)	1400	8X (12,800)	8X (11,200)	3
1600Y	LO (4,000)	1600	3X (4,800)	2X (3,200)	3
1600Y	2 (6,000)	1600	4X (6,400)	4X (6,400)	1
1600Y	3 (8,000)	1600	5X (8,000)	6X (9,600)	1
1600Y	4 (10,000)	1600	6X (9,600)	6X (9,600)	3
1600Y	HI (12,000)	1600	8X (12,800)	8X (12,800)	1

**320-B.5 AQB/NQB CIRCUIT BREAKER OBSOLESCENCE/REPLACEMENT MATRIX.****320-B.5.1 PURPOSE AND OTHER CONSIDERATIONS.**

- a. The matrix is comprised of tables that provide detailed replacement circuit breaker information for specific non-nuclear applications in the fleet. The matrix covers obsolete SPD AQB/NQB frame sizes from 100 amp (AQB-A101 and NQB-A101 designs) through 1600 amps (AQB-A1600 and NQB-A1600 designs).
- b. The key to using the matrix is to determine the APL number for the obsolete circuit breaker. Once the APL is determined, the user can locate it in the matrix and access replacement information. To help locate the APL in the matrix, each frame size has a corresponding table that shows a numbered list of obsolete APLs sorted by platform applicability.

**320-B.5.2 HOW TO USE OBSOLESCENCE MATRIX.** Use the following procedure when determining a replacement for an obsolete SPD AQB/NQB circuit breaker:

- a. Determine the obsolete circuit breaker part number and NSN from label plate or other documentation.

- b. Determine the APL number based on circuit breaker part number and NSN.
- c. Locate the APL number in one of the following tables depending on the circuit breaker frame size:
- [Table 320-B-27](#). List of obsolete SPD AQB/NQB-A101 circuit breaker APLs across platforms.
  - [Table 320-B-33](#). List of obsolete SPD AQB/NQB-250 circuit breaker APLs across platforms.
  - [Table 320-B-41](#). List of obsolete SPD AQB/NQB-400 circuit breaker APLs across platforms.
  - [Table 320-B-49](#). List of obsolete SPD AQB/NQB-800 circuit breaker APLs across platforms.
  - [Table 320-B-53](#). List of obsolete SPD AQB/NQB-1600 circuit breaker APLs across platforms.
- d. The APL number in the tables listed above have an entry number in parentheses. Use the entry number to help locate the applicable table that provides detailed replacement circuit breaker information.

**320-B.5.2.1 Example of How to Use Obsolescence Matrix.** As an example of the procedure above, consider a scenario where an obsolete SPD AQB-LF250 thermal magnetic circuit breaker installed in the field has just failed. Ships force determines that no spares are available and the circuit breaker cannot be repaired. To ensure that a proper replacement circuit breaker is ordered, ships force takes the following actions:

- a. Determines that the failed AQB-LF250 circuit breaker label plate indicates part number ETN5305-00S36, NSN 5925-01-211-5051.
- b. Based on circuit breaker part number and NSN, determines that APL 140302126 applies to the failed AQB-LF250 circuit breaker.
- c. Consults [Table 320-B-33](#) (List of obsolete SPD AQB/NQB-250 circuit breaker APLs across platforms) of this appendix and locates APL 140302126 as entry number 7 in the list of “Surface Unique” APLs.
- d. Locates the replacement circuit breaker information for APL 140302126 in [Table 320-B-35](#) (Obsolete Surface Unique AQB/NQB-250 breakers and replacements).

**Table 320-B-27.** List of Obsolete SPD AQB/NQB-A101 Circuit Breaker APLs Across Platforms

Carrier Unique	Surface Unique	Sub Unique	Carrier Surface Sub	Carrier Surface	Carrier Sub	Surface Sub
(1) 140301441	(1) 140302072	(1) T140302097	(1) 140301816	(1) 140301920	N/A	N/A
(2) 140301627	(2) 140302073	(2) T140302346	(2) 140302067	(2) 140302075		
(3) 140301837	(3) 140302074	(3) T149990072	(3) 149990062	(3) 140302101		
(4) 140301844	(4) 140302096		(4) 149990064	(4) 140302162		
(5) 140301844R	(5) 140302133		(5) 149990065	(5) 149990063		
(6) 140301976	(6) 140302160		(6) 149990066	(6) 149990069		
(7) 140302070	(7) 140302166		(7) 149990068	(7) 149990070		
(8) 149990062R	(8) 140302175		(8) 149990146	(8) 149990071		
(9) 149990063R	(9) 140302189			(9) 149990072		
(10) 149990064R	(10) 140308004			(10) 149990073		
(11) 149990065R				(11) 149990116		
(12) 149990066R				(12) 149990118		
(13) 149990119				(13) 149990121		
(14) 149990123				(14) 149990124		
(15) 149990125						
(16) 149990126						
(17) 149990127						

**Table 320-B-28.** Obsolete Carrier Unique AQB/NQB-A101 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Carrier Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301441	ET68318	0000-LL-CA8-5302	A101	75 (60 Hz and DC)	May have 1a, 1b aux switch, may have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (1) - Carrier Unique AQB/NQB-A101					
<p>NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED AND WHETHER OR NOT AN AUX SWITCH IS INSTALLED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR AC BREAKER APPLICATIONS WITHOUT AUX SWITCH AND WITH OR WITHOUT FUSE:  1). AQB-A101, APL 149990065, NSN 5925-01-136-5633, P/N S458D509G14, THERMAL MAGNETIC WITH TRIP UNIT TYPE 75, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).  2). AQB-A102 (TYPE E1), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.</p> <p>B. FOR AC BREAKER APPLICATIONS WITH 1A, 1B AUX SWITCH AND WITH OR WITHOUT FUSE:  1). AQB-A101, APL 14A090023, NSN 5925-01-574-0171, P/N 82E8762, THERMAL MAGNETIC WITH TRIP UNIT TYPE 75, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.  2). AQB-A102 (TYPE E1), APL 14A050082, NSN 5925-01-469-8053, P/N ETN286010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.</p> <p>C. FOR DC BREAKER APPLICATIONS WITHOUT AUX SWITCH:  AQB-A101, APL 149990065, NSN 5925-01-136-5633, P/N S458D509G14, THERMAL MAGNETIC WITH TRIP UNIT TYPE 75, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</p> <p>D. FOR DC BREAKER APPLICATIONS WITH 1A, 1B AUX SWITCH:  AQB-A101, APL 14A090023, NSN 5925-01-574-0171, P/N 82E8762, THERMAL MAGNETIC WITH TRIP UNIT TYPE 75, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>THE OBSOLETE SPD BREAKER (IF SUPPLIED WITH 1A, 1B AUX SWITCH) AND THE REPLACEMENT BREAKERS WITH AUX SWITCH CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO <a href="#">TABLE 320-B-2</a>).</p>					

**Table 320-B-28.** Obsolete Carrier Unique AQB/NQB-A101 Breakers and  
Replacements - Continued

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (2) - Carrier Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301627	ET84265	5925-00-063-8996	A101	50H (400 Hz)	120Vdc shunt trip, shunt trip cut-off switch
REPLACEMENT BREAKER INFO (2) - Carrier Unique AQB/NQB-A101					
NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. AQB-A101, APL 14A090030, NSN 5925-01-194-3981, P/N 5682D24G03, THERMAL MAGNETIC WITH TRIP UNIT TYPE 50H, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.					
B. AQB-A102 (TYPE E2), APL 14A050087, NSN 5925-01-513-7622, P/N ETN286500S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.					
C. AQB-A102 (TYPE E1), APL 14A050081, NSN 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
A. THE OBSOLETE SPD BREAKER AND THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO <a href="#">TABLE 320-B-2</a> ). REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.4.2.b</a> OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD AQB-A102 BREAKERS.					
B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.4.2.1</a> AND <a href="#">TABLE 320-B-2</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (3) - Carrier Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES

**Table 320-B-28.** Obsolete Carrier Unique AQB/NQB-A101 Breakers and  
Replacements - Continued

140301837	ETN277300S22	0000-LL-CJ2-6786	A101	75H (400 Hz)	120Vdc shunt trip, shunt trip cut-off switch
REPLACEMENT BREAKER INFO (3) - Carrier Unique AQB/NQB-A101					
<p>NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. AQB-A101, APL 14A070138, NSN 5925-01-560-8510, P/N 5682D24G28, THERMAL MAGNETIC WITH TRIP UNIT TYPE 75H, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>B. AQB-A102 (TYPE E1), APL 14A050081, NSN 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER AND THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO <a href="#">TABLE 320-B-2</a>). REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.4.2.b</a> OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD AQB-A102 BREAKERS.</p> <p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.4.2.1</a> AND <a href="#">TABLE 320-B-2</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (4) - Carrier Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301844	ETN2762	5925-00-139-1698	A101	50I (60 Hz and DC)	May have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (4) - Carrier Unique AQB/NQB-A101					
<p>NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT FOR AC (WITH OR WITHOUT FUSE) AND DC APPLICATIONS. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>AQB-A101, APL 14A090002, NSN 5925-00-546-3258, P/N 458D511G13, MAGNETIC ONLY WITH TRIP UNIT TYPE 50I, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</p>					

**Table 320-B-28.** Obsolete Carrier Unique AQB/NQB-A101 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET MAGNETIC BREAKER, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (5) - Carrier Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301844R	ETN2762	5925-00-139-1698	A101	50I (60 Hz and DC)	May have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (5) - Carrier Unique AQB/NQB-A101					
NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT FOR AC (WITH OR WITHOUT FUSE) AND DC APPLICATIONS. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
AQB-A101, APL 14A090002, NSN 5925-00-546-3258, P/N 458D511G13, MAGNETIC ONLY WITH TRIP UNIT TYPE 50I, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET MAGNETIC BREAKER, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (6) - Carrier Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301976	ETN2760	5925-00-397-8258	A101	15I (60 Hz and DC)	May have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (6) - Carrier Unique AQB/NQB-A101					
NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT FOR AC (WITH OR WITHOUT FUSE) AND DC APPLICATIONS. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
AQB-A101, APL 140301976, NSN 5925-00-397-8258, P/N 458D511G11, MAGNETIC ONLY WITH TRIP UNIT TYPE 15I, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					

**Table 320-B-28.** Obsolete Carrier Unique AQB/NQB-A101 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET MAGNETIC BREAKER, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (7) - Carrier Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302070	ETN276410	5925-00-521-2526	A101	100I (60 Hz and DC)	1a, 1b aux switch, may have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (7) - Carrier Unique AQB/NQB-A101					
NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT FOR AC (WITH OR WITHOUT FUSE) AND DC APPLICATIONS. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
AQB-A101, APL 14A090003, NSN 5925-01-144-6567, P/N 58E6600, MAGNETIC ONLY WITH TRIP UNIT TYPE 100I, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET MAGNETIC BREAKER, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
THE OBSOLETE SPD BREAKER AND THE CUTLER-HAMMER REPLACEMENT BREAKER CITED ABOVE HAVE THREE LEADS ("A" CONTACT, "B" CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO <a href="#">TABLE 320-B-2</a> ).					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (8) - Carrier Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990062R	ETN2750	5925-00-876-9216	A101	15 (60 Hz and DC)	May have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (8) - Carrier Unique AQB/NQB-A101					

**Table 320-B-28.** Obsolete Carrier Unique AQB/NQB-A101 Breakers and Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):

- 1). AQB-A101, APL 140902562, NSN 5925-00-876-9216, P/N 458D509G11, THERMAL MAGNETIC WITH TRIP UNIT TYPE 15, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- 2). AQB-A102 (TYPE E2), APL 14A050086, NSN 5925-01-513-7619, P/N ETN2865, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- 3). AQB-A102 (TYPE E1), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- 4). AQB-A103, APL 14A030028, NSN 5925-01-455-8639, P/N 1376D96G01, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY CUTLER-HAMMER.

B. FOR DC BREAKER APPLICATIONS:

AQB-A101, APL 140902562, NSN 5925-00-876-9216, P/N 458D509G11, THERMAL MAGNETIC WITH TRIP UNIT TYPE 15, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (9) - Carrier Unique AQB/NQB-A101

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990063R	ETN2751	5925-00-876-9217	A101	25 (60 Hz and DC)	May have fuse for 60 Hz applications

REPLACEMENT BREAKER INFO (9) - Carrier Unique AQB/NQB-A101

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:



**Table 320-B-28.** Obsolete Carrier Unique AQB/NQB-A101 Breakers and  
Replacements - Continued

<p>A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):</p> <p>1). AQB-A101, APL 140902994, NSN 5925-00-876-9217, P/N S458D509G12, THERMAL MAGNETIC WITH TRIP UNIT TYPE 25, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</p> <p>2). AQB-A102 (TYPE E1), APL 14A050086, NSN 5925-01-513-7619, P/N ETN2865, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.</p> <p>3). AQB-A102 (TYPE E2), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.</p> <p>4). AQB-A103, APL 14A030028, NSN 5925-01-455-8639, P/N 1376D96G01, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY CUTLER-HAMMER.</p> <p>B. FOR DC BREAKER APPLICATIONS: AQB-A101, APL 140902994, NSN 5925-00-876-9217, P/N S458D509G12, THERMAL MAGNETIC WITH TRIP UNIT TYPE 25, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (10) - Carrier Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990064R	ETN2752	5295-00-876-9218	A101	50 (60 Hz and DC)	May have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (10) - Carrier Unique AQB/NQB-A101					
<p>NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):</p> <p>1). AQB-A101, APL 149990064, NSN 5925-00-876-9218, P/N S458D509G13, THERMAL MAGNETIC WITH TRIP UNIT TYPE 50, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</p> <p>2). AQB-A102 (TYPE E2), APL 14A050086, NSN 5925-01-513-7619, P/N ETN2865, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.</p> <p>3). AQB-A102 (TYPE E1), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.</p> <p>4). AQB-A103, APL 14A030029, NSN 5925-01-455-8635, P/N 1376D96G02, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY CUTLER-HAMMER.</p> <p>B. FOR DC BREAKER APPLICATIONS: AQB-A101, APL 149990064, NSN 5925-00-876-9218, P/N S458D509G13, THERMAL MAGNETIC WITH TRIP UNIT TYPE 50, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</p>					

**Table 320-B-28. Obsolete Carrier Unique AQB/NQB-A101 Breakers and  
Replacements - Continued**

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (11) - Carrier Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
14999065R	ETN2753	5925-01-136-5633	A101	75 (60 Hz and DC)	May have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (11) - Carrier Unique AQB/NQB-A101					
NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):					
1). AQB-A101, APL 149990065, NSN 5925-01-136-5633, P/N S458D509G14, THERMAL MAGNETIC WITH TRIP UNIT TYPE 75, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
2). AQB-A102 (TYPE E1), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.					
B. FOR DC BREAKER APPLICATIONS:					
AQB-A101, APL 149990065, NSN 5925-01-136-5633, P/N S458D509G14, THERMAL MAGNETIC WITH TRIP UNIT TYPE 75, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (12) - Carrier Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990066R	ETN2754	5925-01-318-4436	A101	100 (60 Hz and DC)	May have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (12) - Carrier Unique AQB/NQB-A101					

**Table 320-B-28.** Obsolete Carrier Unique AQB/NQB-A101 Breakers and Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):

- 1). AQB-A101, APL 149990066, NSN 5925-00-876-9220, P/N S458D509G15, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- 2). AQB-A102 (TYPE E2), APL 14A050086, NSN 5925-01-513-7619, P/N ETN2865, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- 3). AQB-A102 (TYPE E2), APL 14A050086, NSN 5925-01-513-7619, P/N ETN2865, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- 4). AQB-A103, APL 14A030029, NSN 5925-01-455-8635, P/N 1376D96G02, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY CUTLER-HAMMER.

B. FOR DC BREAKER APPLICATIONS:

AQB-A101, APL 149990066, NSN 5925-00-876-9220, P/N S458D509G15, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (13) - Carrier Unique AQB/NQB-A101

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990119	ET74421	5925-00-728-6605	A101	50H (400 Hz)	120Vdc shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (13) - Carrier Unique AQB/NQB-A101

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

- A. AQB-A101, APL 149990119, NSN 5925-00-728-6605, P/N S5682D24G27, THERMAL MAGNETIC WITH TRIP UNIT TYPE 50H, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- B. AQB-A102 (TYPE E2), APL 14A050087, NSN 5925-01-513-7622, P/N ETN286500S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- C. AQB-A102 (TYPE E1), APL 14A050081, NSN 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

**Table 320-B-28.** Obsolete Carrier Unique AQB/NQB-A101 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-2](#)). REFER TO [PARAGRAPH 320-B.3.2.1.4.2.b](#) OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD AQB-A102 BREAKERS.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.2.1.4.2.1](#) AND [TABLE 320-B-2](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (14) - Carrier Unique AQB/NQB-A101

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990123	ET74431	5925-00-111-4879	A101	15H (400 Hz)	115Vac, 400 Hz shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (14) - Carrier Unique AQB/NQB-A101

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. AQB-A101, APL 14A070137, NSN 5925-01-560-8464, P/N 83E3797 (SPECIFICALLY REQUEST 400 HZ SHUNT TRIP), THERMAL MAGNETIC WITH TRIP UNIT TYPE 15H, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

B. AQB-A102 (TYPE E2), APL 14A050087, NSN 5925-01-513-7622, P/N ETN286500S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

C. AQB-A102 (TYPE E1), APL 14A050081, NSN 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

**Table 320-B-28.** Obsolete Carrier Unique AQB/NQB-A101 Breakers and  
Replacements - Continued

A. THE OBSOLETE SPD BREAKER AND THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-2](#)). REFER TO [PARAGRAPH 320-B.3.2.1.4.2.b](#) OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD AQB-A102 BREAKERS.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.2.1.4.2.1](#) AND [TABLE 320-B-2](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (15) - Carrier Unique AQB/NQB-A101

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990125	ET74433	5925-00-014-6540	A101	50H (400 Hz)	115Vac, 400 Hz shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (15) - Carrier Unique AQB/NQB-A101

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. AQB-A101, APL 14A070140, NSN 5925-01-560-8537, P/N 5682D24G38/176C615G05 (SPECIFICALLY REQUEST 400 HZ SHUNT TRIP), THERMAL MAGNETIC WITH TRIP UNIT TYPE 50H, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

B. AQB-A102 (TYPE E2), APL 14A050087, NSN 5925-01-513-7622, P/N ETN286500S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

C. AQB-A102 (TYPE E1), APL 14A050081, NSN 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-2](#)). REFER TO [PARAGRAPH 320-B.3.2.1.4.2.b](#) OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD AQB-A102 BREAKERS.

**Table 320-B-28.** Obsolete Carrier Unique AQB/NQB-A101 Breakers and Replacements - Continued

<p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.4.2.1</a> AND <a href="#">TABLE 320-B-2</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p>					
<p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
<p>OBSOLETE BREAKER INFO (16) - Carrier Unique AQB/NQB-A101</p>					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990126	ET74433	5925-00-929-3976	A101	75H (400 Hz)	115Vac, 400 Hz shunt trip, shunt trip cut-off switch
<p>REPLACEMENT BREAKER INFO (16) - Carrier Unique AQB/NQB-A101</p>					
<p>NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. AQB-A101, APL 14A070136, NSN 5925-01-560-8460, P/N 83E2952 (SPECIFICALLY REQUEST 400 HZ SHUNT TRIP), THERMAL MAGNETIC WITH TRIP UNIT TYPE 75H, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>B. AQB-A102 (TYPE E1), APL 14A050081, NSN 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER AND THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO <a href="#">TABLE 320-B-2</a>). REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.4.2.b</a> OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD AQB-A102 BREAKERS.</p> <p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.4.2.1</a> AND <a href="#">TABLE 320-B-2</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
<p>OBSOLETE BREAKER INFO (17) - Carrier Unique AQB/NQB-A101</p>					

**Table 320-B-28.** Obsolete Carrier Unique AQB/NQB-A101 Breakers and  
Replacements - Continued

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990127	ET74435	5925-00-014-6541	A101	100H (400 Hz)	115Vac, 400 Hz shunt trip, shunt trip cut-off switch
REPLACEMENT BREAKER INFO (17) - Carrier Unique AQB/NQB-A101					
<p>NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. AQB-A101, APL 14A070139, NSN 5925-01-560-8700, P/N 5682D24G40/176C615G05 (SPECIFICALLY REQUEST 400 HZ SHUNT TRIP), THERMAL MAGNETIC WITH TRIP UNIT TYPE 100H, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>B. AQB-A102 (TYPE E2), APL 14A050087, NSN 5925-01-513-7622, P/N ETN286500S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>C. AQB-A102 (TYPE E1), APL 14A050081, NSN 9N 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER AND THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO <a href="#">TABLE 320-B-2</a>). REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.4.2.b</a> OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD AQB-A102 BREAKERS.</p> <p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.4.2.1</a> AND <a href="#">TABLE 320-B-2</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					

**Table 320-B-29.** Obsolete Surface Unique AQB/NQB-A101 Breakers and  
Replacements

OBSOLETE BREAKER INFO (1) - Surface Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES

**Table 320-B-29.** Obsolete Surface Unique AQB/NQB-A101 Breakers and  
Replacements - Continued

140302072	ETN274311	5925-01-093-4981	A101	75 (60 Hz and DC)	2a, 2b aux switch, may have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (1) - Surface Unique AQB/NQB-A101					
<p>NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED AND WHETHER OR NOT AN AUX SWITCH IS INSTALLED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR AC BREAKER APPLICATIONS WITHOUT AUX SWITCH AND WITH OR WITHOUT FUSE:  1). AQB-A101, APL 14A070141, NSN 5925-01-560-8703, P/N 458D509G14/369D074G08, THERMAL MAGNETIC WITH TRIP UNIT TYPE 75, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.  2). -A102 (TYPE E1), APL 14A050083, NSN 5925-01-187-0695, P/N ETN286020, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.</p> <p>B. FOR DC BREAKER APPLICATIONS:  AQB-A101, APL 14A070141, NSN 5925-01-560-8703, P/N 458D509G14/369D074G08, THERMAL MAGNETIC WITH TRIP UNIT TYPE 75, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE SIX AUX SWITCH LEADS WIRED OUT: THREE LEADS ("A" CONTACT, "B" CONTACT, AND COMMON) FOR EACH 1A, 1B AUX SWITCH (REFER TO <a href="#">TABLE 320-B-2</a>).</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (2) - Surface Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302073	ETN274411	5925-01-093-4981	A101	100 (60 Hz and DC)	2a, 2b aux switch, may have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (2) - Surface Unique AQB/NQB-A101					
<p>NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p>					



**Table 320-B-29.** Obsolete Surface Unique AQB/NQB-A101 Breakers and  
Replacements - Continued

<p>A. FOR AC BREAKER APPLICATIONS WITHOUT AUX SWITCH AND WITH OR WITHOUT FUSE:</p> <p>1). AQB-A101, APL 14A070142, NSN 5925-01-560-8784, P/N 83E9273, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.</p> <p>2). AQB-A102 (TYPE E2), APL 14A050089, NSN 5925-01-536-7119, P/N ETN286520, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.</p> <p>3). AQB-A102 (TYPE E1), APL 14A050083, NSN 5925-01-187-0695, P/N ETN286020, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.</p> <p>B. FOR DC BREAKER APPLICATIONS: AQB-A101, APL 14A070142, NSN 5925-01-560-8784, P/N 83E9273, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE SIX AUX SWITCH LEADS WIRED OUT: THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) FOR EACH 1A, 1B AUX SWITCH (REFER TO <a href="#">TABLE 320-B-2</a>).</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (3) - Surface Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302074	ETN274211	5925-01-192-1452	A101	50 (60 Hz and DC)	2a, 2b aux switch, may have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (3) - Surface Unique AQB/NQB-A101					
<p>NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p>					

**Table 320-B-29.** Obsolete Surface Unique AQB/NQB-A101 Breakers and Replacements - Continued

A. FOR AC BREAKER APPLICATIONS WITHOUT AUX SWITCH AND WITH OR WITHOUT FUSE:  
 1). AQB-A101, APL 14A070143, NSN 5925-01-560-8588, P/N 82E0319, THERMAL MAGNETIC WITH TRIP UNIT TYPE 50, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.  
 2). AQB-A102 (TYPE E2), APL 14A050089, NSN 5925-01-536-7119, P/N ETN286520, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.  
 3). AQB-A102 (TYPE E1), APL 14A050083, NSN 5925-01-187-0695, P/N ETN286020, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.

B. FOR DC BREAKER APPLICATIONS:  
 AQB-A101, APL 14A070143, NSN 5925-01-560-8588, P/N 82E0319, THERMAL MAGNETIC WITH TRIP UNIT TYPE 50, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE SIX AUX SWITCH LEADS WIRED OUT: THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) FOR EACH 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-2](#)).

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (4) - Surface Unique AQB/NQB-A101

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302096	ETN274200S01	5925-00-813-2474	A101	50 (60 Hz and DC)	115Vac, 60 Hz shunt trip, shunt trip cut-off switch, may have fuse for 60 Hz applications

REPLACEMENT BREAKER INFO (4) - Surface Unique AQB/NQB-A101

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT FOR AC (WITH OR WITHOUT FUSE) AND DC APPLICATIONS. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-29.** Obsolete Surface Unique AQB/NQB-A101 Breakers and  
Replacements - Continued

<p>A. FOR AC BREAKER APPLICATIONS WITHOUT AUX SWITCH AND WITH OR WITHOUT FUSE:</p> <p>1). AQB-A101, APL 140902879, NSN 5925-00-813-2474, P/N 458D509G13/4976D65G06, THERMAL MAGNETIC WITH TRIP UNIT TYPE 50, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>2). AQB-A102 (TYPE E2), APL 14A050087, NSN 5925-01-513-7622, P/N ETN286500S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>3). AQB-A102 (TYPE E1), APL 14A050081, NSN 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>4). AQB-A103, APL 14A050002, NSN 5925-01-482-1134, P/N 1376D96G08, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY CUTLER-HAMMER. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>B. FOR DC BREAKER APPLICATIONS: AQB-A101, APL 140902879, NSN 5925-00-813-2474, P/N 458D509G13/4976D65G06, THERMAL MAGNETIC WITH TRIP UNIT TYPE 50, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER, THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER, AND THE CUTLER-HAMMER ELECTRONIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO <a href="#">TABLE 320-B-2</a>). REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.4.2.b</a> OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD AQB-A102 BREAKERS.</p> <p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.4.2.1</a> AND <a href="#">TABLE 320-B-2</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (5) - Surface Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302133	ETN275001	NO NSN ON APL	A101	15 (60 Hz and DC)	1a, 1b aux switch, may have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (5) - Surface Unique AQB/NQB-A101					

**Table 320-B-29.** Obsolete Surface Unique AQB/NQB-A101 Breakers and Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):

- 1). AQB-A101, APL 14A090004, NSN 5925-00-100-0102, P/N 63E3175, THERMAL MAGNETIC WITH TRIP UNIT TYPE 15, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.
- 2). AQB-A102 (TYPE E2), APL 14A050088, NSN 5925-01-536-6647, P/N ETN286510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.
- 3). AQB-A102 (TYPE E1), APL 14A050082, NSN 5925-01-469-8053, P/N ETN286010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.

B. FOR DC BREAKER APPLICATIONS:

AQB-A101, APL 14A090004, NSN 5925-00-100-0102, P/N 63E3175, THERMAL MAGNETIC WITH TRIP UNIT TYPE 15, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-2](#)).

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (6) - Surface Unique AQB/NQB-A101

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302160	ETN275500S01	5930-01-197-4752	NQB-A101	N/A	115Vac, 60 Hz shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (6) - Surface Unique AQB/NQB-A101

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-29.** Obsolete Surface Unique AQB/NQB-A101 Breakers and  
Replacements - Continued

A. FOR AC BREAKER APPLICATIONS:

- 1). NQB-A101, APL 140902943, NSN 5930-01-197-4752, P/N 5682D24G19, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). NQB-A102, APL 14A050084, NSN 5930-01-197-4752, P/N ETN286200S00, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

B. FOR DC BREAKER APPLICATIONS:

NQB-A101, APL 140902943, NSN 5930-01-197-4752, P/N 5682D24G19, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE CUTLER-HAMMER REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-2](#)). REFER TO [PARAGRAPH 320-B.3.2.1.4.2.b](#) OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD NQB-A102 BREAKERS.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.2.1.4.2.1](#) AND [TABLE 320-B-2](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (7) - Surface Unique AQB/NQB-A101

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302166	ETN277400S01	5925-00-270-1704	A101	100H (400 Hz only)	115Vac, 60 Hz shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (7) - Surface Unique AQB/NQB-A101

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-29.** Obsolete Surface Unique AQB/NQB-A101 Breakers and Replacements - Continued

- A. AQB-A101, APL 14A090008, NSN 5925-01-293-9163, P/N 5682D24G40, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100H, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- B. AQB-A102 (TYPE E2), APL 14A050087, NSN 5925-01-513-7622, P/N ETN286500S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- C. AQB-A102 (TYPE E1), APL 14A050081, NSN 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-2](#)). REFER TO [PARAGRAPH 320-B.3.2.1.4.2.b](#) OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD NQB-A102 BREAKERS.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.2.1.4.2.1](#) AND [TABLE 320-B-2](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (8) - Surface Unique AQB/NQB-A101

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302175	ETN275010	5925-01-139-3139	A101	15 (60 Hz and DC)	1a, 1b aux switch, may have fuse for 60 Hz applications

REPLACEMENT BREAKER INFO (8) - Surface Unique AQB/NQB-A101

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-29.** Obsolete Surface Unique AQB/NQB-A101 Breakers and  
Replacements - Continued

<p>A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):</p> <p>1). AQB-A101, APL 14A090004, NSN 5925-00-100-0102, P/N 63E3175, THERMAL MAGNETIC WITH TRIP UNIT TYPE 15, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.</p> <p>2). AQB-A102 (TYPE E2), APL 14A050088, NSN 5925-01-536-6647, P/N ETN286510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.</p> <p>3). AQB-A102 (TYPE E1), APL 14A050082, NSN 5925-01-469-8053, P/N ETN286010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.</p> <p>B. FOR DC BREAKER APPLICATIONS: AQB-A101, APL 14A090004, NSN 5925-00-100-0102, P/N 63E3175, THERMAL MAGNETIC WITH TRIP UNIT TYPE 15, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO <a href="#">TABLE 320-B-2</a>).</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (9) - Surface Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302189	ETN275410	5925-01-204-6096	A101	100 (60 Hz and DC)	1a, 1b aux switch, may have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (9) - Surface Unique AQB/NQB-A101					
<p>NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p>					

**Table 320-B-29. Obsolete Surface Unique AQB/NQB-A101 Breakers and Replacements - Continued**

A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):

- 1). AQB-A101, APL 14A090005, NSN 5925-01-350-5333, P/N 83E2444, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.
- 2). AQB-A102 (TYPE E2), APL 14A050088 (TYPE E2), NSN 5925-01-536-6647, P/N ETN286510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.
- 3) AQB-A102 (TYPE E1), APL 14A050082, NSN 5925-01-469-8053, P/N ETN286010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.

B. FOR DC BREAKER APPLICATIONS:  
 AQB-A101, APL 14A090005, NSN 5925-01-350-5333, P/N 83E2444, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-2](#)).

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**OBSOLETE BREAKER INFO (10) - Surface Unique AQB/NQB-A101**

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140308004	ET86020	5925-00-106-7185	A101	100 (60 Hz and DC)	May have fuse for 60 Hz applications

**REPLACEMENT BREAKER INFO (10) - Surface Unique AQB/NQB-A101**

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):

- 1). AQB-A101, APL 149990066, NSN 5925-00-876-9220, P/N S458D509G15, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- 2). AQB-A102 (TYPE E2), APL 14A050086, NSN 5925-01-513-7619, P/N ETN2865, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- 3). AQB-A102 (TYPE E1), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- 4). AQB-A103, APL 14A030029, NSN 5925-01-455-8635, P/N 1376D96G02, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY CUTLER-HAMMER.



**Table 320-B-29.** Obsolete Surface Unique AQB/NQB-A101 Breakers and Replacements - Continued

**B. FOR DC BREAKER APPLICATIONS:**

AQB-A101, APL 149990066, NSN 5925-00-876-9220, P/N S458D509G15, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-30.** Obsolete Sub Unique AQB/NQB-A10 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Sub Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
T140302097	ETN275501	5930-01-077-3138	NQB-A101	N/A	1a,1b aux switch
REPLACEMENT BREAKER INFO (1) - Sub Unique AQB/NQB-A101					
NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. FOR AC BREAKER APPLICATIONS:					
1). NQB-A101, APL T14A070120, NSN 5925-01-558-7311, P/N 83E4682, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.					
2). NQB-A102, APL T14A070099, NSN 5925-01-536-7108, P/N ETN286210, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.					
B. FOR DC BREAKER APPLICATIONS:					
NQB-A101, APL T14A070120, NSN 5925-01-558-7311, P/N 83E4682, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS ("A" CONTACT, "B" CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO <a href="#">TABLE 320-B-2</a> OF THIS APPENDIX).					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					

**Table 320-B-30.** Obsolete Sub Unique AQB/NQB-A10 Breakers and  
Replacements - Continued

OBSOLETE BREAKER INFO (2) - Sub Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
T140302346	ETN275010S01	5925-00-813-2470	A101	15 (60 Hz and DC)	115Vac, 60Hz shunt trip, shunt trip cut-off switch, may have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (2) - Sub Unique AQB/NQB-A101					
<p>NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):</p> <p>1). AQB-A101, APL T14A070119, NSN 5925-00-813-2470, P/N 5682D24G13, THERMAL MAGNETIC WITH TRIP UNIT TYPE 15, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>2). AQB-A102 (TYPE E2), APL T14A070098, NSN 5925-01-513-7622, P/N ETN286500S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>3). AQB-A102 (TYPE E1), APL T14A070105, NSN 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>4). AQB-A103, APL T14A070118, NSN 5925-01-482-1112, P/N 1376D96G07, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY CUTLER-HAMMER. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>B. FOR DC BREAKER APPLICATIONS:</p> <p>AQB-A101, APL T14A070119, NSN 5925-00-813-2470, P/N 5682D24G13, THERMAL MAGNETIC WITH TRIP UNIT TYPE 15, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER, THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER, AND THE CUTLER-HAMMER ELECTRONIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO <a href="#">TABLE 320-B-2</a> OF THIS APPENDIX). REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.4.2.b</a> OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD AQB-A102 BREAKERS.</p> <p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.4.2.1</a> AND <a href="#">TABLE 320-B-2</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p>					

**Table 320-B-30.** Obsolete Sub Unique AQB/NQB-A10 Breakers and Replacements - Continued

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (3) - Sub Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
T149990072	ETN2773	5925-00-986-7314	A101	75H (400 Hz)	None
REPLACEMENT BREAKER INFO (3) - Sub Unique AQB/NQB-A101					
NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. AQB-A101, APL T14A070104, NSN 5925-00-986-7314, P/N S458D510G14, THERMAL MAGNETIC WITH TRIP UNIT TYPE 75H, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
B. AQB-A102 (TYPE E1), APL T14A070102, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					

**Table 320-B-31.** Obsolete Carrier/Surface/Sub AQB/NQB-A101 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Carrier/Surface/Sub AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301816	ETN275510	5925-01-437-4727	NQB-A101	N/A	1a, 1b aux switch
REPLACEMENT BREAKER INFO (1) - Carrier/Surface/Sub AQB/NQB-A101					
NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. FOR AC BREAKER APPLICATIONS:					
1). NQB-A101, APL 14A070145, NSN 5925-01-560-8690, P/N 83E3834, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.					
2). NQB-A102, APL 14A050085, NSN 5925-01-536-7108, P/N ETN286210, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.					

**Table 320-B-31. Obsolete Carrier/Surface/Sub AQB/NQB-A101 Breakers and Replacements - Continued**

B. FOR DC BREAKER APPLICATIONS: NQB-A101, APL 14A070145, NSN 5925-01-560-8690, P/N 83E3834, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-2](#) OF THIS APPENDIX).

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**OBSOLETE BREAKER INFO (2) - Carrier/Surface/Sub AQB/NQB-A101**

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302067	ETN275100S01	5925-01-028-6500	A101	25 (60 Hz and DC)	115Vac, 60 Hz shunt trip, shunt trip cut-off switch, may have fuse for 60 Hz applications

**REPLACEMENT BREAKER INFO (2) - Carrier/Surface/Sub AQB/NQB-A101**

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):

- 1). AQB-A101, APL 140902742, NSN 5925-01-028-6500, P/N 458D509G12/4976D65G06, THERMAL MAGNETIC WITH TRIP UNIT TYPE 25, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-A102 (TYPE E2), APL 14A050087, NSN 5925-01-513-7622, P/N ETN286500S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-A102 (TYPE E1), APL 14A050081, NSN 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 4). AQB-A103, APL 14A090007, NSN 5925-01-482-1112, P/N 1376D96G07, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY CUTLER-HAMMER. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

B. FOR DC BREAKER APPLICATIONS:

AQB-A101, APL 140902742, NSN 5925-01-028-6500, P/N 458D509G12/4976D65G06, THERMAL MAGNETIC WITH TRIP UNIT TYPE 25, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

**Table 320-B-31.** Obsolete Carrier/Surface/Sub AQB/NQB-A101 Breakers and Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER, THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER, AND THE CUTLER-HAMMER ELECTRONIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-2](#) OF THIS APPENDIX). REFER TO [PARAGRAPH 320-B.3.2.1.4.2.b](#) OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD AQB-A102 BREAKERS.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.2.1.3](#) AND [TABLE 320-B-2](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (3) - Carrier/Surface/Sub AQB/NQB-A101

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990062	ETN2750	5925-00-876-9216	A101	15 (60 Hz and DC)	May have fuse for 60 Hz applications

REPLACEMENT BREAKER INFO (3) - Carrier/Surface/Sub AQB/NQB-A101

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):

- 1). AQB-A101, APL 149990062, NSN 5925-00-876-9216, P/N S458D509G11, THERMAL MAGNETIC WITH TRIP UNIT TYPE 15, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- 2). AQB-A102 (TYPE E2), APL 14A050086, NSN 5925-01-513-7619, P/N ETN2865, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- 3). AQB-A102 (TYPE E1), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- 4). AQB-A103, APL 14A030028, NSN 5925-01-455-8639, P/N 1376D96G01, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY CUTLER-HAMMER.

B. FOR DC BREAKER APPLICATIONS:

AQB-A101, APL 149990062, NSN 5925-00-876-9216, P/N S458D509G11, THERMAL MAGNETIC WITH TRIP UNIT TYPE 15, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX.

**Table 320-B-31. Obsolete Carrier/Surface/Sub AQB/NQB-A101 Breakers and Replacements - Continued**

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (4) - Carrier/Surface/Sub AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990064	ETN2752	5925-00-876-9218	A101	50 (60 Hz and DC)	May have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (4) - Carrier/Surface/Sub AQB/NQB-A101					
NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE)					
1). AQB-A101, APL 149990064, NSN 5925-00-876-9218, P/N S458D509G13, THERMAL MAGNETIC WITH TRIP UNIT TYPE 50, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
2). AQB-A102 (TYPE E2), APL 14A050086, NSN 5925-01-513-7619, P/N ETN2865, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.					
3). AQB-A102 (TYPE E1), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.					
4). AQB-A103, APL 14A030029, NSN 5925-01-455-8635, P/N 1376D96G02, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY CUTLER-HAMMER.					
B. FOR DC BREAKER APPLICATIONS:					
AQB-A101, APL 149990064, NSN 5925-00-876-9218, P/N S458D509G13, THERMAL MAGNETIC WITH TRIP UNIT TYPE 50, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (5) - Carrier/Surface/Sub AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990065	ETN2753	5925-01-136-5633	A101	75 (60 Hz and DC)	May have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (5) - Carrier/Surface/Sub AQB/NQB-A101					

**Table 320-B-31.** Obsolete Carrier/Surface/Sub AQB/NQB-A101 Breakers and Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):

- 1). AQB-A101, APL 149990065, NSN 5925-01-136-5633, P/N S458D509G14, THERMAL MAGNETIC WITH TRIP UNIT TYPE 75, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- 2). AQB-A102 (TYPE E1), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.

B. FOR DC BREAKER APPLICATIONS:

AQB-A101, APL 149990065, NSN 5925-01-136-5633, P/N S458D509G14, THERMAL MAGNETIC WITH TRIP UNIT TYPE 75, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (6) - Carrier/Surface/Sub AQB/NQB-A101

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990066	ETN2754	5925-01-318-4436	A101	100 (60 Hz and DC)	May have fuse for 60 Hz applications

REPLACEMENT BREAKER INFO (6) - Carrier/Surface/Sub AQB/NQB-A101

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):

- 1). AQB-A101, APL 149990066, NSN 5925-00-876-9220, P/N S458D509G15, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- 2). AQB-A102 (TYPE E2), APL 14A050086, NSN 5925-01-513-7619, P/N ETN2865, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- 3). AQB-A102 (TYPE E1), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- 4). AQB-A103, APL 14A030029, NSN 5925-01-455-8635, P/N 1376D96G02, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY CUTLER-HAMMER.

B. FOR DC BREAKER APPLICATIONS:

AQB-A101, APL 149990066, NSN 5925-00-876-9220, P/N S458D509G15, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

**Table 320-B-31. Obsolete Carrier/Surface/Sub AQB/NQB-A101 Breakers and Replacements - Continued**

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (7) - Carrier/Surface/Sub AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990068	ETN2755	5930-00-969-2477	NQB-A101	N/A	None
REPLACEMENT BREAKER INFO (7) - Carrier/Surface/Sub AQB/NQB-A101					
NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. FOR AC BREAKER APPLICATIONS:					
1). NQB-A101, APL 149990068, NSN 5930-00-969-2477, P/N S458D509G20, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
2). NQB-A102, APL 14A040000, NSN 5925-01-416-4428, P/N ETN2862, MANUFACTURED BY SPD.					
3). NQB-A103, APL 14A040026, NSN 5925-01-456-0004, P/N 1376D96G51, MANUFACTURED BY CUTLER-HAMMER.					
B. FOR DC BREAKER APPLICATIONS:					
NQB-A101, APL 149990068, NSN 5930-00-969-2477, P/N S458D509G20, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (8) - Carrier/Surface/Sub AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990146	ETN275000S01	5925-00-813-2470	A101	15 (60 Hz and DC)	115Vac, 60 Hz shunt trip, shunt trip cut-off switch, may have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (8) - Carrier/Surface/Sub AQB/NQB-A101					



**Table 320-B-31.** Obsolete Carrier/Surface/Sub AQB/NQB-A101 Breakers and Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):

- 1). AQB-A101, APL 140902881, NSN 5925-00-813-2470, P/N 5682D24G13, THERMAL MAGNETIC WITH TRIP UNIT TYPE 15, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-A102 (TYPE E2), APL 14A050087, NSN 5925-01-513-7622, P/N ETN286500S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-A102 (TYPE E1), APL 14A050081, NSN 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 4). AQB-A103, APL 14A090007, NSN 5925-01-482-1112, P/N 1376D96G07, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY CUTLER-HAMMER. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

B. FOR DC BREAKER APPLICATIONS:

AQB-A101, APL 140902881, NSN 5925-00-813-2470, P/N 5682D24G13, THERMAL MAGNETIC WITH TRIP UNIT TYPE 15, SHUNT TRIP, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER, THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER, AND THE CUTLER-HAMMER ELECTRONIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-2](#) OF THIS APPENDIX). REFER TO [PARAGRAPH 320-B.3.2.1.4.2.b](#) OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD AQB-A102 BREAKERS.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.2.1.4.2.1](#) AND [TABLE 320-B-2](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-32.** Obsolete Carrier/Surface Unique AQB/NQB-A101 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Carrier/Surface Unique AQB/NQB-A101

**Table 320-B-32.** Obsolete Carrier/Surface Unique AQB/NQB-A101 Breakers  
and Replacements - Continued

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301920	ETN275700S01	5925-00-007-7783	A101	50G (60 Hz and DC)	115Vac, 60 Hz shunt trip, shunt trip cut-off switch, may have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (1) - Carrier/Surface Unique AQB/NQB-A101					
<p>NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT FOR AC AND DC APPLICATIONS. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>AQB-A101, APL 140301920, NSN 5925-01-458-5096, P/N 83E3805, THERMAL MAGNETIC WITH TRIP UNIT TYPE 50G, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET THE THERMAL MAGNETIC REPLACEMENT BREAKER, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER AND THE CUTLER-HAMMER REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO <a href="#">TABLE 320-B-2</a> OF THIS APPENDIX).</p> <p>B. THE OBSOLETE SPD BREAKER AND THE CUTLER-HAMMER REPLACEMENT BREAKER CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.4.2.1</a> AND <a href="#">TABLE 320-B-2</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (2) - Carrier/Surface Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302075	ETN274111	5925-01-187-0695	A101	25 (60 Hz and DC)	2a, 2b aux switch, may have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (2) - Carrier/Surface Unique AQB/NQB-A101					
<p>NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p>					

**Table 320-B-32.** Obsolete Carrier/Surface Unique AQB/NQB-A101 Breakers  
and Replacements - Continued

A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):

- 1). AQB-A101, APL 14A070144, NSN 5925-01-560-8679, P/N 83E4105, THERMAL MAGNETIC WITH TRIP UNIT TYPE 25, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.
- 2). AQB-A102 (TYPE E2), APL 14A050089, NSN 5925-01-536-7119, P/N ETN286520, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.
- 3). AQB-A102 (TYPE E1), APL 14A050083, NSN 5925-01-187-0695, P/N ETN286020, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.

B. FOR DC BREAKER APPLICATIONS: AQB-A101, APL 14A070144, NSN 5925-01-560-8679, P/N 83E4105, THERMAL MAGNETIC WITH TRIP UNIT TYPE 25, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE SIX AUX SWITCH LEADS WIRED OUT: THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) FOR EACH 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-2](#) OF THIS APPENDIX).

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (3) - Carrier/Surface Unique AQB/NQB-A101

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302101	ETN95107	0000-LL-CMO-5823	A101	50 (60 Hz and DC)	May have fuse for 60 Hz applications

REPLACEMENT BREAKER INFO (3) - Carrier/Surface Unique AQB/NQB-A101

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):

- 1). AQB-A101, APL 149990064, NSN 5925-00-876-9218, P/N S458D509G13, THERMAL MAGNETIC WITH TRIP UNIT TYPE 50, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- 2). AQB-A102 (TYPE E2), APL 14A050086, NSN 5925-01-513-7619, P/N ETN2865, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- 3). AQB-A102 (TYPE E1), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.

**Table 320-B-32.** Obsolete Carrier/Surface Unique AQB/NQB-A101 Breakers  
and Replacements - Continued

**B. FOR DC BREAKER APPLICATIONS:**

AQB-A101, APL 149990064, NSN 5925-00-876-9218, P/N S458D509G13, THERMAL MAGNETIC WITH TRIP UNIT TYPE 50, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**OBSOLETE BREAKER INFO (4) - Carrier/Surface Unique AQB/NQB-A101**

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302162	ETN275300S01	5925-00-167-7513	A101	75 (60 Hz and DC)	115Vac, 60 Hz shunt trip, shunt trip cut-off switch, may have fuse for 60 Hz applications

**REPLACEMENT BREAKER INFO (4) - Carrier/Surface Unique AQB/NQB-A101**

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):**

1). AQB-A101, APL 149990128, NSN 5925-00-167-7513, P/N 43E4609, THERMAL MAGNETIC WITH TRIP UNIT TYPE 75, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

2). AQB-A102 (TYPE E1), APL 14A050081, NSN 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

**B. FOR DC BREAKER APPLICATIONS:**

AQB-A101, APL 149990128, NSN 5925-00-167-7513, P/N 43E4609, THERMAL MAGNETIC WITH TRIP UNIT TYPE 75, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-2](#) OF THIS APPENDIX). REFER TO [PARAGRAPH 320-B.3.2.1.4.2.b](#) OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD AQB-A102 BREAKERS.

**Table 320-B-32.** Obsolete Carrier/Surface Unique AQB/NQB-A101 Breakers  
and Replacements - Continued

<p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.4.2.1</a> AND <a href="#">TABLE 320-B-2</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
<p>OBSOLETE BREAKER INFO (5) - Carrier/Surface Unique AQB/NQB-A101</p>					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990063	ETN2751	5925-00-876-9217	A101	25 (60 Hz and DC)	May have fuse for 60 Hz applications
<p>REPLACEMENT BREAKER INFO (5) - Carrier/Surface Unique AQB/NQB-A101</p>					
<p>NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):</p> <ol style="list-style-type: none"> <li>1). AQB-A101, APL 140902994, NSN 5925-00-876-9217, P/N S458D509G12, THERMAL MAGNETIC WITH TRIP UNIT TYPE 25, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</li> <li>2). AQB-A102 (TYPE E2), APL 14A050086, NSN 5925-01-513-7619, P/N ETN2865, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.</li> <li>3). AQB-A102 (TYPE E1), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.</li> <li>4). AQB-A103, APL 14A030028, NSN 5925-01-455-8639, P/N 1376D96G01, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY CUTLER-HAMMER.</li> </ol> <p>B. FOR DC BREAKER APPLICATIONS:</p> <p>AQB-A101, APL 140902994, NSN 5925-00-876-9217, P/N S458D509G12, THERMAL MAGNETIC WITH TRIP UNIT TYPE 25, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
<p>OBSOLETE BREAKER INFO (6) - Carrier/Surface Unique AQB/NQB-A101</p>					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990069	ETN2770	5925-00-867-7328	A101	15H (400 Hz)	None

**Table 320-B-32.** Obsolete Carrier/Surface Unique AQB/NQB-A101 Breakers  
and Replacements - Continued

REPLACEMENT BREAKER INFO (6) - Carrier/Surface Unique AQB/NQB-A101					
NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. AQB-A101, APL 149990069, NSN 5925-00-867-7328, P/N S458D510G11, THERMAL MAGNETIC WITH TRIP UNIT TYPE 15H, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
B. AQB-A102 (TYPE E2), APL 14A050086, NSN 5925-01-513-7619, P/N ETN2865, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.					
C. AQB-A102 (TYPE E1), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (7) - Carrier/Surface Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990070	ETN2771	5925-00-867-7329	A101	25H (400 Hz)	None
REPLACEMENT BREAKER INFO (7) - Carrier/Surface Unique AQB/NQB-A101					
NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. AQB-A101, APL 149990070, NSN 5925-00-867-7329, P/N S458D510G12, THERMAL MAGNETIC WITH TRIP UNIT TYPE 25H, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
B. AQB-A102 (TYPE E2), APL 14A050086, NSN 5925-01-513-7619, P/N ETN2865, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.					
C. AQB-A102 (TYPE E1), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (8) - Carrier/Surface Unique AQB/NQB-A101					

**Table 320-B-32.** Obsolete Carrier/Surface Unique AQB/NQB-A101 Breakers  
and Replacements - Continued

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990071	ETN2772	5925-00-986-7313	A101	50H (400 Hz)	None
REPLACEMENT BREAKER INFO (8) - Carrier/Surface Unique AQB/NQB-A101					
<p>NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. AQB-A101, APL 149990071, NSN 5925-00-986-7313, P/N S458D510G13, THERMAL MAGNETIC WITH TRIP UNIT TYPE 50H, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).            B. AQB-A102 (TYPE E2), APL 14A050086, NSN 5925-01-513-7619, P/N ETN2865, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.            C. AQB-A102 (TYPE E1), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (9) - Carrier/Surface Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990072	ETN2773	5925-00-986-7314	A101	75H (400 Hz)	None
REPLACEMENT BREAKER INFO (9) - Carrier/Surface Unique AQB/NQB-A101					
<p>NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. AQB-A101, APL 149990161, NSN 5925-00-986-7314, P/N S458D510G14, THERMAL MAGNETIC WITH TRIP UNIT TYPE 75H, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).            B. AQB-A102 (TYPE E1), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					

**Table 320-B-32.** Obsolete Carrier/Surface Unique AQB/NQB-A101 Breakers  
and Replacements - Continued

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (10) - Carrier/Surface Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990073	ETN2774	5925-00-972-3000	A101	100H (400 Hz)	None
REPLACEMENT BREAKER INFO (10) - Carrier/Surface Unique AQB/NQB-A101					
NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. AQB-A101, APL 149990073, NSN 5925-00-972-3000, P/N S458D510G15, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100H, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
B. AQB-A102 (TYPE E2), APL 14A050086, NSN 5925-01-513-7619, P/N ETN2865, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.					
C. AQB-A102 (TYPE E1), APL 14A030027, NSN 5925-01-454-4419, P/N ETN2860, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.2.1.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (11) - Carrier/Surface Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990116	ETN275400S01	5925-00-938-3446	A101	100 (60 Hz and DC)	115Vac, 60 Hz shunt trip, shunt trip cut-off switch, may have fuse for 60 Hz applications
REPLACEMENT BREAKER INFO (11) - Carrier/Surface Unique AQB/NQB-A101					
NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					



**Table 320-B-32.** Obsolete Carrier/Surface Unique AQB/NQB-A101 Breakers  
and Replacements - Continued

A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):

- 1). AQB-A101, APL 149990154, NSN 5925-00-938-3446 , P/N 5682D24G17, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-A102 (TYPE E2), APL 14A050087, NSN 5925-01-513-7622, P/N ETN286500S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-A102 (TYPE E1), APL 14A050081, NSN 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 4). AQB-A103, APL 14A050002, NSN 5925-01-482-1134, P/N 1376D96G08, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY CUTLER-HAMMER. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

B. FOR DC BREAKER APPLICATIONS:

AQB-A101, APL 149990154, NSN 5925-00-938-3446, P/N 5682D24G17, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER, THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER, AND THE CUTLER-HAMMER ELECTRONIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-2](#) OF THIS APPENDIX). REFER TO [PARAGRAPH 320-B.3.2.1.4.2.b](#) OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD AQB-A102 BREAKERS.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.2.1.4.2.1](#) AND [TABLE 320-B-2](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (12) - Carrier/Surface Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990118	ETN277400S22	5925-01-208-2341	A101	100H (400 Hz)	120Vdc shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (12) - Carrier/Surface Unique AQB/NQB-A101

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-32.** Obsolete Carrier/Surface Unique AQB/NQB-A101 Breakers  
and Replacements - Continued

- A. AQB-A101, APL 149990118, NSN 5925-01-208-2341, P/N S5682D24G29, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100H, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- B. AQB-A102 (TYPE E2), APL 14A050087, NSN 5925-01-513-7622, P/N ETN286500S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- C. AQB-A102 (TYPE E1), APL 14A050081, NSN 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-2](#) OF THIS APPENDIX). REFER TO [PARAGRAPH 320-B.3.2.1.4.2.b](#) OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD AQB-A102 BREAKERS.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.2.1.4.2.1](#) AND [TABLE 320-B-2](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (13) - Carrier/Surface Unique AQB/NQB-A101

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990121	ETN275200S01	5925-00-813-2474	A101	50 (60 Hz and DC)	115Vac, 60 Hz shunt trip, shunt trip cut-off switch, may have fuse for 60 Hz applications

REPLACEMENT BREAKER INFO (13) - Carrier/Surface Unique AQB/NQB-A101

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-32.** Obsolete Carrier/Surface Unique AQB/NQB-A101 Breakers  
and Replacements - Continued

A. FOR AC BREAKER APPLICATIONS (WITH OR WITHOUT FUSE):

- 1). AQB-A101, APL 140902879, NSN 5925-00-813-2474, P/N S5682D24G15, THERMAL MAGNETIC WITH TRIP UNIT TYPE 50, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-A102 (TYPE E2), APL 14A050087, NSN 5925-01-513-7622, P/N ETN286500S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-A102 (TYPE E1), APL 14A050081, NSN 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 4). AQB-A103, APL 14A050002, NSN 5925-01-482-1134, P/N 1376D96G08, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY CUTLER-HAMMER. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

B. FOR DC BREAKER APPLICATIONS:

AQB-A101, APL 140902879, NSN 5925-00-813-2474, P/N S5682D24G15, THERMAL MAGNETIC WITH TRIP UNIT TYPE 50, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER, THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER, AND THE CUTLER-HAMMER ELECTRONIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-2](#) OF THIS APPENDIX). REFER TO [PARAGRAPH 320-B.3.2.1.4.2.b](#) OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD AQB-A102 BREAKERS.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.2.1.4.2.1](#) AND [TABLE 320-B-2](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (14) - Carrier/Surface Unique AQB/NQB-A101					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
149990124	ET74432	5925-00-011-6738	A101	25H (400 Hz)	Shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (14) - Carrier/Surface Unique AQB/NQB-A101

NOTE 1: THIS CIRCUIT BREAKER IS OBSOLETE. IF A SPARE CANNOT BE FOUND, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-32.** Obsolete Carrier/Surface Unique AQB/NQB-A101 Breakers  
and Replacements - Continued

- A. AQB-A101, P/N 5682D24G37/176C615G05 (SPECIFICALLY REQUEST 400 HZ SHUNT TRIP), THERMAL MAGNETIC WITH TRIP UNIT TYPE 25H, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- B. AQB-A102 (TYPE E2), APL 14A050087, NSN 5925-01-513-7622, P/N ETN286500S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- C. AQB-A102 (TYPE E1), APL 14A050081, NSN 5925-01-458-5096, P/N ETN286000S00, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.2.1.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE CUTLER-HAMMER THERMAL MAGNETIC REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-2](#) OF THIS APPENDIX). REFER TO [PARAGRAPH 320-B.3.2.1.4.2.b](#) OF THIS APPENDIX FOR INFORMATION ON DIFFERENT SHUNT TRIP LEAD CONFIGURATIONS FOR SPD AQB-A102 BREAKERS.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.2.1.4.2.1](#) AND [TABLE 320-B-2](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-33.** List of Obsolete SPD AQB/NQB-250 Circuit Breaker APLS  
Across Platforms.

Carrier Unique	Surface Unique	Sub Unique	Carrier Surface Sub	Carrier Surface	Carrier Sub	Surface Sub
(1) 140300512R	(1) 140300600	(1) T140302050	(1) 140300418	(1) 140300416	1403000527	(1) 140301760
(2) 140300513R	(2) 140300601	(2) T140302051	(2) 140300419	(2) 140300512		(2) 140302056
(3) 140300514R	(3) 140300741	(3) T140302098	(3) 140300420	(3) 140300516		
(4) 140300515R	(4) 140300784	(4) T140302099	(4) 140300421	(4) 140300519		
(5) 140300516R	(5) 140301476		(5) 140300459	(5) 140300521		
(6) 140300517R	(6) 140302046		(6) 140300513	(6) 140300522		
(7) 140300518R	(7) 140302126		(7) 140300514	(7) 140300533		

**Table 320-B-33.** List of Obsolete SPD AQB/NQB-250 Circuit Breaker APLS

Across Platforms. - Continued

Carrier Unique	Surface Unique	Sub Unique	Carrier Surface Sub	Carrier Surface	Carrier Sub	Surface Sub
(8) 140300519R	(8) 140302127		(8) 140300515	(8) 140300599		
(9) 140300520R	(9) 140302131		(9) 140300517	(9) 140301358		
(10) 140300521R	(10) 140302156		(10) 140300518	(10) 140301359		
(11) 140300533R	(11) 140302158		(11) 140300520	(11) 140301360		
(12) 140302094	(12) 140302161		(12) 140302050	(12) 140301651		
(13) 140302367	(13) 140302163		(13) 140302051	(13) 140301659		
	(14) 140302172		(14) 140302098	(14) 140302039		
	(15) 140302176		(15) 140302351	(15) 140302052		
	(16) 140302287			(16) 140302079		
	(17) 140302334A			(17) 140302125		
	(18) 140302334L			(18) 140302128		
	(19) 140302335A			(19) 140302129		
	(20) 140302336A			(20) 140302137		
	(21) 140302337A			(21) 140302154		
	(22) 140302337L			(22) 140302171		
	(23) 140302349A			(23) 140302173		
	(24) 140302350A			(24) 140302185		
	(25) 140302367A			(25) 140302198		
	(26) 140302368			(26) 140302254		
	(27) 140302368A			(27) 140302288		
	(28) 140302380			(28) 140302348		
	(29) 140302504			(29) 140302349		
	(30) 140302505			(30) 140302350		

**Table 320-B-33.** List of Obsolete SPD AQB/NQB-250 Circuit Breaker APLS

Across Platforms. - Continued

Carrier Unique	Surface Unique	Sub Unique	Carrier Surface Sub	Carrier Surface	Carrier Sub	Surface Sub
	(31) 140302506					
	(32) 140302507					
	(33) 140302509					
	(34) 143482199					

**Table 320-B-34.** Obsolete Carrier Unique AQB/NQB-250 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Carrier Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300512R	ETN5301	5925-01-230-3198	LF250	125L	None
REPLACEMENT BREAKER INFO (1) - Carrier Unique AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. AQB-LF250, APL 140901259, NSN 5925-01-360-8673, P/N S313C748G18, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.					
C. AQB-LF252, APL 14A990003, NSN 5925-01-472-9133, P/N ETN3251, ELECTRONIC WITH 125 AMP RATING PLUG, MANUFACTURED BY SPD.					
D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (2) - Carrier Unique AQB/NQB-250					

**Table 320-B-34.** Obsolete Carrier Unique AQB/NQB-250 Breakers and  
Replacements - Continued

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300513R	ETN5302	5925-01-233-5623	LF250	125LM	None
REPLACEMENT BREAKER INFO (2) - Carrier Unique AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. AQB-LF250, APL 140901260, NSN 5925-01-233-5172, P/N S313C748G19, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</p> <p>B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.</p> <p>C. AQB-LF252, APL 14A990003, NSN 5925-01-472-9133, P/N ETN3251, ELECTRONIC WITH 125 AMP RATING PLUG, MANUFACTURED BY SPD.</p> <p>D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION). AS REFERRED TO IN <a href="#">TABLE 320-B-21</a> OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 4 OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, OR 3.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (3) - Carrier Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300514R	ETN5303	5925-01-229-4439	LF250	150L	None
REPLACEMENT BREAKER INFO (3) - Carrier Unique AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p>					

**Table 320-B-34.** Obsolete Carrier Unique AQB/NQB-250 Breakers and Replacements - Continued

- A. AQB-LF250, APL 140901261, NSN 5925-01-442-0650, P/N 313C748G20, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- C. AQB-LF252, APL 14A990013, NSN 5925-01-483-1601, P/N ETN3252, ELECTRONIC WITH 150 AMP RATING PLUG, MANUFACTURED BY SPD.
- D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (4) - Carrier Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300515R	ETN5304	5925-01-226-3048	LF250	150LM	None

REPLACEMENT BREAKER INFO (4) - Carrier Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

- A. AQB-LF250, APL 140901262, NSN 5925-01-229-4444, P/N 313C748G21, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- C. AQB-LF252, APL 14A990013, NSN 5925-01-483-1601, P/N ETN3252, ELECTRONIC WITH 150 AMP RATING PLUG, MANUFACTURED BY SPD.
- D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION). AS REFERRED TO IN [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.



**Table 320-B-34.** Obsolete Carrier Unique AQB/NQB-250 Breakers and Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (5) - Carrier Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300516R	ETN5305	5925-01-144-7581	LF250	175L	None
REPLACEMENT BREAKER INFO (5) - Carrier Unique AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. AQB-LF250, APL 14A990037, NSN 5295-01-189-9250, P/N 313C748G22, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.					
C. AQB-LF252, APL 14A990014, NSN 5925-01-544-0001, P/N ETN3253, ELECTRONIC WITH 175 AMP RATING PLUG, MANUFACTURED BY SPD.					
D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (6) - Carrier Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300517R	ETN5306	5925-01-228-8585	LF250	175LM	None
REPLACEMENT BREAKER INFO (6) - Carrier Unique AQB/NQB-250					

**Table 320-B-34.** Obsolete Carrier Unique AQB/NQB-250 Breakers and Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

- A. AQB-LF250, APL 140901264, NSN 5295-01-199-4401, P/N 313C748G23, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- C. AQB-LF252, APL 14A990014, NSN 5925-01-544-0001, P/N ETN3253, ELECTRONIC WITH 175 AMP RATING PLUG, MANUFACTURED BY SPD.
- D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (v OF THIS APPENDIX FOR MORE INFORMATION). AS REFERRED TO IN [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (7) - Carrier Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300518R	ETN5307	5925-01-233-5706	LF250	225L	None

REPLACEMENT BREAKER INFO (7) - Carrier Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-34.** Obsolete Carrier Unique AQB/NQB-250 Breakers and  
Replacements - Continued

- A. AQB-LF250, APL 140901265, NSN 5925-01-233-5173, P/N S313C748G24, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).  
 B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.  
 C. AQB-LF252, APL 14A990027, NSN 5925-01-529-8157, P/N ETN3254, ELECTRONIC WITH 225 AMP RATING PLUG, MANUFACTURED BY SPD.  
 D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (8) - Carrier Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300519R	ETN5308	5925-01-185-5155	LF250	225LM	None

REPLACEMENT BREAKER INFO (8) - Carrier Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

- A. AQB-LF250, APL 140901266, NSN 5925-01-229-4445, P/N 313C748G25, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).  
 B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.  
 C. AQB-LF252, APL 14A990027, NSN 5925-01-529-8157, P/N ETN3254, ELECTRONIC WITH 225 AMP RATING PLUG, MANUFACTURED BY SPD.  
 D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX.

**Table 320-B-34. Obsolete Carrier Unique AQB/NQB-250 Breakers and Replacements - Continued**

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (9) - Carrier Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300520R	ETN5309	5925-01-105-0925	LF250	250L	None
REPLACEMENT BREAKER INFO (9) - Carrier Unique AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. AQB-LF250, APL 140901980, NSN 5925-01-243-1611, P/N S313C748G26, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.					
C. AQB-LF252, APL 14A990002, NSN 5925-01-465-9581, P/N ETN3255, ELECTRONIC WITH 250 AMP RATING PLUG, MANUFACTURED BY SPD.					
D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (10) - Carrier Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300521R	ETN5310	5925-01-111-8431	LF250	250LM	None
REPLACEMENT BREAKER INFO (10) - Carrier Unique AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					

**Table 320-B-34.** Obsolete Carrier Unique AQB/NQB-250 Breakers and Replacements - Continued

A. AQB-LF250, APL 140901268, NSN 5295-01-111-8431, P/N 313C748G27, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).  
 B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.  
 C. AQB-LF252, APL 14A990002, NSN 5925-01-465-9581, P/N ETN3255, ELECTRONIC WITH 250 AMP RATING PLUG, MANUFACTURED BY SPD.  
 D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (11) - Carrier Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300533R	ETN5953	5925-01-031-9909	A250	125NM (60 Hz and DC)	May have motor operator

REPLACEMENT BREAKER INFO (11) - Carrier Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED, INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-34.** Obsolete Carrier Unique AQB/NQB-250 Breakers and Replacements - Continued

A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR: 1). AQB-A250, APL 140901279, NSN 0000-LL-CDO-4172, P/N S313C682G19, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125NM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).  
 2). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.  
 3). AQB-A252, APL 14A000001, NSN 5925-01-532-6261, P/N ETN3152, ELECTRONIC WITH 125 AMP RATING PLUG, MANUFACTURED BY SPD.  
 4). AQB-A253, APL 14A010018, NSN 5925-01-493-8105, P/N 1483D82G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). AS REFERRED TO [TABLE 320-B-19](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO.

B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR:  
 1). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400HZ).  
 2). AQB-A252, APL 14A000001, NSN 5925-01-532-6261, P/N ETN3152, ELECTRONIC WITH 125 AMP RATING PLUG, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400HZ).

C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR: AQB-A250, APL 140901279, NSN 0000-LL-CDO-4172, P/N S313C682G19, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125NM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

D. FOR DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (12) - Carrier Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES

**Table 320-B-34.** Obsolete Carrier Unique AQB/NQB-250 Breakers and  
Replacements - Continued

140302094	ETN583500S36	0000-LL-CMO-1015	A250	225NH (400 Hz)	450 VAC, 60 Hz/120VDC shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (12) - Carrier Unique AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</p> <p>1). 450VAC SHUNT TRIP:  a). AQB-A250, APL 14A070033, NSN 5925-01-555-0175, P/N 315C574G24/452D377G07, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.  b). AQB-A252, APL 14A050093, NSN 5925-01-535-7846, P/N ETN317000S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>2). 120VDC SHUNT TRIP:  a). AQB-A250, APL 14A070033, NSN 5925-01-555-0175, P/N 315C574G24/452D377G07, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.  b). AQB-A252, APL 14A050091, NSN 5925-01-535-7847, P/N ETN317000S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP CONFIGURATIONS:</p> <p>1). 450VAC SHUNT TRIP:  AQB-A252, APL 14A050093, NSN 5925-01-535-7846, P/N ETN317000S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p> <p>2). 120VDC SHUNT TRIP:  AQB-A252, APL 14A050091, NSN 5925-01-535-7847, P/N ETN317000S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p>					

**Table 320-B-34.** Obsolete Carrier Unique AQB/NQB-250 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (13) - Carrier Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302367	ETN530700S31	5925-01-329-8214	LF250	225L	115Vac, 60Hz/28Vdc Shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (13) - Carrier Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR 115VAC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 140903108, NSN 5925-01-252-1690, P/N 313C748G24/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A040019, NSN 5925-01-531-3279, P/N ETN322500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-LF252, APL 14A990024, NSN 5925-01-532-4940, P/N ETN325500S31, ELECTRONIC WITH 225 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 4). AQB-L253, APL 14A080025, NSN 5925-01-532-5564, P/N 1483D84G28, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).



**Table 320-B-34.** Obsolete Carrier Unique AQB/NQB-250 Breakers and Replacements - Continued

**B. FOR 28VDC SHUNT TRIP APPLICATIONS:**

- 1). AQB-LF250, APL 140903108, NSN 5925-01-252-1690, P/N 313C748G24/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050102, NSN 5925-01-535-7850, P/N ETN322500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080020, NSN 5925-01-561-8728, P/N 1483D84G26, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Surface Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300600	ETN5957	0000-LL-CA8-4913	A250	175NM (60 Hz and 250VDC)	May have motor operator
REPLACEMENT BREAKER INFO (1) - Surface Unique AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED, INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME.					

**Table 320-B-35. Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued**

**A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR**

- 1). AQB-A250, APL 140903179, NSN 5925-01-305-6194, P/N 313C682G23, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175NM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- 2). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.
- 3). AQB-A252, APL 14A010013, NSN 5925-01-493-2196, P/N ETN3155, ELECTRONIC WITH 175 AMP RATING PLUG, MANUFACTURED BY SPD.
- 4). AQB-A253, APL 14A010018, NSN 5925-01-493-8105, P/N 1483D82G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 4 OR HI. AS REFERRED TO IN [TABLE 320-B-19](#) OF THIS APPENDIX, CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, OR 3.

**B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR:**

- 1). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).
- 2). AQB-A252, APL 14A010013, NSN 5925-01-493-2196, P/N ETN3155, ELECTRONIC WITH 175 AMP RATING PLUG, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

**C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR:** AQB-A250, APL 140903179, NSN 5925-01-305-6194, P/N 313C682G23, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175NM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

**D. FOR DC BREAKER APPLICATIONS WITH MOTOR OPERATOR:** NO REPLACEMENTS ARE AVAILABLE.

**NOTE 2:** FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

**NOTE 3:** UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**OBSOLETE BREAKER INFO (2) - Surface Unique AQB/NQB-250**

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
1403000601	ETN5962	5925-01-300-8938	A250	250 (60 Hz and 250 Vdc)	May have motor operator

**REPLACEMENT BREAKER INFO (2) - Surface Unique AQB/NQB-250**

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS:

AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz)

B. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (3) - Surface Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300741	ETN5858	000-LL-CA8-4901	A250	225N (60 Hz and 250 Vdc)	May have motor operator

REPLACEMENT BREAKER INFO (3) - Surface Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR:

- 1). AQB-A250, APL 140902909, NSN 5925-01-306-0120, P/N 313C682G24, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- 2). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.

**Table 320-B-35. Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued**

**B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR:**

AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400HZ).

**C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR:** AQB-A250, APL 140902909, NSN 5925-01-306-0120, P/N 313C682G24, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

**D. FOR DC BREAKER APPLICATIONS WITH MOTOR OPERATOR:** NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**OBSOLETE BREAKER INFO (4) - Surface Unique AQB/NQB-250**

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300784	ETN5947	5925-00-642-0511	A250	250NG (DC only)	May have motor operator

**REPLACEMENT BREAKER INFO (4) - Surface Unique AQB/NQB-250**

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT DEPENDING ON WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:**

AQB-A250, APL 14A070053, NSN 5925-01-555-7540, P/N 313C682G30, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NG, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

**B. FOR APPLICATIONS WITH MOTOR OPERATOR:** NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC BREAKER, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (5) - Surface Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301476	ETN5830	0000-LL-CA8-5085	A250	100NGH (400 Hz)	May have motor operator
REPLACEMENT BREAKER INFO (5) - Surface Unique AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:					
1). AQB-A250, APL 140901643, P/N 315C574G28, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100NGH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
2). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.					
B. FOR APPLICATIONS WITH MOTOR OPERATOR:					
AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.3.4.4</a> AND <a href="#">TABLES 320-B-3</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (6) - Surface Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

140302046	ETN59310S316	5930-01-277-9501	NQB-A250	N/A	1a, 1b aux switch, 115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch, may have motor operator
<b>REPLACEMENT BREAKER INFO (6) - Surface Unique AQB/NQB-250</b>					
<p><b>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED, THE SHUNT TRIP VOLTAGE RATING REQUIRED, AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</b></p> <p><b>A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</b></p> <p>1). 115VAC SHUNT TRIP:  a). NQB-A250, APL 14A070055, NSN 5925-01-555-7542, P/N 313C682G36/452D377G01/452D379G04, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.  b). NQB-A252, APL 14A050099, NSN 5925-01-535-7857, ETN319910S31, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.</p> <p>2). 28VDC SHUNT TRIP:  a). NQB-A250, APL 14A070055, NSN 5925-01-555-7542, P/N 313C682G36/452D377G01/452D379G04, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.  b). NQB-A252, APL 14A050098, NSN 5925-01-535-7855, ETN319910S30, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.</p> <p><b>B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</b></p> <p>1). 115VAC SHUNT TRIP:  NQB-A252, APL 14A050099, NSN 5925-01-535-7857, ETN319910S31, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p> <p>2). 28VDC SHUNT TRIP:  NQB-A252, APL 14A050098, NSN 5925-01-535-7855, ETN319910S30, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p> <p><b>C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE A 115VAC OR 28VDC SHUNT TRIP RATING:</b>  NQB-A250, APL 14A070055, NSN 5925-01-555-7542, P/N 313C682G36/452D377G01/452D379G04, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.</p>					

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

D. FOR ANY DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (7) - Surface Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302126	ETN530500S36	5925-01-211-5051	LF250	175L	450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (7) - Surface Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued

A. FOR 450VAC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 14A070059, NSN 5925-01-211-5051, P/N 69E0804, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050105, NSN 5925-01-535-7852, ETN322500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080027, NSN 5925-01-512-4811, P/N 1483D84G30, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

B. FOR 120VDC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 14A070059, NSN 5925-01-211-5051, P/N 69E0804, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050104, NSN 5925-01-535-7851, ETN322500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080022, NSN 5925-01-561-8742, P/N 1483D84G27, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (8) - Surface Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302127	ETN530300S36	5925-01-094-3466	LF250	150L	450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch



**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

REPLACEMENT BREAKER INFO (8) - Surface Unique AQB/NQB-250
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR 450VAC SHUNT TRIP APPLICATIONS:</p> <ol style="list-style-type: none"> <li>1). AQB-LF250, APL 140902785, NSN 5925-01-094-3466, P/N 313C748G20/452D377G07, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>2). AQB-LF252, APL 14A050105, NSN 5925-01-535-7852, P/N ETN322500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>3). AQB-L253, APL 14A080027, NSN 5925-01-512-4811, P/N 1483D84G30, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</li> </ol> <p>B. FOR 120VDC SHUNT TRIP APPLICATIONS:</p> <ol style="list-style-type: none"> <li>1). AQB-LF250, APL 140902785, NSN 5925-01-094-3466, P/N 313C748G20/452D377G07, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>2). AQB-LF252, APL 14A050104, NSN 5925-01-535-7851, P/N ETN322500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>3). AQB-L253, APL 14A080022, NSN 5925-01-561-8742, P/N 1483D84G27, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</li> </ol> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX).</p> <p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.3.4.2.1</a> AND <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>

**Table 320-B-35. Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued**

OBSOLETE BREAKER INFO (9) - Surface Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302131	ETN583610S36	5925-01-226-8318	A250	250NH (400 Hz)	1a, 1b aux switch, 450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (9) - Surface Unique AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</p> <p>1). 450VAC SHUNT TRIP:  a). AQB-A250, APL 140903275, NSN 5925-01-441-9624, P/N 83E3249, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.  b). AQB-A252, APL 14A050096, NSN 5925-01-535-7864, P/N ETN317010S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.</p> <p>2). 120VDC SHUNT TRIP:  a). AQB-A250, APL 140903275, NSN 5925-01-441-9624, P/N 83E3249, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.  b). AQB-A252, APL 14A050095, NSN 5925-01-535-7861, P/N ETN317010S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.</p> <p>B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</p> <p>1). 450VAC SHUNT TRIP:  AQB-A252, APL 14A050096, NSN 5925-01-535-7864, P/N ETN317010S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p>					

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

2). 120VDC SHUNT TRIP:

AQB-A252, APL 14A050095, NSN 5925-01-535-7861, P/N ETN317010S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (10) - Surface Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302156	ETN530600S36	5925-01-211-4421	LF250	175LM	450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (10) - Surface Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

A. FOR 450VAC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 14A070060, NSN 5925-01-555-7550, P/N 83E5800, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050105, NSN 5925-01-535-7852, P/N ETN322500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080027, NSN 5925-01-512-4811, P/N 1483D84G30, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION). REFER TO [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.

B. FOR 120VDC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 14A070060, NSN 5925-01-555-7550, P/N 83E5800, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050104, NSN 5925-01-535-7851, P/N ETN322500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080022, NSN 5925-01-561-8742, P/N 1483D84G27, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION). REFER TO [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

OBSOLETE BREAKER INFO (11) - Surface Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302158	ETN583600S31	5925-01-138-5214	A250	250NH (400 Hz)	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (11) - Surface Unique AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</p> <p>1). 115VAC SHUNT TRIP:</p> <p>a). AQB-A250, APL 140903276A, NSN 5925-01-444-9658, P/N 80E1615, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>b). AQB-A252, APL 14A050013, NSN 5925-01-535-3572, P/N ETN317000S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>2). 28VDC SHUNT TRIP:</p> <p>a). AQB-A250, APL 140903276A, NSN 5925-01-444-9658, P/N 80E1615, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>b). AQB-A252, APL 14A070179, NSN 5925-01-558-4969, P/N ETN317000S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</p> <p>1). 115VAC SHUNT TRIP: AQB-A252, APL 14A050013, NSN 5925-01-535-3572, P/N ETN317000S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p>					

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued

2). 28VDC SHUNT TRIP:

AQB-A252, APL 14A070179, NSN 5925-01-558-4969, P/N ETN317000S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (12) - Surface Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302161	ETN531000S36	5925-01-211-5053	LF250	250LM	450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (12) - Surface Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

A. FOR 450VAC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 140902833, NSN 5925-01-211-5053, P/N 313C748G27/452D377G07, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050105, NSN 5925-01-535-7852, P/N ETN322500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080027, NSN 5925-01-512-4811, P/N 1483D84G30, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

B. FOR 120VDC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 140902833, NSN 5925-01-211-5053, P/N 313C748G27/452D377G07, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050104, NSN 5925-01-535-7851, P/N ETN322500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080022, NSN 5925-01-561-8742, P/N 1483D84G27, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (13) - Surface Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302163	ETN530400S36	5925-01-211-5057	LF250	150LM	450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

REPLACEMENT BREAKER INFO (13) - Surface Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR 450VAC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 140903148, NSN 5925-01-284-4215, P/N S313C748G21/452D377G07, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050105, NSN 5925-01-535-7852, P/N ETN322500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080027, NSN 5925-01-512-4811, P/N 1483D84G30, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION). REFER TO [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.

B. FOR 120VDC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 140903148, NSN 5925-01-284-4215, P/N S313C748G21/452D377G07, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050104, NSN 5925-01-535-7851, P/N ETN322500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080022, NSN 5925-01-561-8742, P/N 1483D84G27, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION). REFER TO [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

- A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).



**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued

<p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.3.4.2.1</a> AND <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (14) - Surface Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302172	ETN530900S36	5925-01-287-4808	LF250	250L	450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch
REPLACEMENT BREAKER INFO (14) - Surface Unique AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR 450VAC SHUNT TRIP APPLICATIONS:</p> <ol style="list-style-type: none"> <li>1). AQB-LF250, APL 14A070063, NSN 5925-01-555-7553, P/N 83E1503, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>2). AQB-LF252, APL 14A050105, NSN 5925-01-535-7852, P/N ETN322500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>3). AQB-L253, APL 14A080027, NSN 5925-01-512-4811, P/N 1483D84G30, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</li> </ol> <p>B. FOR 120VDC SHUNT TRIP APPLICATIONS:</p> <ol style="list-style-type: none"> <li>1). AQB-LF250, APL 14A070063, NSN 5925-01-555-7553, P/N 83E1503, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>2). AQB-LF252, APL 14A050104, NSN 5925-01-535-7851, P/N ETN322500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>3). AQB-L253, APL 14A080022, NSN 5925-01-561-8742, P/N 1483D84G27, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</li> </ol>					

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (15) - Surface Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302176	ETN583100S36	5925-01-139-3140	A250	125NH (400 Hz)	450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch, may have motor operator

REPLACEMENT BREAKER INFO (15) - Surface Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 450VAC SHUNT TRIP:

a). AQB-A250, APL 14A070025, NSN 5925-01-555-0178, P/N 315C574G18/452D377G07, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). AQB-A252, APL 14A050093, NSN 5925-01-535-7846, P/N ETN317000S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

- 2). 120VDC SHUNT TRIP:  
a). AQB-A250, APL 14A070025, NSN 5925-01-555-0178, P/N 315C574G18/452D377G07, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.  
b). AQB-A252, APL 14A050091, NSN 5925-01-535-7847, P/N ETN317000S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

- 1). 450VAC SHUNT TRIP:  
AQB-A252, APL 14A050093, NSN 5925-01-535-7846, P/N ETN317000S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

- 2). 120VDC SHUNT TRIP:  
AQB-A252, APL 14A050091, NSN 5925-01-535-7847, P/N ETN317000S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (16) - Surface Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

140302287	ETN583610S31	5925-01-266-6785	A250	250NH (400 Hz)	1a, 1b aux switch, 115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (16) - Surface Unique AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</p> <p>1). 115VAC SHUNT TRIP:  a). AQB-A250, APL 14A070026, NSN 5925-01-555-0217, P/N 80E0023, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.  b). AQB-A252, APL 14A050094, NSN 5925-01-535-7858, P/N ETN317010S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.</p> <p>2). 28VDC SHUNT TRIP:  a). AQB-A250, APL 14A070026, NSN 5925-01-555-0217, P/N 80E0023, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.  b). AQB-A252, APL 14A050092, NSN 5925-01-535-7848, P/N ETN317010S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.</p> <p>B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</p> <p>1). 115VAC SHUNT TRIP:  AQB-A252, APL 14A050094, NSN 5925-01-535-7858, P/N ETN317010S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p> <p>2). 28VDC SHUNT TRIP:  AQB-A252, APL 14A050092, NSN 5925-01-535-7848, P/N ETN317010S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p>					

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (17) - Surface Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302334A	ETN530100S31	5925-01-276-3746	LF250	125L	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (17) - Surface Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-35. Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued**

**A. FOR 115VAC SHUNT TRIP APPLICATIONS:**

- 1). AQB-LF250, APL 140903105, NSN 5925-01-252-1692, P/N 313C748G18/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A040019, NSN 5925-01-531-3279, P/N ETN322500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080025, NSN 5925-01-532-5564, P/N 1483D84G28, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

**B. FOR 28VDC SHUNT TRIP APPLICATIONS:**

- 1). AQB-LF250, APL 140903105, NSN 5925-01-252-1692, P/N 313C748G18/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050102, NSN 5925-01-535-7850, P/N ETN322500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080020, NSN 5925-01-561-8728, P/N 1483D84G26, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**OBSOLETE BREAKER INFO (18) - Surface Unique AQB/NQB-250**

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302334L	ETN530100S31	5925-01-276-3746	LF250	125L	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

REPLACEMENT BREAKER INFO (18) - Surface Unique AQB/NQB-250
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR 115VAC SHUNT TRIP APPLICATIONS:</p> <ol style="list-style-type: none"> <li>1). AQB-LF250, APL 140903105, NSN 5925-01-252-1692, P/N 313C748G18/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>2). AQB-LF252, APL 14A040019, NSN 5925-01-531-3279, P/N ETN322500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>3). AQB-L253, APL 14A080025, NSN 5925-01-532-5564, P/N 1483D84G28, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</li> </ol> <p>B. FOR 28VDC SHUNT TRIP APPLICATIONS</p> <ol style="list-style-type: none"> <li>1). AQB-LF250, APL 140903105, NSN 5925-01-252-1692, P/N 313C748G18/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>2). AQB-LF252, APL 14A050102, NSN 5925-01-535-7850, P/N ETN322500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>3). AQB-L253, APL 14A080020, NSN 5925-01-561-8728, P/N 1483D84G26, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</li> </ol> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX).</p> <p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.3.4.2.1</a> AND <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

OBSOLETE BREAKER INFO (19) - Surface Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302335A	ETN530300S31	5925-01-284-4214	LF250	150L	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch
REPLACEMENT BREAKER INFO (19) - Surface Unique AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR 115VAC SHUNT TRIP APPLICATIONS:</p> <ol style="list-style-type: none"> <li>1). AQB-LF250, APL 140903106, NSN 5925-01-255-1843, P/N 313C748G20/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>2). AQB-LF252, APL 14A040019, NSN 5925-01-531-3279, P/N ETN322500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>3). AQB-LF252, APL 14A990020, NSN 5925-01-532-4947, P/N ETN325200S31, ELECTRONIC WITH 150 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>4). AQB-L253, APL 14A080025, NSN 5925-01-532-5564, P/N 1483D84G28, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</li> </ol> <p>B. FOR 28VDC SHUNT TRIP APPLICATIONS:</p> <ol style="list-style-type: none"> <li>1). AQB-LF250, APL 140903106, NSN 5925-01-255-1843, P/N 313C748G20/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>2). AQB-LF252, APL 14A050102, NSN 5925-01-535-7850, P/N ETN322500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>3). AQB-L253, APL 14A080020, NSN 5925-01-561-8728, P/N 1483D84G26, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</li> </ol> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX).</p>					



**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (20) - Surface Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302336A	ETN530500S31	5925-01-276-3748	LF250	175L	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (20) - Surface Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR 115VAC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 140903107, NSN 5925-01-252-1689, P/N 313C748G22/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A040019, NSN 5925-01-531-3279, P/N ETN322500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-LF252, APL 14A990015, NSN 5925-01-532-4937, P/N ETN325300S31, ELECTRONIC WITH 175 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 4). AQB-L253, APL 14A080025, NSN 5925-01-532-5564, P/N 1483D84G28, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

**Table 320-B-35. Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued**

B. FOR 28VDC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 140903107, NSN 5925-01-252-1689, P/N 313C748G22/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050102, NSN 5925-01-535-7850, P/N ETN322500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080020, NSN 5925-01-561-8728, P/N 1483D84G26, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (21) - Surface Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302337A	ETN530600S31	5925-01-276-3747	LF250	175LM	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (21) - Surface Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

A. FOR 115VAC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 140903234, NSN 5925-01-419-3947, P/N 313C748G23/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A040019, NSN 5925-01-531-3279, P/N ETN322500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-LF252, APL 14A990015, NSN 5925-01-532-4937, P/N ETN325300S31, ELECTRONIC WITH 175 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 4). AQB-L253, APL 14A080025, NSN 5925-01-532-5564, P/N 1483D84G28, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION). REFER TO [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.

B. FOR 28VDC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 140903234, NSN 5925-01-419-3947, P/N 313C748G23/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050102, NSN 5925-01-535-7850, P/N ETN322500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080020, NSN 5925-01-561-8728, P/N 1483D84G26, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION). REFER TO [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-33](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

**Table 320-B-35. Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued**

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (22) - Surface Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302337L	ETN530 600S31	5925-01-276-3747	LF250	175LM	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch
REPLACEMENT BREAKER INFO (22) - Surface Unique AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. FOR 115VAC SHUNT TRIP APPLICATIONS:					
1). AQB-LF250, APL 140903234, NSN 5925-01-419-3947, P/N 313C748G23/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.					
2). AQB-LF252, APL 14A040019, NSN 5925-01-531-3279, P/N ETN322500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.					
3). AQB-LF252, APL 14A990015, NSN 5925-01-532-4937, P/N ETN325300S31, ELECTRONIC WITH 175 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.					
4). AQB-L253, APL 14A080025, NSN 5925-01-532-5564, P/N 1483D84G28, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION). REFER TO <a href="#">TABLE 320-B-21</a> OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.					

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued

**B. FOR 28VDC SHUNT TRIP APPLICATIONS:**

- 1). AQB-LF250, APL 140903234, NSN 5925-01-419-3947, P/N 313C748G23/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050102, NSN 5925-01-535-7850, P/N ETN322500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080020, NSN 5925-01-561-8728, P/N 1483D84G26, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION). REFER TO [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (23) - Surface Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302349A	ETN530800S31	5925-01-300-9744M1	LF250	225LM	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (23) - Surface Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued

**A. FOR 115VAC SHUNT TRIP APPLICATIONS:**

- 1). AQB-LF250, APL 140903235, NSN 5925-01-417-1940, P/N 313C748G25/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A040019, NSN 5925-01-531-3279, P/N ETN322500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-LF252, APL 14A990019, NSN 5925-01-532-4950, P/N ETN325400S31, ELECTRONIC WITH 225 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 4). AQB-L253, APL 14A080025, NSN 5925-01-532-5564, P/N 1483D84G28, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

**B. FOR 28VDC SHUNT TRIP APPLICATIONS:**

- 1). AQB-LF250, APL 140903235, NSN 5925-01-417-1940, P/N 313C748G25/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050102, NSN 5925-01-535-7850, P/N ETN322500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080020, NSN 5925-01-561-8728, P/N 1483D84G26, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (24) - Surface Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

140302350A	ETN530400S31	Incorrect NSN on APL	LF250	150LM	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch
REPLACEMENT BREAKER INFO (24) - Surface Unique AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR 115VAC SHUNT TRIP APPLICATIONS:</p> <ol style="list-style-type: none"> <li>1). AQB-LF250, APL 140903233, NSN 5925-01-419-3946, P/N 313C748G21/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>2). AQB-LF252, APL 14A040019, NSN 5925-01-531-3279, P/N ETN322500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>3). AQB-LF252, APL 14A990020, NSN 5925-01-532-4947, P/N ETN325200S31, ELECTRONIC WITH 150 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>4). AQB-L253, APL 14A080025, NSN 5925-01-532-5564, P/N 1483D84G28, ELECTRONIC, MNAUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION). REFER TO <a href="#">TABLE 320-B-21</a> OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.</li> </ol> <p>B. FOR 28VDC SHUNT TRIP APPLICATIONS:</p> <ol style="list-style-type: none"> <li>1). AQB-LF250, APL 140903233, NSN 5925-01-419-3946, P/N 313C748G21/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>2). AQB-LF252, APL 14A050102, NSN 5925-01-535-7850, P/N ETN322500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>3). AQB-L253, APL 14A080020, NSN 5925-01-561-8728, P/N 1483D84G26, ELECTRONIC, MNAUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION). REFER TO <a href="#">TABLE 320-B-21</a> OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.</li> </ol>					

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (25) - Surface Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302367A	ETN530700S31	5925-01-329-8214	LF250	225L	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (25) - Surface Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR 115VAC SHUNT TRIP APPLICATIONS:

1). AQB-LF250, APL 140903108, NSN 5925-01-252-1690, P/N 313C748G24/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

2). AQB-LF252, APL 14A040019, NSN 5925-01-531-3279, P/N ETN322500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

3). AQB-LF252, APL 14A990019, NSN 5925-01-532-4950, P/N ETN325400S31, ELECTRONIC WITH 225 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

4). AQB-L253, APL 14A080025, NSN 5925-01-532-5564, P/N 1483D84G28, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).



**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

**B. FOR 28VDC SHUNT TRIP APPLICATIONS:**

- 1). AQB-LF250, APL 140903108, NSN 5925-01-252-1690, P/N 313C748G24/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050102, NSN 5925-01-535-7850, P/N ETN322500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080020, NSN 5925-01-561-8728, P/N 1483D84G26, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (26) - Surface Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302368	ETN530900S31	5925-01-329-8213	LF250	250L	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (26) - Surface Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued

**A. FOR 115VAC SHUNT TRIP APPLICATIONS:**

- 1). AQB-LF250, APL 140903109, NSN 5925-01-252-1691, P/N 313C748G26/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A040019, NSN 5925-01-531-3279, P/N ETN322500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-LF252, APL 14A990024, NSN 5925-01-532-4940, P/N ETN325500S31, ELECTRONIC WITH 250 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 4). AQB-L253, APL 14A080025, NSN 5925-01-532-5564, P/N 1483D84G28, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

**B. FOR 28VDC SHUNT TRIP APPLICATIONS:**

- 1). AQB-LF250, APL 140903109, NSN 5925-01-252-1691, P/N 313C748G26/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050102, NSN 5925-01-535-7850, P/N ETN322500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080020, NSN 5925-01-561-8728, P/N 1483D84G26, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (27) - Surface Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

140302368A	ETN530900S31	5925-01-329-8213	LF250	250L	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch
REPLACEMENT BREAKER INFO (27) - Surface Unique AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR 115VAC SHUNT TRIP APPLICATIONS:</p> <p>1). AQB-LF250, APL 140903109, NSN 5925-01-252-1691, P/N 313C748G26/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>2). AQB-LF252, APL 14A040019, NSN 5925-01-531-3279, P/N ETN322500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>3). AQB-LF252, APL 14A990024, NSN 5925-01-532-4940, P/N ETN325500S31, ELECTRONIC WITH 250 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>4). AQB-L253, APL 14A080025, NSN 5925-01-532-5564, P/N 1483D84G28, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</p> <p>B. FOR 28VDC SHUNT TRIP APPLICATIONS:</p> <p>1). AQB-LF250, APL 140903109, NSN 5925-01-252-1691, P/N 313C748G26/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>2). AQB-LF252, APL 14A050102, NSN 5925-01-535-7850, P/N ETN322500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>3). AQB-L253, APL 14A080020, NSN 5925-01-561-8728, P/N 1483D84G26, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX).</p> <p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.3.4.2.1</a> AND <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p>					

**Table 320-B-35. Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued**

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (28) - Surface Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302380	ETN583700S31	5925-01-358-3960	A250	250NGH (400 Hz)	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (28) - Surface Unique AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:					
1). 115VAC SHUNT TRIP:					
a). AQB-A250, APL 140903180, NSN 5925-01-355-2419, P/N 83E2218, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NGH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.					
b). AQB-A252, APL 14A050013, NSN 5925-01-535-3572, P/N ETN317000S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.					
2). 28VDC SHUNT TRIP:					
a). AQB-A250, APL 140903180, NSN 5925-01-355-2419, P/N 83E2218, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NGH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.					
b). AQB-A252, APL 14A070179, NSN 5925-01-558-4969, P/N ETN317000S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.					
B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:					
1). 115VAC SHUNT TRIP:					
AQB-A252, APL 14A050013, NSN 5925-01-535-3572, P/N ETN317000S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).					

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

2). 28VDC SHUNT TRIP:

AQB-A252, APL 14A070179, NSN 5925-01-558-4969, P/N ETN317000S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (29) - Surface Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302504	ETN596100U01Z	5925-01-442-3724	A250	250NM (60 Hz and 250 Vdc)	115Vac, 60 Hz UVR; front connected; may have motor operator

REPLACEMENT BREAKER INFO (29) - Surface Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued

**A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR:**

- 1). AQB-A250, APL 14A070029, NSN 5925-01-555-0244, P/N 504C191G27/452D837G04, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). UVR INSTALLED.
- 2). AQB-A252, APL 14A070180, NSN 5925-01-558-4970, P/N ETN317000U01Z, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. UVR INSTALLED.

**B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR:**

AQB-A252, APL 14A070180, NSN 5925-01-558-4970, P/N ETN317000U01Z, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. UVR INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

**C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR:** AQB-A250, APL 14A070029, NSN 5925-01-555-0244, P/N 504C191G27/452D837G04, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). UVR INSTALLED.

**D. FOR DC BREAKER APPLICATIONS WITH MOTOR OPERATOR:** NO REPLACEMENTS ARE AVAILABLE.

**NOTE 2:** FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

**A.** THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE UVR (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

**B.** IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

**NOTE 3:** UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**OBSOLETE BREAKER INFO (30) - Surface Unique AQB/NQB-250**

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302505	ETN583110S31	5925-01-443-8590	A250	125NH (400 Hz)	1a, 1b aux switch, 115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch, may have motor operator

**REPLACEMENT BREAKER INFO (30) - Surface Unique AQB/NQB-250**

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

- a). AQB-A250, APL 14A070027, NSN 5925-01-555-0179, P/N 315C574G18/452D377G01/452D379G04, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- b). AQB-A252, APL 14A050094, NSN 5925-01-535-7858, P/N ETN317010S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

2). 28VDC SHUNT TRIP:

- a). AQB-A250, APL 14A070027, NSN 5925-01-555-0179, P/N 315C574G18/452D377G01/452D379G04, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- b). AQB-A252, APL 14A050092, NSN 5925-01-535-7848, P/N ETN317010S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

AQB-A252, APL 14A050094, NSN 5925-01-535-7858, P/N ETN317010S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

2). 28VDC SHUNT TRIP:

AQB-A252, APL 14A050092, NSN 5925-01-535-7848, P/N ETN317010S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (31) - Surface Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302506	ETN596310S36	5925-01-443-8562	NQB-A250	N/A	1a, 1b aux switch, 450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch, may have motor operator

REPLACEMENT BREAKER INFO (31) - Surface Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED, THE SHUNT TRIP VOLTAGE RATING REQUIRED, AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 450VAC SHUNT TRIP:

- a). NQB-A250, APL 14A070056, NSN 5925-01-555-7547, P/N 83E4340, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- b). NQB-A252, APL 14A050101, NSN 5925-01-535-7849, P/N ETN319910S36, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- c). NQB-A253, APL 14A070124, NSN 5925-01-558-2872, P/N 1483D82G06/1483D92G05/1483D90G01, MANUFACTURED BY CUTLER-HAMMER. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.



**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

2). 120VDC SHUNT TRIP:

- a). NQB-A250, APL14A070056, NSN 5925-01-555-7547, P/N 83E4340, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- b). NQB-A252, APL 14A050100, NSN 5925-01-535-7860, P/N ETN319910S32, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- c). NQB-A253, APL 14A070122, NSN 5925-01-558-2875, P/N 1483D82G06/1483D92G02/1483D90G01, MANUFACTURED BY CUTLER-HAMMER. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 450VAC SHUNT TRIP:

NQB-A252, APL 14A050101, NSN 5925-01-535-7849, P/N ETN319910S36, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

2). 120VDC SHUNT TRIP:

NQB-A252, APL 14A050100, NSN 5925-01-535-7860, P/N ETN319910S32, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 450VAC SHUNT TRIP:

NQB-A250, APL 14A070056, NSN 5925-01-555-7547, P/N 83E4340, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

2). 120VDC SHUNT TRIP:

NQB-A250, APL14A070056, NSN 5925-01-555-7547, P/N 83E4340, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

D. FOR ANY DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS ("A" CONTACT, "B" CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

**Table 320-B-35. Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued**

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**OBSOLETE BREAKER INFO (32) - Surface Unique AQB/NQB-250**

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302507	ETN583100S31F	5925-01-448-9005	A250	125NH (400 Hz)	1a, 1b aux switch, 115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch, front connected, may have motor operator

**REPLACEMENT BREAKER INFO (32) - Surface Unique AQB/NQB-250**

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

- a). AQB-A250, APL 14A070028, NSN 5925-01-555-0242, P/N 83E7092, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- b). AQB-A252, APL 14A070181, NSN 5925-01-557-7692, P/N ETN317000S31F, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

2). 28VDC SHUNT TRIP:

- a). AQB-A250, APL 14A070028, NSN 5925-01-555-0242, P/N 83E7092, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- b). AQB-A252, APL 14A070075, NSN 5925-01-558-2809, P/N ETN317000S30F, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

AQB-A252, APL 14A070181, NSN 5925-01-557-7692, P/N ETN317000S31F, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

2). 28VDC SHUNT TRIP:

AQB-A252, APL 14A070075, NSN 5925-01-558-2809, P/N ETN317000S30F, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (33) - Surface Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302509	ETN596300U01Z	5925-01-451-5805	NQB-A250	N/A	115Vac, 60 Hz UVR, front connected, may have motor operator

**Table 320-B-35. Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued**

REPLACEMENT BREAKER INFO (33) - Surface Unique AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR:					
1). NQB-A250, APL 14A070057, NSN 5925-01-555-7546, P/N 83E2210, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). UVR INSTALLED.					
2). NQB-A252, APL 14A070086, NSN 5925-01-558-2799, P/N ETN319900U01Z, MANUFACTURED BY SPD. UVR INSTALLED.					
B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR:					
NQB-A252, APL 14A070086, NSN 5925-01-558-2799, P/N ETN319900U01Z, MANUFACTURED BY SPD. UVR INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).					
C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR: NQB-A250, APL 14A070057, NSN 5925-01-555-7546, P/N 83E2210, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). UVR INSTALLED.					
D. FOR DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE UVR (REFER TO <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX).					
B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.3.4.4</a> AND <a href="#">TABLES 320-B-3</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (34) - Surface Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
143482199	ETN596000S31	5925-01-329-8213	A250	250N (60 Hz and 250 Vdc)	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (34) - Carrier Unique AQB/NQB-A101					

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and  
Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED, SHUNT TRIP VOLTAGE RATING REQUIRED, INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

- a). AQB-A250, APL 140903219M, NSN 5925-01-297-5776, P/N 61E7903, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- b). AQB-A252, APL 14A050013, NSN 5925-01-535-3572, P/N ETN317000S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- c). AQB-A253, APL 14A070171, 5925-01-559-6373, P/N 1483D84G22, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. REFER TO [TABLE 320-B-19](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 4. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR HI.

2). 28VDC SHUNT TRIP:

- a). AQB-A250, APL 140903219M, NSN 5925-01-297-5776, P/N 61E7903, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- b). AQB-A252, APL 14A070179, NSN 5925-01-558-4969, P/N ETN317000S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- c). AQB-A253, APL 14A070170, NSN 5925-01-559-6384, P/N 1483D84G20, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. REFER TO [TABLE 320-B-19](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 4. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR HI.

B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

**Table 320-B-35.** Obsolete Surface Unique AQB/NQB-250 Breakers and Replacements - Continued

<p>1). 115VAC SHUNT TRIP:                      AQB-A252, APL 14A050013, NSN 5925-01-535-3572, P/N ETN317000S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p> <p>2). 28VDC SHUNT TRIP:                      AQB-A252, APL 14A070179, NSN 5925-01-558-4969, P/N ETN317000S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p> <p>C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE A 115VAC OR 28VDC SHUNT TRIP RATING: AQB-A250, APL 140903219M, NSN 5925-01-297-5776, P/N 61E7903, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>D. FOR ANY DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX).</p> <p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.3.4.2.1</a> AND <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p> <p>C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.3.4.4</a> AND <a href="#">TABLES 320-B-3</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>
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**Table 320-B-36.** Obsolete Sub Unique AQB/NQB-250 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Sub Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES

**Table 320-B-36.** Obsolete Sub Unique AQB/NQB-250 Breakers and  
Replacements - Continued

T140302050	ETN530610	5925-01-105-4405	LF250	175LM	1a, 1b aux switch
REPLACEMENT BREAKER INFO (1) - Sub Unique AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. AQB-LF250, APL T14A070068, NSN 5925-01-105-4405, P/N 313C748G23/452D379G02, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.</p> <p>B. AQB-LF252, T14A070106, NSN 5925-01-535-7869, P/N ETN322510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.</p> <p>C. AQB-L253, APL T14A080019, NSN 5925-01-561-8731, P/N 1483D83G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). AUX SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION). REFER TO <a href="#">TABLE 320-B-21</a> OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX).</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (2) - Sub Unique AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
T140302051	ETN530410	5925-01-105-4406	LF250	150LM	1a, 1b aux switch
REPLACEMENT BREAKER INFO (2) - Sub Unique AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p>					

**Table 320-B-36.** Obsolete Sub Unique AQB/NQB-250 Breakers and Replacements - Continued

- A. AQB-LF250, APL T14A090040, NSN 5925-01-345-5510, P/N 83E2437, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.
- B. AQB-LF252, T14A070106, NSN 5925-01-535-7869, P/N ETN322510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.
- C. AQB-L253, APL T14A080019, NSN 5925-01-561-8731, P/N 1483D83G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). AUX SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION). REFER TO [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (3) - Sub Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
T140302098	ETN531010	5925-01-155-8518	LF250	250LM	1a, 1b aux switch

REPLACEMENT BREAKER INFO (3) - Sub Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

- A. AQB-LF250, APL T14A070108, NSN 5925-01-557-7653, P/N 63E6091, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.
- B. AQB-LF252, T14A070106, NSN 5925-01-535-7869, P/N ETN322510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.
- C. AQB-L253, APL T14A080019, NSN 5925-01-561-8731 P/N 1483D83G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). AUX SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).



**Table 320-B-36.** Obsolete Sub Unique AQB/NQB-250 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (4) - Sub Unique AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
T140302099	ETN530310	5925-01-097-1543	LF250	150L	1a, 1b aux switch

REPLACEMENT BREAKER INFO (4) - Sub Unique AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. AQB-LF250, T140901261, NSN 5925-01-097-1543, P/N 313C748G20/452D379G02, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.

B. AQB-LF252, T14A070106, NSN 5925-01-535-7869, P/N ETN322510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.

C. AQB-L253, APL T14A080019, NSN 5925-01-561-8731, P/N 1483D83G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). AUX SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-37.** Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Carrier/Surface/Sub AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300418	ETN5958	5925-01-432-7603	A250	225N (60 Hz and 250 Vdc)	May have motor operator
REPLACEMENT BREAKER INFO (1) - Carrier/Surface/Sub AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED, INSTANTANEOUS SETTING OF THE OBSOLETE SPD BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR:</p> <p>1). AQB-A250, APL 140902909, NSN 5925-01-306-0120, P/N 313C682G24, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</p> <p>2). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.</p> <p>3). AQB-A253, APL 14A010018, NSN 5925-01-493-8105, P/N 1483D82G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). REFER TO <a href="#">TABLE 320-B-19</a> OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 4. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR HI.</p> <p>B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR:</p> <p>AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400HZ).</p> <p>C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR: AQB-A250, APL 140902909, NSN 5925-01-306-0120, P/N 313C682G24, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</p> <p>D. FOR DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.3.4.4</a> AND <a href="#">TABLES 320-B-3</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p>					

**Table 320-B-37.** Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and Replacements - Continued

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (2) - Carrier/Surface/Sub AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300419	ETN5956	5925-00-499-0088	A250	175N (60 Hz and 250 Vdc)	May have motor operator
REPLACEMENT BREAKER INFO (2) - Carrier/Surface/Sub AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR:					
1). AQB-A250, APL 14A070052, NSN 5925-00-499-0088, P/N 313C682G22, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
2). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.					
3). AQB-A252, APL 14A010013, NSN 5925-01-493-2196, P/N ETN3155, ELECTRONIC WITH 175 AMP RATING PLUG, MANUFACTURED BY SPD.					
4). AQB-A253, APL 14A010018, NSN 5925-01-493-8105, P/N 1483D82G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS).					
B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR: 1). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400HZ). 2). AQB-A252, APL 14A010013, NSN 5925-01-493-2196, P/N ETN3155, ELECTRONIC WITH 175 AMP RATING PLUG, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400HZ).					
C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR:					
1). AQB-A250, APL 14A070052, NSN 5925-00-499-0088, P/N 313C682G22, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
D. FOR DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					

**Table 320-B-37. Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and Replacements - Continued**

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.3.4.4</a> AND <a href="#">TABLES 320-B-3</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (3) - Carrier/Surface/Sub AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300420	ETN5954 or ETN595410S31	5925-01-333-9914	A250	150N (60 Hz and 250 Vdc)	May have 1a, 1b aux switch, may have 115Vac, 60Hz/28Vdc shunt trip and shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (3) - Carrier/Surface/Sub AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED, SHUNT TRIP VOLTAGE RATING REQUIRED (IF APPLICABLE) AND WHETHER OR NOT AN AUX SWITCH OR MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING CONFIGURATIONS:					
1). WITHOUT SHUNT TRIP AND WITHOUT AUX SWITCH:					
a). AQB-A250, APL 140901280, NSN 5925-01-229-4448, P/N 313C682G20, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
b). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.					
c). AQB-A252, APL 14A990041, NSN 5925-01-532-5309, P/N ETN3153, ELECTRONIC WITH 150 AMP RATING PLUG, MANUFACTURED BY SPD.					
d). AQB-A253, APL 14A010018, NSN 5925-01-493-8105, P/N 1483D82G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS).					

**Table 320-B-37.** Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and  
Replacements - Continued

2). 115VAC SHUNT TRIP AND 1A, 1B AUX SWITCH:

- a). AQB-A250, APL 14A070054, NSN 5925-01-555-7548, P/N 313C682G20/452D377G05/452D379G02, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- b). AQB-A252, APL 14A050094, NSN 5925-01-535-7858, P/N ETN317010S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- c). AQB-A253, APL 14A080013, NSN 5925-01-561-1994, P/N 1483D85G17, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

3). 28VDC SHUNT TRIP AND 1A, 1B AUX SWITCH:

- a). AQB-A250, APL 14A070054, NSN 5925-01-555-7548, P/N 313C682G20/452D377G05/452D379G02, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- b). AQB-A252, APL 14A050092, NSN 5925-01-535-7848, P/N ETN317010S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- c). AQB-A253, APL 14A080011, NSN 5925-01-561-1962, P/N 1483D85G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

**B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING CONFIGURATIONS:**

1). WITHOUT SHUNT TRIP AND WITHOUT AUX SWITCH:

- a). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).
- b). AQB-A252, APL 14A990041, NSN 5925-01-532-5309, P/N ETN3153, ELECTRONIC WITH 150 AMP RATING PLUG, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

2). 115VAC SHUNT TRIP AND 1A, 1B AUX SWITCH:

AQB-A252, APL 14A050094, NSN 5925-01-535-7858, P/N ETN317010S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

3). 28VDC SHUNT TRIP AND 1A, 1B AUX SWITCH:

AQB-A252, APL 14A050092, NSN 5925-01-535-7848, P/N ETN317010S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

**Table 320-B-37.** Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and  
Replacements - Continued

C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING CONFIGURATIONS:

1). WITHOUT SHUNT TRIP AND WITHOUT AUX SWITCH:

AQB-A250, APL 140901280, NSN 5925-01-229-4448, P/N 313C682G20, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

2). 115VAC SHUNT TRIP AND 1A, 1B AUX SWITCH:

AQB-A250, APL 14A070054, NSN 5925-01-555-7548, P/N 313C682G20/452D377G05/452D379G02, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

3). 28VDC SHUNT TRIP AND 1A, 1B AUX SWITCH:

AQB-A250, APL 14A070054, NSN 5925-01-555-7548, P/N 313C682G20/452D377G05/452D379G02, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

D. FOR ANY DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER (IF SUPPLIED WITH 1A, 1B AUX SWITCH) AND THE REPLACEMENT BREAKERS WITH 1A, 1B AUX SWITCH CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER (IF SUPPLIED WITH SHUNT TRIP) AND THE REPLACEMENT BREAKERS WITH SHUNT TRIP CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

C. THE OBSOLETE SPD BREAKER (IF SUPPLIED WITH A SHUNT TRIP) AND THE REPLACEMENT BREAKERS WITH A SHUNT TRIP CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (4) - Carrier/Surface/Sub AQB/NQB-250

**Table 320-B-37.** Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and  
Replacements - Continued

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300421	ETN5952	5925-01-233-5705	A250	125N (60 Hz and 250 Vdc)	May have 1a, 1b aux switch, may have motor operator
REPLACEMENT BREAKER INFO (4) - Carrier/Surface/Sub AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON WHETHER OR NOT AN AUX SWITCH OR MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:</p> <p>1). WITHOUT AUX SWITCH:  a) AQB-A250, APL 140902910, NSN 5925-01-173-1114, P/N 313C682G18, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).  b) AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.  c) AQB-A253, APL 14A010018, NSN 5925-01-493-8105, P/N 1483D82G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS).</p> <p>2). 1A, 1B AUX SWITCH:  AQB-A252, APL 14A090009, NSN 5925-01-573-0249, P/N ETN317010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p> <p>C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:</p> <p>1). WITHOUT AUX SWITCH:  AQB-A250, APL 140902910, NSN 5925-01-173-1114, P/N 313C682G18, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</p> <p>2). 1A, 1B AUX SWITCH:  AQB-A250, APL 14A090028, NSN 5925-01-573-0253, P/N 83E6784, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.</p> <p>D. FOR ANY DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.</p>					

**Table 320-B-37. Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and Replacements - Continued**

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER (IF SUPPLIED WITH 1A, 1B AUX SWITCH) AND THE REPLACEMENT BREAKERS WITH 1A, 1B AUX SWITCH CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**OBSOLETE BREAKER INFO (5) - Carrier/Surface/Sub AQB/NQB-250**

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300459	ETN 5963MODIFIED	5925-00-345-7746	NQB-A250	N/A	May have 1a, 1b aux switch, may have motor operator

**REPLACEMENT BREAKER INFO (5) - Carrier/Surface/Sub AQB/NQB-250**

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED AND WHETHER OR NOT AN AUX SWITCH OR MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:

1). WITHOUT AUX SWITCH:

- a). NQB-A250, APL 140901635, NSN 5930-00-900-0247, P/N S313C682G36, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- b). NQB-A252, APL 14A050110, NSN 5925-01-480-0730, P/N ETN3199, MANUFACTURED BY SPD.
- c). NQB-A253, APL 14A070003, NSN 5925-01-548-7748, P/N 1483D82G06, MANUFACTURED BY CUTLER-HAMMER.

2). 1A, 1B AUX SWITCH:

- a). NQB-A250, APL 14A090026, NSN 5925-01-573-0252, P/N 313C682G36/452D379G02, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.
- b). NQB-A252, APL 14A040014, NSN 5925-01-526-3022, P/N ETN319910, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.
- c). NQB-A253, APL 14A090027, NSN 5925-01-573-0237, P/N 1483D83G17, MANUFACTURED BY CUTLER-HAMMER. AUX SWITCH INSTALLED.



**Table 320-B-37.** Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and  
Replacements - Continued

B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:

1). WITHOUT AUX SWITCH:

NQB-A252, APL 14A050110, NSN 5925-01-480-0730, P/N ETN3199, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400HZ).

2). 1A, 1B AUX SWITCH:

NQB-A252, APL 14A040014, NSN 5925-01-526-3022, P/N ETN319910, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400HZ).

D. FOR ANY DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER (IF SUPPLIED WITH 1A, 1B AUX SWITCH) AND THE REPLACEMENT BREAKERS WITH 1A, 1B AUX SWITCH CITED ABOVE HAVE THREE LEADS ("A" CONTACT, "B" CONTACT, AND COMMON) WIRED OUT FOR THE AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (6) - Carrier/Surface/Sub AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300513	ETN5302	5925-01-233-5623	LF250	125LM	None

REPLACEMENT BREAKER INFO (6) - Carrier/Surface/Sub AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-37.** Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and Replacements - Continued

- A. AQB-LF250, APL 140901260, NSN 5925-01-233-5172, P/N S313C748G19, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- C. AQB-LF252, APL 14A990003, NSN 5925-01-472-9133, P/N ETN3251, ELECTRONIC WITH 125 AMP RATING PLUG, MANUFACTURED BY SPD.
- D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION). REFER TO [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 4 OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, OR 3.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (7) - Carrier/Surface/Sub AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300514	ETN5303	5925-01-229-4439	LF250	150L	None

REPLACEMENT BREAKER INFO (7) - Carrier/Surface/Sub AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

- A. AQB-LF250, APL 140901261, NSN 5925-01-442-0650, P/N 313C748G20, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- C. AQB-LF252, APL 14A990013, NSN 5925-01-483-1601, P/N ETN3252, ELECTRONIC WITH 150 AMP RATING PLUG, MANUFACTURED BY SPD.
- D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

**Table 320-B-37.** Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (8) - Carrier/Surface/Sub AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300515	ETN5304	5925-01-226-3048	LF250	150LM	None
REPLACEMENT BREAKER INFO (8) - Carrier/Surface/Sub AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. AQB-LF250, APL 140901262, NSN 5925-01-229-4444, P/N 313C748G21, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.					
C. AQB-LF252, APL 14A990013, NSN 5925-01-483-1601, P/N ETN3252, ELECTRONIC WITH 150 AMP RATING PLUG, MANUFACTURED BY SPD.					
D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION). REFER TO <a href="#">TABLE 320-B-21</a> OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (9) - Carrier/Surface/Sub AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300517	ETN5306	5925-01-228-8585	LF250	175LM	None

**Table 320-B-37.** Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and Replacements - Continued

REPLACEMENT BREAKER INFO (9) - Carrier/Surface/Sub AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. AQB-LF250, APL 140901264, NSN 5295-01-199-4401, P/N 313C748G23, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</p> <p>B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.</p> <p>C. AQB-LF252, APL 14A990014, NSN 5925-01-544-0001, P/N ETN3253, ELECTRONIC WITH 175 AMP RATING PLUG, MANUFACTURED BY SPD.</p> <p>D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION). REFER TO <a href="#">TABLE 320-B-21</a> OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (10) - Carrier/Surface/Sub AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300518	ETN5307	5925-01-233-5706	LF250	225L	None
REPLACEMENT BREAKER INFO (10) - Carrier/Surface/Sub AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p>					

**Table 320-B-37.** Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and Replacements - Continued

A. AQB-LF250, APL 140901265, NSN 5925-01-233-5173, P/N S313C748G24, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).  
 B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.  
 C. AQB-LF252, APL 14A990027, NSN 5925-01-529-8157, P/N ETN3254, ELECTRONIC WITH 225 AMP RATING PLUG, MANUFACTURED BY SPD.  
 D. AQB-L253, APL 14A000012, 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (11) - Carrier/Surface/Sub AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300520	ETN5309	5925-01-105-0925	LF250	250L	None

REPLACEMENT BREAKER INFO (11) - Carrier/Surface/Sub AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. AQB-LF250, APL 140901980, NSN 5925-01-243-1611, P/N S313C748G26, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).  
 B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.  
 C. AQB-LF252, APL 14A990002, NSN 5925-01-465-9581, P/N ETN3255, ELECTRONIC WITH 250 AMP RATING PLUG, MANUFACTURED BY SPD.  
 D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01 IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX.

**Table 320-B-37. Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and Replacements - Continued**

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (12) - Carrier/Surface/Sub AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302050	ETN530610	5925-01-105-4405	LF250	175LM	1a, 1b aux switch
REPLACEMENT BREAKER INFO (12) - Carrier/Surface/Sub AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. AQB-LF250, APL 14A070061, NSN 5925-01-105-4405, P/N 313C748G23/452D379G02, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.					
B. AQB-LF252, APL 14A050106, NSN 5925-01-535-7869, P/N ETN322510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.					
C. AQB-L253, APL 14A080018, NSN 5925-01-561-8731, P/N 1483D83G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). AUX SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION). REFER TO <a href="#">TABLE 320-B-21</a> OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
THE OBSOLETE SPD BREAKER AND ALL THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS ("A" CONTACT, "B" CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX).					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (13) - Carrier/Surface/Sub AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302051	ETN530410	5925-01-105-4406	LF250	150LM	1a, 1b aux switch

**Table 320-B-37.** Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and Replacements - Continued

REPLACEMENT BREAKER INFO (13) - Carrier/Surface/Sub AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. AQB-LF250, APL 140903190, NSN 5925-01-345-5510, P/N 83E2437, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.</p> <p>B. AQB-LF252, APL 14A050106, NSN 5925-01-535-7869, P/N ETN322510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.</p> <p>C. AQB-L253, APL 14A080018, NSN 5925-01-561-8731, P/N 1483D83G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). AUX SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01 IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION). REFER TO <a href="#">TABLE 320-B-21</a> OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX).</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (14) - Carrier/Surface/Sub AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302098	ETN531010	5925-01-155-8518	LF250	250LM	1a, 1b aux switch
REPLACEMENT BREAKER INFO (14) - Carrier/Surface/Sub AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p>					

**Table 320-B-37.** Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and Replacements - Continued

- A. AQB-LF250, APL 14A070178, NSN 5925-01-557-7653, P/N 63E6091, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.
- B. AQB-LF252, APL 14A050106, NSN 5925-01-535-7869, P/N ETN322510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.
- C. AQB-L253, APL 14A080018, NSN 5925-01-561-8731, P/N 1483D83G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). AUX SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (15) - Carrier/Surface/Sub AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302351	ETN53010S36	5925-01-298-2811	LF250	125L	1a, 1b aux switch, 450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (15) - Carrier/Surface/Sub AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:



**Table 320-B-37.** Obsolete Carrier/Surface/Sub AQB/NQB-250 Breakers and  
Replacements - Continued

**A. FOR 450VAC SHUNT TRIP APPLICATIONS:**

- 1). AQB-LF250, APL 14A070064, NSN 5925-01-555-7541, P/N 313C748G18/452D377G07/452D379G02, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050108, NSN 5925-01-535-7870, P/N ETN322510S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- 3). AQB-L253, APL14A080028, NSN 5925-01-561-8736, P/N 1483D85G81, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

**B. FOR 120VDC SHUNT TRIP APPLICATIONS:**

- 1). AQB-LF250, APL 14A070064, NSN 5925-01-555-7541, P/N 313C748G18/452D377G07/452D379G02, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050107, NSN 5925-01-535-7862, P/N ETN322510S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080023, NSN 5925-01-561-8729, P/N 1483D85G57, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Carrier/Surface AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300416	ETN5960	5925-01-227-2559	A250	250N (60 Hz and 250 Vdc)	May have motor operator
REPLACEMENT BREAKER INFO (1) - Carrier/Surface AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR: 1). AQB-A250, APL 140903272, NSN 5925-01-452-0162, P/N 313C682G26, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE)  2). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.  3). AQB-A253, APL 14A010018, NSN 5925-01-493-8105, P/N 1483D82G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS).</p> <p>B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR:  AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p> <p>C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR: AQB-A250, APL 140903272, NSN 5925-01-452-0162, P/N 313C682G26, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</p> <p>D. FOR DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.3.4.4</a> AND <a href="#">TABLES 320-B-3</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (2) - Carrier/Surface AQB/NQB-250					

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300512	ETN5301	5925-01-230-3198	LF250	125L	None
REPLACEMENT BREAKER INFO (2) - Carrier/Surface AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. AQB-LF250, APL 140901259, NSN 5925-01-360-8673, P/N S313C748G18, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</p> <p>B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.</p> <p>C. AQB-LF252, APL 14A990003, NSN 5925-01-472-9133, P/N ETN3251, ELECTRONIC WITH 125 AMP RATING PLUG, MANUFACTURED BY SPD.</p> <p>D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (3) - Carrier/Surface AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300516	ETN5305	5925-01-144-7581	LF250	175L	None
REPLACEMENT BREAKER INFO (3) - Carrier/Surface AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p>					

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements - Continued

- A. AQB-LF250, APL 14A990037, NSN 5295-01-189-9250, P/N 313C748G22, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- C. AQB-LF252, APL 14A990014, NSN 5925-01-544-0001, P/N ETN3253, ELECTRONIC WITH 175 AMP RATING PLUG, MANUFACTURED BY SPD.
- D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (4) - Carrier/Surface AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300519	ETN5308	5925-01-185-5155	LF250	225LM	None

REPLACEMENT BREAKER INFO (4) - Carrier/Surface AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

- A. AQB-LF250, APL 140901266, NSN 5925-01-229-4445, P/N 313C748G25, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- C. AQB-LF252, APL 14A990027, NSN 5925-01-529-8157, P/N ETN3254, ELECTRONIC WITH 225 AMP RATING PLUG, MANUFACTURED BY SPD.
- D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX.

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (5) - Carrier/Surface AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300521	ETN5310	5925-01-111-8431	LF250	250LM	None
REPLACEMENT BREAKER INFO (5) - Carrier/Surface AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. AQB-LF250, APL 140901268, NSN 5295-01-111-8431, P/N 313C748G27, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).					
B. AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.					
C. AQB-LF252, APL 14A990002, NSN 5925-01-465-9581, P/N ETN3255, ELECTRONIC WITH 250 AMP RATING PLUG, MANUFACTURED BY SPD.					
D. AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (6) - Carrier/Surface AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300522	ETN5961	5925-01-222-6182	A250 2	50NM (60 Hz and 250 Vdc)	May have motor operator
REPLACEMENT BREAKER INFO (6) - Carrier/Surface AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements - Continued

**A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR:**

- 1). AQB-A250, APL 140900128, NSN 5925-01-272-3805, P/N 313C682G27, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- 2). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.
- 3). AQB-A253, APL 14A010018, NSN 5925-01-493-8105, P/N 1483D82G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS).

**B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR:**

AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

**C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR:**

AQB-A250, APL 140900128, NSN 5925-01-272-3805, P/N 313C682G27, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

**D. FOR DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.**

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**OBSOLETE BREAKER INFO (7) - Carrier/Surface AQB/NQB-250**

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300533	ETN5953	5925-01-031-9909	A250	125NM (60 Hz and 250 Vdc)	May have motor operator

**REPLACEMENT BREAKER INFO (7) - Carrier/Surface AQB/NQB-250**

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED, INSTANTANEOUS SETTING OF THE OBSOLETE SPD BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements - Continued

**A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR:**

- 1). AQB-A250, APL 140901279, NSN 0000-LL-CDO-4172, P/N S313C682G19, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125NM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- 2). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.
- 3). AQB-A252, APL 14A000001, NSN 5925-01-532-6261, P/N ETN3152, ELECTRONIC WITH 125 AMP RATING PLUG, MANUFACTURED BY SPD.
- 4). AQB-A253, APL 14A010018, NSN 5925-01-493-8105, P/N 1483D82G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). REFER TO [TABLE 320-B-19](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO.

**B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR:**

- 1). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400HZ).
- 2). AQB-A252, APL 14A000001, NSN 5925-01-532-6261, P/N ETN3152, ELECTRONIC WITH 125 AMP RATING PLUG, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988, (115VAC, 60HZ/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400HZ).

**C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR:**

AQB-A250, APL 140901279, NSN 0000-LL-CDO-4172, P/N S313C682G19, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125NM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

**D. FOR DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.**

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (8) - Carrier/Surface AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300599	ETN5955	5925-01-222-6181	A250	150NM (60 Hz and 250 Vdc)	May have motor operator
REPLACEMENT BREAKER INFO (8) - Carrier/Surface AQB/NQB-250					

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC), INSTANTANEOUS SETTING OF THE OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR: 1). AQB-A250, APL 140901281, NSN 5925-01-206-3116, P/N S313C682G21, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150NM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

2). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.

3). AQB-A252, APL 14A990041, NSN 5925-01-532-5309, P/N ETN3153, ELECTRONIC WITH 150 AMP RATING PLUG, MANUFACTURED BY SPD.

4). AQB-A253, APL 14A010018, NSN 5925-01-493-8105, P/N 1483D82G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). REFER TO [TABLE 320-B-19](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO OR 2.

B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR:

1). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

2). AQB-A252, APL 14A990041, NSN 5925-01-532-5309, P/N ETN3153, ELECTRONIC WITH 150 AMP RATING PLUG, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR: AQB-A250, APL 140901281, NSN 5925-01-206-3116, P/N S313C682G21, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

D. FOR DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.



**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

OBSOLETE BREAKER INFO (9) - Carrier/Surface AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301358	ETN5834	5925-01-233-5684	A250	175NH (400 Hz)	May have 1a, 1b aux switch, may have motor operator
REPLACEMENT BREAKER INFO (9) - Carrier/Surface AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON WHETHER OR NOT AN AUX SWITCH OR MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:</p> <p>1). WITHOUT AUX SWITCH:</p> <p>a). AQB-A250, APL 14A060060, NSN 5925-01-100-4027, P/N 315C574G22, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</p> <p>b). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.</p> <p>2). 1A, 1B AUX SWITCH:</p> <p>a). AQB-A250, APL 14A090024, NSN 5925-01-573-0266, P/N 315C574G22/452D379G02, THERMAL MAGNETIC WITH TRIP UNIT TYPE 175NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.</p> <p>b). AQB-A252, APL 14A090009, NSN 5925-01-573-0249, P/N ETN317010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.</p> <p>B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:</p> <p>1). WITHOUT AUX SWITCH:</p> <p>AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p> <p>2). 1A, 1B AUX SWITCH:</p> <p>AQB-A252, APL 14A090009, NSN 5925-01-573-0249, P/N ETN317010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p>					

**Table 320-B-38. Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements - Continued**

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER (IF SUPPLIED WITH 1A, 1B AUX SWITCH) AND THE REPLACEMENT BREAKERS WITH 1A, 1B AUX SWITCH CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (10) - Carrier/Surface AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301359	ETN5832	5925-01-233-5685	A250	150NH (400 Hz)	May have 1a, 1b aux switch, may have motor operator

REPLACEMENT BREAKER INFO (10) - Carrier/Surface AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON WHETHER OR NOT AN AUX SWITCH OR MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:

1). WITHOUT AUX SWITCH:

- a). AQB-A250, APL 140902762, P/N S315C574G20, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- b). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.

2). 1A, 1B AUX SWITCH:

- a). AQB-A250, APL 14A090025, NSN 5925-01-573-0267, P/N 64E9698, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.
- b). AQB-A252, APL 14A090009, NSN 5925-01-573-0249, P/N ETN317010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:

1). WITHOUT AUX SWITCH:

AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

2. 1A, 1B AUX SWITCH:

AQB-A252, APL 14A090009, NSN 5925-01-573-0249, P/N ETN317010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400HZ).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER (IF SUPPLIED WITH 1A, 1B AUX SWITCH) AND THE REPLACEMENT BREAKERS WITH 1A, 1B AUX SWITCH CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (11) - Carrier/Surface AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301360	ETN5831	5925-01-233-5686	A250	125NH (400 Hz)	May have 1a, 1b aux switch, may have motor operator

REPLACEMENT BREAKER INFO (11) - Carrier/Surface AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON WHETHER OR NOT AN AUX SWITCH OR MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements - Continued

1). WITHOUT AUX SWITCH:

AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SET FREQUENCY SELECTOR SWITCH TO 400 HZ.

2). 1A, 1B AUX SWITCH:

a). AQB-A250, APL 14A090029, NSN 5925-01-573-0256, P/N 315C574G18/452D379G02, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.

b). AQB-A252, APL 14A090009, NSN 5925-01-573-0249, P/N ETN317010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.

**B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:**

1). WITHOUT AUX SWITCH:

AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

2). 1A, 1B AUX SWITCH:

AQB-A252, APL 14A090009, NSN 5925-01-573-0249, P/N ETN317010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400HZ).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER (IF SUPPLIED WITH 1A, 1B AUX SWITCH) AND THE REPLACEMENT BREAKERS WITH 1A, 1B AUX SWITCH CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (12) - Carrier/Surface AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
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**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements - Continued

140301651	ETN5835	5925-01-193-6055	A250	225NH (400 Hz)	May have motor operator
REPLACEMENT BREAKER INFO (12) - Carrier/Surface AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:  1). AQB-A250, APL 140901642, NSN 5925-01-561-1961, P/N S315C574G24, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).  2). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.</p> <p>B. FOR APPLICATIONS WITH MOTOR OPERATOR:  AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.3.4.4</a> AND <a href="#">TABLES 320-B-3</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (13) - Carrier/Surface AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301659	ETN5836	5925-01-233-5687	A250	250NH (400 Hz)	May have motor operator
REPLACEMENT BREAKER INFO (13) - Carrier/Surface AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p>					

**Table 320-B-38. Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements - Continued**

**A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:**

- 1). AQB-A250, APL 140903070, NSN 5925-01-050-9032, P/N 315C574G26, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- 2). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.

**B. FOR APPLICATIONS WITH MOTOR OPERATOR:**

AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**OBSOLETE BREAKER INFO (14) - Carrier/Surface AQB/NQB-250**

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302039	ETN530200S31	5925-01-024-5495	LF250	125LM	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch

**REPLACEMENT BREAKER INFO (14) - Carrier/Surface AQB/NQB-250**

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND INSTANTANEOUS SETTING OF THE OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

A. FOR 115VAC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 140903236, NSN 5925-01-419-3944, P/N 313C748G19/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A040019, NSN 5925-01-531-3279, P/N ETN322500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080025, NSN 5925-01-532-5564, P/N 1483D84G28, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION). REFER TO [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 4 OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, OR 3.

B. FOR 28VDC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 140903236, NSN 5925-01-419-3944, P/N 313C748G19/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050102, NSN 5925-01-535-7850, P/N ETN322500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080020, NSN 5925-01-561-8728, P/N 1483D84G26, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION). REFER TO [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 4 OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, OR 3.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

OBSOLETE BREAKER INFO (15) - Carrier/Surface AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302052	ETN530810	5925-01-105-4407	LF250	225LM	1a, 1b aux switch
REPLACEMENT BREAKER INFO (15) - Carrier/Surface AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. AQB-LF250, APL 14A070062, NSN 5925-01-555-7554, P/N 82E8761, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.					
B. AQB-LF252, APL 14A050106, NSN 5925-01-535-7869, P/N ETN322510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.					
C. AQB-L253, APL 14A080018, NSN 5925-01-561-8731, P/N 1483D83G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). AUX SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS ("A" CONTACT, "B" CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX).					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (16) - Carrier/Surface AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302079	ETN596010S31	0000-LL-CM0-0535	A250	250N (60 Hz and 250 Vdc)	1a, 1b aux switch, 115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch may have motor operator
REPLACEMENT BREAKER INFO (16) - Carrier/Surface AQB/NQB-250					



**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED, THE SHUNT TRIP VOLTAGE RATING REQUIRED, INSTANTANEOUS SETTING OF THE OBSOLETE SPD BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

- 1). 115VAC SHUNT TRIP:
  - a). AQB-A250, APL 14A070030, NSN 5925-01-555-0241, P/N 80E8874, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
  - b). AQB-A252, APL 14A050094, NSN 5925-01-535-7858, P/N ETN317010S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
  - c). AQB-A253, APL 14A080013, NSN 5925-01-561-1994, P/N 1483D85G17, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. REFER TO [TABLE 320-B-19](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 4. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR HI.

2). 28VDC SHUNT TRIP:

- a). AQB-A250, APL 14A070030, NSN 5925-01-555-0241, P/N 80E8874, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- b). AQB-A252, APL 14A050092, NSN 5925-01-535-7848, P/N ETN317010S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- c). AQB-A253, APL 14A080011, NSN 5925-01-561-1962, P/N 1483D85G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. REFER TO [TABLE 320-B-11](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 4. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR HI.

B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

AQB-A252, APL 14A050094, NSN 5925-01-535-7858, P/N ETN317010S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements - Continued

2). 28VDC SHUNT TRIP:

AQB-A252, APL 14A050092, NSN 5925-01-535-7848, P/N ETN317010S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE A 115VAC OR 28VDC SHUNT TRIP RATING:

AQB-A250, APL 14A070030, NSN 5925-01-555-0241, P/N 80E8874, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250N, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

D. FOR ANY DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (17) - Carrier/Surface AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
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**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements - Continued

140302125	ETN530710S36	5925-01-211-5052	LF250	225L	1a, 1b aux switch, 450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch
REPLACEMENT BREAKER INFO (17) - Carrier/Surface AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR 450VAC SHUNT TRIP APPLICATIONS:</p> <p>1). AQB-LF250, APL 14A070049, NSN 5925-01-555-7559, P/N 313C748G24/452D377G07/452D379G02, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.</p> <p>2). AQB-LF252, APL 14A050108, NSN 5925-01-535-7870, P/N ETN322510S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.</p> <p>3). AQB-L253, APL14A080028, NSN 5925-01-561-8736, P/N 1483D85G81, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</p> <p>B. FOR 120VDC SHUNT TRIP APPLICATIONS:</p> <p>1). AQB-LF250, APL 14A070049, NSN 5925-01-555-7559, P/N 313C748G24/452D377G07/452D379G02, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.</p> <p>2). AQB-LF252, APL 14A050107, NSN 5925-01-535-7862, P/N ETN322510S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.</p> <p>3). AQB-L253, APL 14A080023, NSN 5925-01-561-8729, P/N 1483D85G57, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.</p> <p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX).</p>					

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (18) - Carrier/Surface AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302128	ETN530100S36	5925-01-211-4420	LF250	125L	450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (18) - Carrier/Surface AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR 450VAC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 140902819, NSN 5925-01-211-4420, P/N 313C748G18/452D377G07, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050105, NSN 5925-01-535-7852, P/N ETN322500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080027, NSN 5925-01-512-4811, P/N 1483D84G30, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

B. FOR 120VDC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 140902819, NSN 5925-01-211-4420, P/N 313C748G18/452D377G07, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050104, NSN 5925-01-535-7851, P/N ETN322500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080022, NSN 5925-01-561-8742, P/N 1483D84G27, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (19) - Carrier/Surface AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302129	ETN530910S36	NO NSN ON APL	LF250	250L	1a, 1b aux switch, 450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (19) - Carrier/Surface AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR 450VAC SHUNT TRIP APPLICATIONS. 1). AQB-LF250, APL 14A070066, NSN 5925-01-555-7563, P/N 83E4737, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.  
 2). AQB-LF252, APL 14A050108, NSN 5925-01-535-7870, P/N ETN322510S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.  
 3). AQB-L253, APL 14A080028, NSN 5925-01-561-8736, P/N 1483D85G81, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

**Table 320-B-38. Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements - Continued**

**B. FOR 120VDC SHUNT TRIP APPLICATIONS:**

- 1). AQB-LF250, APL 14A070066, NSN 5925-01-555-7563, P/N 83E4737, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050107, NSN 5925-01-535-7862, P/N ETN322510S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080023, NSN 5925-01-561-8729, P/N 1483D85G57, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH. THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**OBSOLETE BREAKER INFO (20) - Carrier/Surface AQB/NQB-250**

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302137	ETN583510S36	5925-01-123-5200	A250	225NH (400 Hz)	1a, 1b aux switch, 450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch, may have motor operator

**REPLACEMENT BREAKER INFO (20) - Carrier/Surface AQB/NQB-250**

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 450VAC SHUNT TRIP:

- a). AQB-A250, APL 14A070051, NSN 5925-01-123-5200, P/N 315C574G24/452D377G03/452D379G04, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- b). AQB-A252, APL 14A050096, NSN 5925-01-535-7864, P/N ETN317010S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

2). 120VDC SHUNT TRIP:

- a). AQB-A250, APL 14A070051, NSN 5925-01-123-5200, P/N 315C574G24/452D377G03/452D379G04, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225NH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- b). AQB-A252, APL 14A050095, NSN 5925-01-535-7861, P/N ETN317010S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 450VAC SHUNT TRIP:

AQB-A252, APL 14A050096, NSN 5925-01-535-7864, P/N ETN317010S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

2). 120VDC SHUNT TRIP:

AQB-A252, APL 14A050095, NSN 5925-01-535-7861, P/N ETN317010S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS ("A" CONTACT, "B" CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH. THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (21) - Carrier/Surface AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302154	ETN530800S36 OR ETN5308	5925-01-185-5155	LF250	225LM	May have 450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (21) - Carrier/Surface AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON WHETHER OR NOT A SHUNT TRIP IS USED IN THE APPLICATION AND THE SHUNT TRIP VOLTAGE RATING (IF APPLICABLE). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

- A. FOR APPLICATIONS WITHOUT SHUNT TRIP: 1). AQB-LF250, APL 140901266, NSN 5925-01-229-4445, P/N 313C748G25, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).  
2). AQB-LF252, APL 14A040016, NSN 5925-01-508-8389, P/N ETN3225, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.  
3). AQB-LF252, APL 14A990027, NSN 5925-01-529-8157, P/N ETN3254, ELECTRONIC WITH 225 AMP RATING PLUG, MANUFACTURED BY SPD.  
4). AQB-L253, APL 14A000012, NSN 5925-01-532-5569, P/N 1483D82G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).



**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

**B. FOR APPLICATIONS WITH 450VAC SHUNT TRIP:**

- 1). AQB-LF250, APL 14A070067, NSN 5925-01-555-7565, P/N 69E3567, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050105, NSN 5925-01-535-7852, P/N ETN322500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080027, NSN 5925-01-512-4811, P/N 1483D84G30, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

**C. FOR APPLICATIONS WITH 120VDC SHUNT TRIP:**

- 1). AQB-LF250, APL 14A070067, NSN 5925-01-555-7565, P/N 69E3567, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050104, NSN 5925-01-535-7851, P/N ETN322500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080022, NSN 5925-01-561-8742, P/N 1483D84G27, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER (IF SUPPLIED WITH SHUNT TRIP) AND THE REPLACEMENT BREAKERS WITH SHUNT TRIP CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.

B. THE OBSOLETE SPD BREAKER (IF SUPPLIED WITH A SHUNT TRIP) AND THE REPLACEMENT BREAKERS WITH SHUNT TRIP CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (22) - Carrier/Surface AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302171	ETN530200S36	5925-01-176-7182	LF250	125LM	450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

REPLACEMENT BREAKER INFO (22) - Carrier/Surface AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND INSTANTANEOUS SETTING OF THE OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR 450VAC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 14A070067, NSN 5925-01-555-7565, P/N 69E3567, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050105, NSN 5925-01-535-7852, P/N ETN322500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080027, NSN 5925-01-512-4811, P/N 1483D84G30, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION). REFER TO [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 4 OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, OR 3.

B. FOR 120VDC SHUNT TRIP APPLICATIONS:

- 1). AQB-LF250, APL 14A070067, NSN 5925-01-555-7565, P/N 69E3567, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050104, NSN 5925-01-535-7851, P/N ETN322500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080022, NSN 5925-01-561-8742, P/N 1483D84G27, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION). REFER TO [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 4 OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, OR 3.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

- A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements - Continued

<p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.3.4.2.1</a> AND <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (23) - Carrier/Surface AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302173	ETN530700S36	5925-01-293-8347	LF250	225L	450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch
REPLACEMENT BREAKER INFO (23) - Carrier/Surface AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR 450VAC SHUNT TRIP APPLICATIONS:</p> <ol style="list-style-type: none"> <li>1). AQB-LF250, APL 14A070177, NSN 5925-01-558-4971, P/N 69E3566, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>2). AQB-LF252, APL 14A050105, NSN 5925-01-535-7852, P/N ETN322500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>3). AQB-L253, APL 14A080027, NSN 5925-01-512-4811, P/N 1483D84G30, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</li> </ol> <p>B. FOR 120VDC SHUNT TRIP APPLICATIONS:</p> <ol style="list-style-type: none"> <li>1). AQB-LF250, APL 14A070177, NSN 5925-01-558-4971, P/N 69E3566, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225L, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>2). AQB-LF252, APL 14A050104, NSN 5925-01-535-7851, P/N ETN322500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</li> <li>3). AQB-L253, APL 14A080022, NSN 5925-01-561-8742, P/N 1483D84G27, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</li> </ol>					

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (24) - Carrier/Surface AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302185	ETN596300S36	5930-01-155-9581	NQB-A250	N/A	450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch, may have motor operator

REPLACEMENT BREAKER INFO (24) - Carrier/Surface AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED, THE SHUNT TRIP VOLTAGE RATING REQUIRED, AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 450VAC SHUNT TRIP:

a). NQB-A250, APL 14A070058, NSN 5925-01-555-7549, P/N 83E2160, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). NQB-A252, APL 14A070087, NSN 5925-01-558-2805, P/N ETN319900S36, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

c). NQB-A253, APL 14A070123, NSN 5925-01-558-2878, P/N 1483D82G06/1483D92G05, MANUFACTURED BY CUTLER-HAMMER. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

2). 120VDC SHUNT TRIP:

- a). NQB-A250, APL 14A070058, NSN 5925-01-555-7549, P/N 83E2160, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- b). NQB-A252, APL 14A070088, NSN 5925-01-558-2807, P/N ETN319900S32, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- c). NQB-A253, APL 14A070121, NSN 5925-01-558-5874, P/N 1483D82G06/1483D92G02, MANUFACTURED BY CUTLER-HAMMER. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 450VAC SHUNT TRIP:

NQB-A252, APL 14A070087, NSN 5925-01-558-2805, P/N ETN319900S36, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

2). 120VDC SHUNT TRIP:

NQB-A252, APL 14A070088, NSN 5925-01-558-2807, P/N ETN319900S32, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).

C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE A 450VAC OR 120VDC SHUNT TRIP RATING: NQB-A250, APL 14A070058, NSN 5925-01-555-7549, P/N 83E2160, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

D. FOR ANY DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (25) - Carrier/Surface AQB/NQB-250

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302198	ETN596300S31Z	5930-01-167-6882	NQB-A250	N/A	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch, line and load side lugs, may have motor operator
<b>REPLACEMENT BREAKER INFO (25) - Carrier/Surface AQB/NQB-250</b>					
<p><b>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED, THE SHUNT TRIP VOLTAGE RATING REQUIRED, AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</b></p> <p><b>A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</b></p> <p>1). 115VAC SHUNT TRIP:  a). NQB-A250, APL 140902822, NSN 5925-01-399-6777, P/N 80E2594, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.  b). NQB-A252, APL 14A070089, NSN 5925-01-558-2810, P/N ETN319900S31Z, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.  c). NQB-A253, APL 14A070168, NSN 5925-01-558-8592, P/N 1483D82G12/1483D92G03, MANUFACTURED BY CUTLER-HAMMER. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED</p> <p>2). 28VDC SHUNT TRIP:  a). NQB-A250, APL 140902822, NSN 5925-01-399-6777, P/N 80E2594, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.  b). NQB-A252, APL 14A070090, NSN 5925-01-558-2812, P/N ETN319900S30Z, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.  c). NQB-A253, APL 14A070166, NSN 5925-01-559-6374, P/N 1483D82G12/1483D92G01, MANUFACTURED BY CUTLER-HAMMER. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p><b>B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</b></p> <p>1). 115VAC SHUNT TRIP:  NQB-A252, APL 14A070089, NSN 5925-01-558-2810, P/N ETN319900S31Z, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p> <p>2). 28VDC SHUNT TRIP:  NQB-A252, APL 14A070090, NSN 5925-01-558-2812, P/N ETN319900S30Z, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p>					

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE A 115VAC OR 28VDC SHUNT TRIP RATING: NQB-A250, APL 140902822, NSN 5925-01-399-6777, P/N 80E2594, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

D. FOR ANY DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (26) - Carrier/Surface AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302254	ETN5965 (frame only)		NQB-A250	N/A	May have motor operator

REPLACEMENT BREAKER INFO (26) - Carrier/Surface AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR:

- 1). NQB-A250, APL 140901635, NSN 5930-00-900-0247, P/N S313C682G36, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- 2). NQB-A252, APL 14A050110, NSN 5925-01-480-0730, P/N ETN3199, MANUFACTURED BY SPD.
- 3). NQB-A253, APL 14A070003, NSN 5925-01-548-7748, P/N 1483D82G06, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

**Table 320-B-38. Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements - Continued**

B. FOR AC BREAKER APPLICATIONS WITH MOTOR OPERATOR:  
 NQB-A252, APL 14A050110, NSN 5925-01-480-0730, P/N ETN3199, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400HZ).

C. FOR DC BREAKER APPLICATIONS WITHOUT MOTOR OPERATOR:  
 NQB-A250, APL 140901635, NSN 5930-00-900-0247, P/N S313C682G36, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).

D. FOR DC BREAKER APPLICATIONS WITH MOTOR OPERATOR: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**OBSOLETE BREAKER INFO (27) - Carrier/Surface AQB/NQB-250**

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302288	ETN530800S36	5925-01-232-7632	LF250	225LM	450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch

**REPLACEMENT BREAKER INFO (27) - Carrier/Surface AQB/NQB-250**

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR 450VAC SHUNT TRIP APPLICATIONS:1). AQB-LF250, APL 140902832, NSN 5925-01-232-7632, P/N 313C748G25/452D377G07, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.  
 2). AQB-LF252, APL 14A050105, NSN 5925-01-535-7852, P/N ETN322500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.  
 3). AQB-L253, APL 14A080027, NSN 5925-01-512-4811, P/N 1483D84G30, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).



**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

**B. FOR 120VDC SHUNT TRIP APPLICATIONS:**

- 1). AQB-LF250, APL 140902832, NSN 5925-01-232-7632, P/N 313C748G25/452D377G07, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050104, NSN 5925-01-535-7851, P/N ETN322500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080022, NSN 5925-01-561-8742, P/N 1483D84G27, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (28) - Carrier/Surface AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302348	ETN531000S31	5925-01-288-7136	LF250	250LM	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch

REPLACEMENT BREAKER INFO (28) - Carrier/Surface AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements - Continued

**A. FOR 115VAC SHUNT TRIP APPLICATIONS:**

- 1). AQB-LF250, APL 140903151, NSN 5925-01-300-9743, P/N 313C748G27/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A040019, NSN 5925-01-531-3279, P/N ETN322500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-LF252, APL 14A990024, NSN 5925-01-532-4940, P/N ETN325500S31, ELECTRONIC WITH 250 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 4). AQB-L253, APL 14A080025, NSN 5925-01-532-5564, P/N 1483D84G28, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

**B. FOR 28VDC SHUNT TRIP APPLICATIONS:**

- 1). AQB-LF250, APL 140903151, NSN 5925-01-300-9743, P/N 313C748G27/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050102, NSN 5925-01-535-7850, P/N ETN322500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080020, NSN 5925-01-561-8728, P/N 1483D84G26, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (29) - Carrier/Surface AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

140302349	ETN530800S31	5925-01-300-9744M1	LF250	225LM	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch
REPLACEMENT BREAKER INFO (29) - Carrier/Surface AQB/NQB-250					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR 115VAC SHUNT TRIP APPLICATIONS:</p> <p>1). AQB-LF250, APL 140903235, NSN 5925-01-417-1940, P/N 313C748G25/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>2). AQB-LF252, APL 14A040019, NSN 5925-01-531-3279, P/N ETN322500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>3). AQB-LF252, APL 14A990019, NSN 5925-01-532-4950, P/N ETN325400S31, ELECTRONIC WITH 225 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>4). AQB-L253, APL 14A080025, NSN 5925-01-532-5564, P/N 1483D84G28, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</p> <p>B. FOR 28VDC SHUNT TRIP APPLICATIONS:</p> <p>1). AQB-LF250, APL 140903235, NSN 5925-01-417-1940, P/N 313C748G25/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 225LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>2). AQB-LF252, APL 14A050102, NSN 5925-01-535-7850, P/N ETN322500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>3). AQB-L253, APL 14A080020, NSN 5925-01-561-8728, P/N 1483D84G26, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION).</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.</p> <p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.3.4.2.1</a> AND <a href="#">TABLE 320-B-3</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p>					

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and  
Replacements - Continued

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (30) - Carrier/Surface AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302350	ETN530400S31	5925-01-287-4809M1	LF250	150LM	115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch
REPLACEMENT BREAKER INFO (30) - Carrier/Surface AQB/NQB-250					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND INSTANTANEOUS SETTING OF THE OBSOLETE BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. FOR 115VAC SHUNT TRIP APPLICATIONS:					
1). AQB-LF250, APL 140903233, NSN 5925-01-419-3946, P/N 313C748G21/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.					
2). AQB-LF252, APL 14A040019, NSN 5925-01-531-3279, P/N ETN322500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.					
3). AQB-LF252, APL 14A990020, NSN 5925-01-532-4947, P/N ETN325200S31, ELECTRONIC WITH 150 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.					
4). AQB-L253, APL 14A080025, NSN 5925-01-532-5564, P/N 1483D84G28, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.3.3.6</a> OF THIS APPENDIX FOR MORE INFORMATION). REFER TO <a href="#">TABLE 320-B-21</a> OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.					

**Table 320-B-38.** Obsolete Carrier/Surface AQB/NQB-250 Breakers and Replacements - Continued

**B. FOR 28VDC SHUNT TRIP APPLICATIONS:**

- 1). AQB-LF250, APL 140903233, NSN 5925-01-419-3946, P/N 313C748G21/452D377G05, THERMAL MAGNETIC WITH TRIP UNIT TYPE 150LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 2). AQB-LF252, APL 14A050102, NSN 5925-01-535-7850, P/N ETN322500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- 3). AQB-L253, APL 14A080020, NSN 5925-01-561-8728, P/N 1483D84G26, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION). REFER TO [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, 3, OR 4.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.3.4.2.1](#) AND [TABLE 320-B-3](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-39.** Obsolete Carrier/Sub AQB/NQB-250 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Carrier/Sub AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300527	ETN5945	5925-01-080-2226	A250	100NG (60 Hz only)	May have motor operator
REPLACEMENT BREAKER INFO (1) - Carrier/Sub AQB/NQB-250					

**Table 320-B-39.** Obsolete Carrier/Sub AQB/NQB-250 Breakers and Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF THE OBSOLETE SPD BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:

- 1). AQB-A250, APL 140901813, NSN 5925-01-080-2226, P/N S313C682G28, THERMAL MAGNETIC WITH TRIP UNIT TYPE 100NG, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).
- 2). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.
- 3). AQB-A253, APL 14A010018, NSN 5925-01-493-8105, P/N 1483D82G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 FOR CONTINUOUS CURRENT SETTING (CCS). REFER TO [TABLE 320-B-19](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 3, 4 OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO OR 2.

B. FOR APPLICATIONS WITH MOTOR OPERATOR: AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400HZ).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-40.** Obsolete Surface/Sub AQB/NQB-250 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Surface/Sub AQB/NQB-250					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301760	ETN5837	0000-LL-CA8-5092	A250	250NGH (400 Hz only)	May have 1a, 1b aux switch, may have motor operator

**Table 320-B-40.** Obsolete Surface/Sub AQB/NQB-250 Breakers and  
Replacements - Continued

REPLACEMENT BREAKER INFO (1) - Surface/Sub AQB/NQB-250
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON WHETHER OR NOT AN AUX SWITCH OR MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:</p> <p>1). WITHOUT AUX SWITCH:</p> <p>a). AQB-A250, NSN 5925-01-238-5706, P/N 315C574G30, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NGH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE).</p> <p>b). AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.</p> <p>c). AQB-A253, APL 14A010018, NSN 5925-01-493-8105, P/N 1483D82G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 175-250 AMP RATING PLUG, NSN 5935-01-481-2131, P/N 6603C02G51 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS).</p> <p>2). 1A, 1B AUX SWITCH:</p> <p>a). AQB-A250, P/N 315C574G30/452D379G02, THERMAL MAGNETIC WITH TRIP UNIT TYPE 250NGH, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.</p> <p>b). AQB-A252, APL 14A090009, NSN 5925-01-573-0249, P/N ETN317010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.</p> <p>B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:</p> <p>1). WITHOUT AUX SWITCH:</p> <p>AQB-A252, APL 14A050090, NSN 5925-00-872-1480, P/N ETN3170, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p> <p>2). 1A, 1B AUX SWITCH:</p> <p>AQB-A252, APL 14A090009, NSN 5925-01-573-0249, P/N ETN317010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATORS ARE NSN 6105-01-138-7546, P/N ETN5988 (115VAC, 60Hz/120VDC) OR NSN 5925-01-334-0139, P/N ETN5827 (115VAC, 400Hz).</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.3.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p>

**Table 320-B-40.** Obsolete Surface/Sub AQB/NQB-250 Breakers and  
Replacements - Continued

A. THE OBSOLETE SPD BREAKER (IF SUPPLIED WITH 1A, 1B AUX SWITCH) AND ALL THE REPLACEMENT BREAKERS WITH AUX SWITCH CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.3.4.4](#) AND [TABLES 320-B-3](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (2) - Surface/Sub AQB/NQB-250

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302056	ETN530210	0000-LL-CK7-7020 AND 5925-01-105-4403	LF250	125LM	1a, 1b aux switch

REPLACEMENT BREAKER INFO (2) - Surface/Sub AQB/NQB-250

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE SPD BREAKER (WHERE NOTED). BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. AQB-LF250, APL 140903186, NSN 5925-01-345-5509, P/N 83E2418, THERMAL MAGNETIC WITH TRIP UNIT TYPE 125LM, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). AUX SWITCH INSTALLED.

B. AQB-LF252, APL 14A050106, NSN 5925-01-535-7869, P/N ETN322510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.

C. AQB-L253, APL 14A080018, NSN 5925-01-561-8731, P/N 1483D83G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER. USE ADJUSTABLE 100-160 AMP RATING PLUG, NSN 5935-01-481-2133, P/N 6603C02G52 TO ESTABLISH CONTINUOUS CURRENT SETTING (CCS). AUX SWITCH INSTALLED. CLOSEOUT PLATE NSN 5895-01-483-1936, P/N 6603C76G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.3.3.6](#) OF THIS APPENDIX FOR MORE INFORMATION). REFER TO [TABLE 320-B-21](#) OF THIS APPENDIX, THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 4 OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO, 2, OR 3.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET THERMAL MAGNETIC AND ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.3.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-3](#) OF THIS APPENDIX).



**Table 320-B-40.** Obsolete Surface/Sub AQB/NQB-250 Breakers and  
Replacements - Continued

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-41.** List of Obsolete SPD AQB/NQB-400 Circuit Breaker APLS  
Across Platforms

Carrier Unique	Surface Unique	Sub Unique	Carrier Surface Sub	Carrier Surface	Carrier Sub	Surface Sub
(1) 140301163	(1) 140301285	(1) T140300965	(1) 140301339	(1) 140300609	(1) 140301993	(1) 140301821
(2) 140301272R	(2) 140301849	(2) 140302354		(2) 140300965		(2) 140301992
(3) 140301317R	(3) 140301916			(3) 140301272		
(4) 140301340R	(4) 140301995			(4) 140301299		
(5) 140301355	(5) 140302005			(5) 140301310		
	(6) 140302048			(6) 140301317		
	(7) 140302049			(7) 140301340		
	(8) 140302054			(8) 140301833		
	(9) 140302055			(9) 140301849		
	(10) 140302095			(10) 140302047		
	(11) 140302132			(11) 140302063		
	(12) 140302134			(12) 140302114		
	(13) 140302301			(13) 140302115		
	(14) 140302302			(14) 140302157		
	(15) 140302303			(15) 140302170		
	(16) 140302304					
	(17) 140302338L					
	(18) 140302339L					
	(19) 140302363					
	(20) 140302364					
	(21) 140302365					
	(22) 140302366					

**Table 320-B-41.** List of Obsolete SPD AQB/NQB-400 Circuit Breaker APLS  
Across Platforms - Continued

(23) 140302423M					
(24) 140302508					

**Table 320-B-42.** Obsolete Carrier Unique AQB/NQB-400 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Carrier Unique AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301163	ETN6883	0000-LL-CA8-5110	A400	400KH (400 Hz)	May have 1a, 1b aux switch, may have motor operator
REPLACEMENT BREAKER INFO (1) - Carrier Unique AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON WHETHER OR NOT AN AUX SWITCH OR MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:</p> <p>1). WITHOUT AUX SWITCH: AQB-A402, APL 14A080017, NSN 5925-01-560-9372, P/N ETN3370, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.</p> <p>2). 1A, 1B AUX SWITCH: AQB-A402, APL 14A080015, NSN 5925-01-538-4016, P/N ETN337010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.</p> <p>B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:</p> <p>1). WITHOUT AUX SWITCH: AQB-A402, APL 14A080017, NSN 5925-01-560-9372, P/N ETN3370, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).</p>					

**Table 320-B-42.** Obsolete Carrier Unique AQB/NQB-400 Breakers and  
Replacements - Continued

2). 1A, 1B AUX SWITCH:

AQB-A402, APL 14A080015, NSN 5925-01-538-4016, P/N ETN337010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH. (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (2) - Carrier Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301272R	ETN6905	5925-01-233-5683	LF400	300TM	May have motor operator

REPLACEMENT BREAKER INFO (2) - Carrier Unique AQB/NQB-400

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-42.** Obsolete Carrier Unique AQB/NQB-400 Breakers and  
Replacements - Continued

**A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:**

- 1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- 2). AQB-LF402, APL 14A010020, NSN 5925-01-493-8099, P/N ETN3452, ELECTRONIC WITH 300 AMP RATING PLUG, MANUFACTURED BY SPD.
- 3). AQB-LL400QS, APL 140903196, 5925-01-356-4514, P/N 1230C83G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.
- 4). AQB-L400QM, APL 140903207, NSN 5925-01-360-5605, P/N 1230C83G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) AND [TABLE 320-B-24](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

**B. FOR APPLICATIONS WITH MOTOR OPERATOR:**

- 1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).
- 2). AQB-LF402, APL 14A010020, NSN 5925-01-493-8099, P/N ETN3452, ELECTRONIC WITH 300 AMP RATING PLUG, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (3) - Carrier Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301317R	ETN6909	5925-01-151-5136	LF400	400TM	1a, 1b aux switch, may have motor operator

**Table 320-B-42.** Obsolete Carrier Unique AQB/NQB-400 Breakers and  
Replacements - Continued

REPLACEMENT BREAKER INFO (3) - Carrier Unique AQB/NQB-400
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:</p> <p>1). AQB-LF402, APL 14A050131, NSN 5925-01-535-3584, P/N ETN 342510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.</p> <p>2). AQB-LL400QS, APL 140903198, NSN 5925-01-356-4515, P/N 1241C32G19, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.44</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.</p> <p>3). AQB-L400QM, APL 14A070134, NSN 5925-01-558-2803, P/N 1241C32G21, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01 IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.</p> <p>B. FOR APPLICATIONS WITH MOTOR OPERATOR:</p> <p>AQB-LF402, APL 14A050131, NSN 5925-01-535-3584, P/N ETN 342510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.4.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO <a href="#">TABLE 320-B-4</a> OF THIS APPENDIX).</p> <p>B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.4.4.4</a> AND <a href="#">TABLES 320-B-4</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>

**Table 320-B-42.** Obsolete Carrier Unique AQB/NQB-400 Breakers and Replacements - Continued

OBSOLETE BREAKER INFO (4) - Carrier Unique AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301340R	ETN6906	5925-01-151-5137	LF400	350T	May have motor operator
REPLACEMENT BREAKER INFO (4) - Carrier Unique AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:</p> <p>1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.</p> <p>2). AQB-LF402, APL 14A000002, NSN 5925-01-532-6260, P/N ETN3453, ELECTRONIC WITH 350 AMP RATING PLUG, MANUFACTURED BY SPD.</p> <p>3). AQB-L400QM, APL 140903207, NSN 5925-01-360-5605, P/N 1230C83G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.</p> <p>4). AQB-L400QF, APL 140903270, NSN 5925-01-440-3934, P/N 1230C83G02, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.</p> <p>B. FOR APPLICATIONS WITH MOTOR OPERATOR:</p> <p>1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).</p> <p>2). AQB-LF402, APL 14A000002, NSN 5925-01-532-6260, P/N ETN3453, ELECTRONIC WITH 350 AMP RATING PLUG, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).</p>					

**Table 320-B-42.** Obsolete Carrier Unique AQB/NQB-400 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (5) - Carrier Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301355	ETN6739	0000-LL-CA8-5099	A400	350KGH (400 Hz)	May have 1a, 1b aux switch, may have motor operator

REPLACEMENT BREAKER INFO (5) - Carrier Unique AQB/NQB-400

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON WHETHER OR NOT AN AUX SWITCH OR MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:

1). WITHOUT AUX SWITCH:

AQB-A402, APL 14A080017, NSN 5925-01-560-9372, P/N ETN3370, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD.

2). 1A, 1B AUX SWITCH:

AQB-A402, APL 14A080015, NSN 5925-01-538-4016, P/N ETN337010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:

1). WITHOUT AUX SWITCH:

AQB-A402, APL 14A080017, NSN 5925-01-560-9372, P/N ETN3370, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).

**Table 320-B-42.** Obsolete Carrier Unique AQB/NQB-400 Breakers and Replacements - Continued

2). 1A, 1B AUX SWITCH:

AQB-A402, APL 14A080015, NSN 5925-01-538-4016, P/N ETN337010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Surface Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301285	ETN6902	0000-LL-CA8-5111	LF400	250T	May have motor operator

REPLACEMENT BREAKER INFO (1) - Surface Unique AQB/NQB-400

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:

1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.

2). AQB-LF402, APL 14A010019, NSN 5925-01-493-6489, P/N ETN3451, ELECTRONIC WITH 250 AMP RATING PLUG, MANUFACTURED BY SPD.

3). AQB-L400QF, APL 140903270, NSN 5925-01-440-3934, P/N 1230C83G02, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 250 AMP RATING PLUG NSN 5925-01-356-8864, P/N 1230C84G01. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01 IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION).



**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

<p>B. FOR APPLICATIONS WITH MOTOR OPERATOR:</p> <p>1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).</p> <p>2). AQB-LF402, APL 14A010019, NSN 5925-01-493-6489, P/N ETN3451, ELECTRONIC WITH 250 AMP RATING PLUG, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.4.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.4.4.4</a> AND <a href="#">TABLES 320-B-4</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (2) - Surface Unique AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301849	ETN690900S31	5925-00-407-4709	LF400	400TM	115Vac, 60 Hz/ 28Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (2) - Surface Unique AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED, INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</p>					

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

1). 115VAC SHUNT TRIP:

- a). AQB-LF402, APL 14A040018, NSN 5925-01-531-1773, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- b). AQB-LF402, APL 14A020007, NSN 5925-01-498-9067, P/N ETN345400S31, ELECTRONIC WITH 400 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- c). AQB-LL400QS, APL 140903265, NSN 5925-01-439-5994, P/N 1241C32G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 9N 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.
- d). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

2). 28VDC SHUNT TRIP:

- a). AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- b). AQB-LL400QS, APL 140903265, NSN 5925-01-439-5994, P/N 1241C32G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 9N 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.
- c). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

a). AQB-LF402, APL 14A040018, NSN 5925-01-531-1773, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

b). AQB-LF402, APL 14A020007, NSN 5925-01-498-9067, P/N ETN345400S31, ELECTRONIC WITH 400 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 28VDC SHUNT TRIP:

AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (3) - Surface Unique AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301916	ETN690800S31	5925-01-081-7253	LF400	400T	115Vac, 60 Hz/ 28Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (3) - Surface Unique AQB/NQB-400					

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

a). AQB-LF402, APL 14A040018, NSN 5925-00-407-4709, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). AQB-LF402, APL 14A020007, NSN 5925-01-498-9067, P/N ETN345400S31, ELECTRONIC WITH 400 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

c). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

d). AQB-L400QF, APL 140903266, NSN 5925-01-439-5995, P/N 1241C32G02, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

2). 28VDC SHUNT TRIP:

a). AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QF, APL 140903266, NSN 5925-01-439-5995, P/N 1241C32G02, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

a). AQB-LF402, APL 14A040018, NSN 5925-00-407-4709, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

b). AQB-LF402, APL 14A020007, NSN 5925-01-498-9067, P/N ETN345400S31, ELECTRONIC WITH 400 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 28VDC SHUNT TRIP:

AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and Replacements - Continued

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (4) - Surface Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301995	ETN690710U06	5925-01-247-9740	LF400	350TM	1a, 1b aux switch, 450Vac, 60 Hz UVR, may have motor operator

REPLACEMENT BREAKER INFO (4) - Surface Unique AQB/NQB-400

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

AQB-LF402, APL 14A070024, NSN 5925-01-554-0542, P/N ETN342510U06, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. UVR AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE HAVE THREE LEADS ("A" CONTACT, "B" CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE UVR (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

OBSOLETE BREAKER INFO (5) - Surface Unique AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302005	ETN690900S31	5925-01-223-5689	LF400	400TM	115Vac, 60 Hz/ 28Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (5) - Surface Unique AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED, INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</p> <p>1). 115VAC SHUNT TRIP:</p> <p>a). AQB-LF402, APL 14A040018, NSN 5925-00-407-4709, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>b). AQB-LF402, APL 14A020007, NSN 5925-01-498-9067, ETN345400S31, ELECTRONIC WITH 400 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>c). AQB-LL400QS, APL 140903265, NSN 5925-01-439-5994, P/N 1241C32G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.</p> <p>d). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.</p>					

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

2). 28VDC SHUNT TRIP:

a). AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). AQB-LL400QS, APL 140903265, NSN 5925-01-439-5994, P/N 1241C32G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834 P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

a). AQB-LF402, APL 14A040018, NSN 5925-00-407-4709, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

b). AQB-LF402, APL 14A020007, NSN 5925-01-498-9067, ETN345400S31, ELECTRONIC WITH 400 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 28VDC SHUNT TRIP:

AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).



**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and Replacements - Continued

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (6) - Surface Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302048	ETN688010S31	5925-01-064-1581	A400	250KH (400 Hz)	1a, 1b aux switch, 115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch, may have motor operator

REPLACEMENT BREAKER INFO (6) - Surface Unique AQB/NQB-400

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITH ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

AQB-A402, APL 14A050123, NSN 5925-01-222-3212, P/N ETN337010S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).

2). 28VDC SHUNT TRIP:

AQB-A402, APL 14A050122, NSN 5925-01-535-3592, P/N ETN337010S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and Replacements - Continued

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (7) - Surface Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302049	ETN672710S31	5925-01-222-3212	A400	400KM (60 Hz and DC)	1a, 1b aux switch, 115Vac, 60 Hz/ 28Vdc shunt trip, shunt trip cut-off switch, may have motor operator

REPLACEMENT BREAKER INFO (7) - Surface Unique AQB/NQB-400

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) AND SHUNT TRIP VOLTAGE RATING. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS WITH ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

AQB-A402, APL 14A050123, NSN 5925-01-222-3212, P/N ETN337010S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

<p>2). 28VDC SHUNT TRIP: AQB-A402, APL 14A050122, NSN 5925-01-535-3592, P/N ETN337010S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).</p> <p>B. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.4.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO <a href="#">TABLE 320-B-4</a> OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.</p> <p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO <a href="#">TABLE 320-B-4</a> OF THIS APPENDIX).</p> <p>C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.4.4.2.1</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p> <p>D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.4.4.4</a> AND <a href="#">TABLES 320-B-4</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (8) - Surface Unique AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302054	ETN690910	NO NSN ON APL	LF400	400TM	1a, 1b aux switch, may have motor operator
REPLACEMENT BREAKER INFO (8) - Surface Unique AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p>					

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and Replacements - Continued

**A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:**

- 1). AQB-LF402, APL 14A050131, NSN 5925-01-535-3584, P/N ETN 342510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.
- 2). AQB-LL400QS, APL 140903198, NSN 5925-01-356-4515, P/N 1241C32G19, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.
- 3). AQB-L400QM, APL 14A070134, NSN 5925-01-558-2803, P/N 1241C32G21, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

**B. FOR APPLICATIONS WITH MOTOR OPERATOR:**

AQB-LF402, APL 14A050131, NSN 5925-01-535-3584, P/N ETN 342510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (9) - Surface Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

140302055	ETN690600S36	5925-01-151-5137	LF400	350T	450Vac, 60 Hz/ 120Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (9) - Surface Unique AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED, INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</p> <p>1). 450VAC SHUNT TRIP:</p> <p>a). AQB-LF402, APL 14A050130, NSN 5925-01-535-3609, P/N ETN342500S36 , ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>b). AQB-L400QM, APL 14A070160, NSN 5925-01-558-2831, P/N 1241C32G06, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01 IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.</p> <p>c). AQB-L400QF, APL 14A070158, NSN 5925-01-558-2819, P/N 1241C32G05, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.</p>					

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

2). 120VDC SHUNT TRIP:

a). AQB-LF402, APL 14A050129, NSN 5925-01-535-3610, P/N ETN342500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QF, APL 140903266, NSN 5925-01-439-5995, P/N 1241C32G02, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 450VAC SHUNT TRIP:

AQB-LF402, APL 14A050130, NSN 5925-01-535-3609, P/N ETN342500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 120VDC SHUNT TRIP:

AQB-LF402, APL 14A050129, NSN 5925-01-535-3610, P/N ETN342500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.4.4.4</a> AND <a href="#">TABLES 320-B-4</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (10) - Surface Unique AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302095	ETN690810S36	0000-LL-CM0-1748	LF400	400T	1a, 1b aux switch, 450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (10) - Surface Unique AQB/NQB-400					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED, INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:					

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

1). 450VAC SHUNT TRIP:

a). AQB-LF402, APL 14A050135, NSN 5925-01-181-8892, P/N ETN342510S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

b). AQB-L400QM, APL 14A070131, NSN 5925-01-558-2886, P/N 1241C32G15, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QF, APL 14A070129, NSN 5925-01-558-7630, P/N 1241C32G14, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

2). 120VDC SHUNT TRIP:

a). AQB-LF402, APL 14A050134, NSN 5925-01-535-3611, P/N ETN342510S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

b). AQB-L400QM, APL 140903280, NSN 5925-01-445-8191, P/N 1241C32G12, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QF, APL 14A070165, NSN 5925-01-558-2827, P/N 1241C32G11, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:



**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

1). 450VAC SHUNT TRIP:

AQB-LF402, APL 14A050135, NSN 5925-01-181-8892, P/N ETN342510S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 120VDC SHUNT TRIP:

AQB-LF402, APL 14A050134, NSN 5925-01-535-3611, P/N ETN342510S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (11) - Surface Unique AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302132	ETN690810S31	NO NSN ON APL	LF400	400T	1a, 1b aux switch, 115Vac, 60 Hz/ 28Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (11) - Surface Unique AQB/NQB-400					

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED, INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

a). AQB-LF402, APL 14A050133, NSN 5925-01-535-3597, P/N ETN342510S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

b). AQB-L400QM, APL 140903227, NSN 5925-01-419-0731, P/N 1241C32G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QF, APL 14A070161, NSN 5925-01-558-2833, P/N 1241C32G08, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

2). 28VDC SHUNT TRIP:

a). AQB-LF402, APL 14A050132, NSN 5925-01-559-0018, P/N ETN342510S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

b). AQB-L400QM, APL 140903227, NSN 5925-01-419-0731, P/N 1241C32G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QF, APL 14A070161, NSN 5925-01-558-2833, P/N 1241C32G08, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

AQB-LF402, APL 14A050133, NSN 5925-01-535-3597, P/N ETN342510S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 28VDC SHUNT TRIP:

AQB-LF402, APL 14A050132, NSN 5925-01-559-0018, P/N ETN342510S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS ("A" CONTACT, "B" CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and Replacements - Continued

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (12) - Surface Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302134	ETN688110	5925-00-233-6799	A400	300KH (400 Hz)	1a, 1b aux switch, may have motor operator

REPLACEMENT BREAKER INFO (12) - Surface Unique AQB/NQB-400

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

AQB-A402, APL 14A080015, NSN 5925-01-538-4016, P/N ETN337010, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (13) - Surface Unique AQB/NQB-400

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302301	ETN690200S36	5925-01-321-7176	LF400	250T	450Vac, 60 Hz/ 120Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (13) - Surface Unique AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</p> <p>1). 450VAC SHUNT TRIP:</p> <p>a). AQB-LF402, APL 14A050130, NSN 5925-01-535-3609, P/N ETN342500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>b). AQB-LF402, APL 14A030000, NSN 5925-01-505-0806, P/N ETN345100S36, ELECTRONIC WITH 400 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>c). AQB-L400QF, APL 14A070158, NSN 5925-01-558-2819, P/N 1241C32G05, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 250 AMP RATING PLUG, NSN 5925-01-356-8864, P/N 1230C84G01. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01 IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION).</p> <p>2). 120VDC SHUNT TRIP:</p> <p>a). AQB-LF402, APL 14A050129, NSN 5925-01-535-3610, P/N ETN342500S32 , ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>b). AQB-L400QF, APL 140903266, NSN 5925-01-439-5995, P/N 1241C32G02, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 250 AMP RATING PLUG, NSN 5925-01-356-8864, P/N 1230C84G01. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01 IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION).</p> <p>B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</p>					

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and Replacements - Continued

1). 450VAC SHUNT TRIP:

- a). AQB-LF402, APL 14A050130, NSN 5925-01-535-3609, P/N ETN342500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).
- b). AQB-LF402, APL 14A030000, NSN 5925-01-505-0806, P/N ETN345100S36, ELECTRONIC WITH 400 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 120VDC SHUNT TRIP:

AQB-LF402, APL 14A050129, NSN 5925-01-535-3610, P/N ETN342500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (14) - Surface Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302302	ETN690400S36	5925-01-270-6185	LF400	300T	450Vac, 60 Hz/ 120Vdc shunt trip, shunt trip cut-off switch, may have motor operator

REPLACEMENT BREAKER INFO (14) - Surface Unique AQB/NQB-400

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED, INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 450VAC SHUNT TRIP:

a). AQB-LF402, APL 14A050130, NSN 5925-01-535-3609, P/N ETN342500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). AQB-L400QM, APL 14A070160, NSN 5925-01-558-2831, P/N 1241C32G06, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QF, APL 14A070158, NSN 5925-01-558-2819, P/N 1241C32G05, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

2). 120VDC SHUNT TRIP:

a). AQB-LF402, APL 14A050129, NSN 5925-01-535-3610, P/N ETN342500S32 , ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QF, APL 140903266, NSN 5925-01-439-5995, P/N 1241C32G02, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2. 3. 4. OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 450VAC SHUNT TRIP:

AQB-LF402, APL 14A050130, NSN 5925-01-535-3609, P/N ETN342500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 120VDC SHUNT TRIP:

AQB-LF402, APL 14A050129, NSN 5925-01-535-3610, P/N ETN342500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.



**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.4.4.4</a> AND <a href="#">TABLES 320-B-4</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (15) - Surface Unique AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302303	ETN690800S36	5925-01-229-4449	LF400	400T	450Vac, 60 Hz/ 120Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (15) - Surface Unique AQB/NQB-400					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED, INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:					

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

1). 450VAC SHUNT TRIP:

a). AQB-LF402, APL 14A050130, NSN 5925-01-535-3609, P/N ETN342500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). AQB-L400QM, APL 14A070160, NSN 5925-01-558-2831, P/N 1241C32G06, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QF, APL 14A070158, NSN 5925-01-558-2819, P/N 1241C32G05, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

2). 120VDC SHUNT TRIP:

a). AQB-LF402, APL 14A050129, NSN 5925-01-535-3610, P/N ETN342500S32 , ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QF, APL 140903266, NSN 5925-01-439-5995, P/N 1241C32G02, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and Replacements - Continued

1). 450VAC SHUNT TRIP:

AQB-LF402, APL 14A050130, NSN 5925-01-535-3609, P/N ETN342500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 120VDC SHUNT TRIP:

AQB-LF402, APL 14A050129, NSN 5925-01-535-3610, P/N ETN342500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (16) - Surface Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302304	ETN6900	5925-01-321-2451	LF400	125T	May have motor operator

REPLACEMENT BREAKER INFO (16) - Surface Unique AQB/NQB-400

NOTES ON REPLACEMENT OPTIONS: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. THERE ARE NO SUBSTITUTES AVAILABLE BECAUSE OF SPECIAL 125 AMP ELEMENT RATING.

OBSOLETE BREAKER INFO (17) - Surface Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
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**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

140302338L	ETN690600S31	5925-01-279-1687	LF400	350T	115Vac, 60 Hz/ 28Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (17) - Surface Unique AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED, INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</p> <p>1). 115VAC SHUNT TRIP:</p> <p>a). AQB-LF402, APL 14A040018, NSN 5925-00-407-4709, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>b). AQB-LF402, APL 14A020008, NSN 5925-01-498-9062, ETN345300S31, ELECTRONIC WITH 350 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.</p> <p>c). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.</p> <p>d). AQB-L400QF, APL 140903266, NSN 5925-01-439-5995, P/N 1241C32G02, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.</p>					

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

2). 28VDC SHUNT TRIP:

a). AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QF, APL 140903266, NSN 5925-01-439-5995, P/N 1241C32G02, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

B. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

a). AQB-LF402, APL 14A040018, NSN 5925-00-407-4709, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

b). AQB-LF402, APL 14A020008, NSN 5925-01-498-9062, P/N ETN345300S31, ELECTRONIC WITH 350 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 28VDC SHUNT TRIP:

AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and Replacements - Continued

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**OBSOLETE BREAKER INFO (18) - Surface Unique AQB/NQB-400**

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302339L	ETN690700S31	5925-01-279-1688	LF400	350TM	115Vac, 60 Hz/ 28Vdc shunt trip, shunt trip cut-off switch, may have motor operator

**REPLACEMENT BREAKER INFO (18) - Surface Unique AQB/NQB-400**

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED, INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

1). 115VAC SHUNT TRIP:

- a). AQB-LF402, APL 14A040018, NSN 5925-00-407-4709, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- b). AQB-LF402, APL 14A020008, NSN 5925-01-498-9062, P/N ETN345300S31, ELECTRONIC WITH 350 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- c). AQB-LL400QS, APL 140903265, NSN 5925-01-439-5994, P/N 1241C32G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.
- d). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

2). 28VDC SHUNT TRIP:

- a). AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- b). AQB-LL400QS, APL 140903265, NSN 5925-01-439-5994, P/N 1241C32G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.
- c). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

**Table 320-B-43. Obsolete Surface Unique AQB/NQB-400 Breakers and Replacements - Continued**

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

- a). AQB-LF402, APL 14A040018, NSN 5925-00-407-4709, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).
- b). AQB-LF402, APL 14A020008, NSN 5925-01-498-9062, P/N ETN345300S31, ELECTRONIC WITH 350 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 28VDC SHUNT TRIP:

AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (19) - Surface Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302363	ETN690920U06	5925-01-329-8212	LF400	400TM	2a, 2b aux switch, 450Vac, 60 Hz UVR, may have motor operator

REPLACEMENT BREAKER INFO (19) - Surface Unique AQB/NQB-400



**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

AQB-LF402, APL 14A070032, NSN 5925-01-554-3537, P/N ETN342520U06, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. UVR AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE HAVE SIX AUX SWITCH LEADS WIRED OUT: THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) FOR EACH 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE UVR (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (20) - Surface Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302364	ETN690200S31	5925-01-331-1596	LF400	250T	115Vac, 60 Hz/ 28Vdc shunt trip, shunt trip cut-off switch, may have motor operator

REPLACEMENT BREAKER INFO (20) - Surface Unique AQB/NQB-400

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

1). 115VAC SHUNT TRIP:

- a). AQB-LF402, APL 14A040018, NSN 5925-00-407-4709, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- b). AQB-L400QF, APL 140903266, NSN 5925-01-439-5995, P/N 1241C32G02, ELECTRONIC, SHORT-TIME PICKUP RANGE 650-1500 AMPS, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 250 AMP RATING PLUG, NSN 5925-01-356-8864, P/N 1230C84G01. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01 IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION).

2). 28VDC SHUNT TRIP:

- a). AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- b). AQB-L400QF, APL 140903266, NSN 5925-01-439-5995, P/N 1241C32G02, ELECTRONIC, SHORT-TIME PICKUP RANGE 650-1500 AMPS, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 250 AMP RATING PLUG, NSN 5925-01-356-8864, P/N 1230C84G01. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01 IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION).

**B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:**

1). 115VAC SHUNT TRIP:

AQB-LF402, APL 14A040018, NSN 5925-00-407-4709, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 28VDC SHUNT TRIP:

AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS EXITING THE BREAKER FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and Replacements - Continued

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (21) - Surface Unique AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302365	ETN690500S31	5925-01-329-8215	LF400	300TM	115Vac, 60 Hz/ 28Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (21) - Surface Unique AQB/NQB-400					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED, INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:					
1). 115VAC SHUNT TRIP:					
a). AQB-LF402, APL 14A040018, NSN 5925-00-407-4709, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.					
b). AQB-LF402, APL 14A020004, NSN 5925-01-496-8151, P/N ETN345200S31, ELECTRONIC WITH 300 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.					
c). AQB-LL400QS, APL 140903265, NSN 5925-01-439-5994, P/N 1241C32G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.					
d). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.					

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

2). 28VDC SHUNT TRIP:

a). AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). AQB-LL400QS, APL 140903265, NSN 5925-01-439-5994, P/N 1241C32G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

a). AQB-LF402, APL 14A040018, NSN 5925-00-407-4709, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

b). AQB-LF402, APL 14A020004, NSN 5925-01-496-8151, P/N ETN345200S31, ELECTRONIC WITH 300 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 28VDC SHUNT TRIP:

AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (22) - Surface Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302366	ETN690400S31	5925-01-329-8216	LF400	300T	115Vac, 60 Hz/ 28Vdc shunt trip, shunt trip cut-off switch, may have motor operator

REPLACEMENT BREAKER INFO (22) - Surface Unique AQB/NQB-400

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR 115VAC SHUNT TRIP APPLICATIONS:

1). AQB-LF402, APL 14A040018, NSN 5925-00-407-4709, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). AQB-LF402, APL 14A020004, NSN 5925-01-496-8151, P/N ETN345200S31, ELECTRONIC WITH 300 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

B. FOR 28VDC SHUNT TRIP APPLICATIONS:

AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and Replacements - Continued

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (23) - Surface Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302423M	ETN690910S31	0099-LL-H77-2428	LF400	400TM	1a, 1b aux switch, 115Vac, 60 Hz/ 28Vdc shunt trip, shunt trip cut-off switch, may have motor operator

REPLACEMENT BREAKER INFO (23) - Surface Unique AQB/NQB-400

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED, INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and  
Replacements - Continued

1). 115VAC SHUNT TRIP:

- a). AQB-LF402, APL 14A050133, NSN 5925-01-535-3597, P/N ETN342510S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- b). AQB-LL400QS, APL 140903202, NSN 5925-01-356-4520, P/N 1241C32G07, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.
- c). AQB-L400QM, APL 140903227, NSN 5925-01-419-0731, P/N 1241C32G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

2). 28VDC SHUNT TRIP:

- a). AQB-LF402, APL 14A050132, NSN 5925-01-559-0018, P/N ETN342510S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.
- b). AQB-LL400QS, APL 140903202, NSN 5925-01-356-4520, P/N 1241C32G07, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.
- c). AQB-L400QM, APL 140903227, NSN 5925-01-419-0731, P/N 1241C32G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and Replacements - Continued

1). 115VAC SHUNT TRIP:  
 AQB-LF402, APL 14A050133, NSN 5925-01-535-3597, P/N ETN342510S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 28VDC SHUNT TRIP:  
 AQB-LF402, APL 14A050132, NSN 5925-01-559-0018, P/N ETN342510S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (24) - Surface Unique AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302508	ETN67280S31Z	5925-01-448-9006	NQB-A400	N/A	115Vac, 60 Hz/ 28Vdc shunt trip, shunt trip cut-off switch, line and load side lugs, may have motor operator

REPLACEMENT BREAKER INFO (24) - Surface Unique AQB/NQB-400



**Table 320-B-43.** Obsolete Surface Unique AQB/NQB-400 Breakers and Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED AND SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS WITH ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

NQB-A402, APL 14A070174, NSN 5925-01-558-4978, P/N ETN339900S31Z, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).

2). 28VDC SHUNT TRIP:

NQB-A402, APL 14A070173, NSN 5925-01-558-4979, P/N ETN339900S30Z, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).

B. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-44.** Obsolete Sub Unique AQB/NQB-400 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Sub Unique AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
T140300965	ETN6728	5930-00-799-8106	NQB-A400	N/A	May have motor operator

**Table 320-B-44.** Obsolete Sub Unique AQB/NQB-400 Breakers and  
Replacements - Continued

REPLACEMENT BREAKER INFO (1) - Sub Unique AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR AC BREAKER APPLICATIONS: NQB-A402, APL T14A090039, NSN 5925-01-527-0780, P/N ETN3399, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).</p> <p>B. FOR DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER, REFER TO <a href="#">PARAGRAPH 320-B.3.4.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.4.4.4</a> AND <a href="#">TABLES 320-B-4</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NAVICP AND/OR NSWCCD-SSES FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (2) - Sub Unique AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302354	ETN693010U06	5925-01-294-2408	LF400	325	1a, 1b aux switch, 450VAC UVR, may have motor operator
REPLACEMENT BREAKER INFO (2) - Sub Unique AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>AQB-LF402, APL 14A070024, NSN 5925-01-554-0542, P/N ETN342510U06, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. UVR AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.4.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO <a href="#">TABLE 320-B-4</a> OF THIS APPENDIX).</p>					

**Table 320-B-44.** Obsolete Sub Unique AQB/NQB-400 Breakers and  
Replacements - Continued

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE UVR (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NAVICP AND/OR NSWCCD-SSES FOR ASSISTANCE.

**Table 320-B-45.** Obsolete Carrier/Surface/Sub AQB/NQB-400 Breakers and  
Replacements

OBSOLETE BREAKER INFO (1) - Carrier/Surface/Sub AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301339	ETN6904	5925-01-117-3192	LF400	300T	May have motor operator
REPLACEMENT BREAKER INFO (1) - Carrier/Surface/Sub AQB/NQB-400					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:					
A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:					
1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.					
2). AQB-L400QM, APL 140903207, NSN 5925-01-360-5605, P/N 1230C83G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.					
3). AQB-L400QF, APL 140903270, NSN 5925-01-440-3934, P/N 1230C83G02, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.					

**Table 320-B-45.** Obsolete Carrier/Surface/Sub AQB/NQB-400 Breakers and Replacements - Continued

**B. FOR APPLICATIONS WITH MOTOR OPERATOR:**

AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Carrier/Surface AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300609	ETN6726	5925-01-181-8981	A400	400K (60 Hz and DC)	May have motor operator

**REPLACEMENT BREAKER INFO (1) - Carrier/Surface AQB/NQB-400**

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**A. FOR AC BREAKER APPLICATIONS:**

AQB-A402, APL 14A080017, NSN 5925-01-560-9372, P/N ETN3370, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL AND FREQUENCY SELECTOR SWITCH, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).

**B. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.**

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

<p>IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.4.4.4</a> AND <a href="#">TABLES 320-B-4 AND 320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (2) - Carrier/Surface AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140300965	ETN6728	5930-00-799-8106	NQB-A400	N/A	May have motor operator
REPLACEMENT BREAKER INFO (2) - Carrier/Surface AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR AC BREAKER APPLICATIONS: NQB-A402, APL 14A040028, NSN 5925-01-527-0780, P/N ETN3399, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).</p> <p>B. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER, REFER TO <a href="#">PARAGRAPH 320-B.3.4.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.4.4.4</a> AND <a href="#">TABLES 320-B-4 AND 320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (3) - Carrier/Surface AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301272	ETN6905	5925-01-233-5683	LF400	300TM	May have motor operator
REPLACEMENT BREAKER INFO (3) - Carrier/Surface AQB/NQB-400					

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:

- 1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- 2). AQB-LF402, APL 14A010020, NSN 5925-01-493-8099, P/N ETN3452, ELECTRONIC WITH 300 AMP RATING PLUG, MANUFACTURED BY SPD.
- 3). AQB-LL400QS, APL 140903196, NSN 5925-01-356-4514, P/N 1230C83G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.
- 4). AQB-L400QM, APL 140903207, NSN 5925-01-360-5605, P/N 1230C83G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

B. FOR APPLICATIONS WITH MOTOR OPERATOR

- 1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).
- 2). AQB-LF402, APL 14A010020, NSN 5925-01-493-8099, P/N ETN3452, ELECTRONIC WITH 300 AMP RATING PLUG, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

OBSOLETE BREAKER INFO (4) - Carrier/Surface AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301299	ETN6907	5925-01-226-3047	LF400	350TM	May have motor operator
REPLACEMENT BREAKER INFO (4) - Carrier/Surface AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:</p> <p>1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.</p> <p>2). AQB-LF402, APL 14A000002, NSN 5925-01-532-6260, P/N ETN3453, ELECTRONIC WITH 350 AMP RATING PLUG, MANUFACTURED BY SPD.</p> <p>3). AQB-LL400QS, APL 140903196, NSN 5925-01-356-4514, P/N 1230C83G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.</p> <p>4). AQB-L400QM, APL 140903207, NSN 5925-01-360-5605, P/N 1230C83G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.</p> <p>B. FOR APPLICATIONS WITH MOTOR OPERATOR:</p> <p>1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).</p> <p>2). AQB-LF402, APL 14A000002, NSN 5925-01-532-6260, P/N ETN3453, ELECTRONIC WITH 350 AMP RATING PLUG, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).</p>					

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (5) - Carrier/Surface AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301310	ETN6908	5925-01-229-4449	LF400	400T	May have motor operator

REPLACEMENT BREAKER INFO (5) - Carrier/Surface AQB/NQB-400

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:

- 1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- 2). AQB-LF402, APL 14A990038, NSN 5925-01-532-4831, P/N ETN3454, ELECTRONIC WITH 400 AMP RATING PLUG, MANUFACTURED BY SPD.
- 3). AQB-L400QM, APL 140903207, NSN 5925-01-360-5605, P/N 1230C83G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.
- 4). AQB-L400QF, APL 140903270, NSN 5925-01-440-3934, P/N 1230C83G02, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.



**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and Replacements - Continued

<p>B. FOR APPLICATIONS WITH MOTOR OPERATOR:</p> <p>1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).</p> <p>2). AQB-LF402, APL 14A990038, NSN 5925-01-532-4831, P/N ETN3454, ELECTRONIC WITH 400 AMP RATING PLUG, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.4.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.4.4.4</a> AND <a href="#">TABLES 320-B-4</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (6) - Carrier/Surface AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301317	ETN6909	5925-01-151-5136	LF400	400TM	1a, 1b aux switch, may have motor operator
REPLACEMENT BREAKER INFO (6) - Carrier/Surface AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p>					

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

**A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:**

- 1). AQB-LF402, APL 14A050131, NSN 5925-01-535-3584, P/N ETN 342510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.
- 2). AQB-LL400QS, APL 140903198, NSN 5925-01-356-4515, P/N 1241C32G19, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.
- 3). AQB-L400QM, APL 14A070134, NSN 5925-01-558-2803, P/N 1241C32G21, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

**B. FOR APPLICATIONS WITH MOTOR OPERATOR:**

AQB-LF402, APL 14A050131, NSN 5925-01-535-3584, P/N ETN 342510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (7) - Carrier/Surface AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301340	ETN6906	5925-01-151-5137	LF400	350T	May have motor operator

REPLACEMENT BREAKER INFO (7) - Carrier/Surface AQB/NQB-400

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:

- 1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.
- 2). AQB-LF402, APL 14A000002, NSN 5925-01-532-6260, P/N ETN3453, ELECTRONIC WITH 350 AMP RATING PLUG, MANUFACTURED BY SPD.
- 3). AQB-L400QM, APL 140903207, NSN 5925-01-360-5605, P/N 1230C83G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.
- 4). AQB-L400QF, APL 140903270, NSN 5925-01-440-3934, P/N 1230C83G02, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 350 AMP RATING PLUG, NSN 5925-01-356-5974, P/N 1230C84G03. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

B. FOR APPLICATIONS WITH MOTOR OPERATOR:

- 1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).
- 2). AQB-LF402, APL 14A000002, NSN 5925-01-532-6260, P/N ETN3453, ELECTRONIC WITH 350 AMP RATING PLUG, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

OBSOLETE BREAKER INFO (8) - Carrier/Surface AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301833	ETN6903	5925-01-233-5688	LF400	250TM	May have motor operator
REPLACEMENT BREAKER INFO (8) - Carrier/Surface AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:</p> <p>1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD.</p> <p>2). AQB-LF402, APL 14A010019, NSN 5925-01-493-6489, P/N ETN3451, ELECTRONIC WITH 250 AMP RATING PLUG, MANUFACTURED BY SPD.</p> <p>3). AQB-LL400QS, APL 140903196, 5925-01-356-4514, P/N 1230C83G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 250 AMP RATING PLUG, NSN 5925-01-356-8864, P/N 1230C84G01. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.</p> <p>4). AQB-L400QM, APL 140903207, NSN 5925-01-360-5605, P/N 1230C83G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 250 AMP RATING PLUG, NSN 5925-01-356-8864, P/N 1230C84G01. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.</p> <p>B. FOR APPLICATIONS WITH MOTOR OPERATOR:</p> <p>1). AQB-LF402, APL 14A040017, NSN 5925-01-531-1771, P/N ETN3425, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).</p> <p>2). AQB-LF402, APL 14A010019, NSN 5925-01-493-6489, P/N ETN3451, ELECTRONIC WITH 250 AMP RATING PLUG, MANUFACTURED BY SPD. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).</p>					

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (9) - Carrier/Surface AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301849	ETN690900S31	5925-01-407-4709	LF400	400TM	115Vac, 60 Hz/ 28Vdc shunt trip, shunt trip cut-off switch, may have motor operator

REPLACEMENT BREAKER INFO (9) - Carrier/Surface AQB/NQB-400

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

1). 115VAC SHUNT TRIP:

a). AQB-LF402, APL 14A040018, NSN 5925-00-407-4709, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). AQB-LF402, APL 14A020007, NSN 5925-01-498-9067, P/N ETN345400S31, ELECTRONIC WITH 400 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

c). AQB-LL400QS, APL 140903265, NSN 5925-01-439-5994, P/N 1241C32G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

d). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

2). 28VDC SHUNT TRIP:

AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

**B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:**

1). 115VAC SHUNT TRIP:

a). AQB-LF402, APL 14A040018, NSN 5925-00-407-4709, P/N ETN342500S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

b). AQB-LF402, APL 14A020007, NSN 5925-01-498-9067, P/N ETN345400S31, ELECTRONIC WITH 400 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 28VDC SHUNT TRIP:

AQB-LF402, APL 14A070175, NSN 5925-01-558-4981, P/N ETN342500S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (10) - Carrier/Surface AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302047	ETN672810S31	5930-01-047-1609	NQB-A400	N/A	1a, 1b aux switch, 115Vac, 60 Hz/ 28Vdc shunt trip, shunt trip cut-off switch, may have motor operator

REPLACEMENT BREAKER INFO (10) - Carrier/Surface AQB/NQB-400

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED AND SHUNT TRIP VOLTAGE RATING REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR AC BREAKER APPLICATIONS WITH ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

NQB-A402, APL 14A050128, NSN 5925-01-535-3582, P/N ETN339910S31, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).

2). 28VDC SHUNT TRIP:

NQB-A402, APL 14A050127, NSN 5925-01-535-3581, P/N ETN339910S30, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).

**Table 320-B-46. Obsolete Carrier/Surface AQB/NQB-400 Breakers and Replacements - Continued**

B. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**OBSOLETE BREAKER INFO (11) - Carrier/Surface AQB/NQB-400**

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302063	ETN690900S36	0000-LL-CK8-7251	LF400	400TM	450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch, may have motor operator

**REPLACEMENT BREAKER INFO (11) - Carrier/Surface AQB/NQB-400**

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:



**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

1). 450VAC SHUNT TRIP:

a). AQB-LF402, APL 14A050130, NSN 5925-01-535-3609, P/N ETN342500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). AQB-LL400QS, APL 140903212, NSN 5925-01-366-1914, P/N 1241C32G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QM, APL 14A070160, NSN 5925-01-558-2831, P/N 1241C32G06, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

2). 120VDC SHUNT TRIP:

a). AQB-LF402, APL 14A050129, NSN 5925-01-535-3610, P/N ETN342500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). AQB-LL400QS, APL 140903265, NSN 5925-01-439-5994, P/N 1241C32G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

1). 450VAC SHUNT TRIP:

AQB-LF402, APL 14A050130, NSN 5925-01-535-3609, P/N ETN342500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 120VDC SHUNT TRIP:

AQB-LF402, APL 14A050129, NSN 5925-01-535-3610, P/N ETN342500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (12) - Carrier/Surface AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302114	ETN690910S31	5925-01-123-2828	LF400	400TM	1a, 1b aux switch, 115Vac, 60 Hz/28Vdc shunt trip, shunt trip cut-off switch, may have motor operator

REPLACEMENT BREAKER INFO (12) - Carrier/Surface AQB/NQB-400

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

a). AQB-LF402, APL 14A050133, NSN 5925-01-535-3597, P/N ETN342510S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

b). AQB-LL400QS, APL 140903202, NSN 5925-01-356-4520, P/N 1241C32G07, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QM, APL 140903227, NSN 5925-01-419-0731, P/N 1241C32G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01 IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

2). 28VDC SHUNT TRIP:

a). AQB-LF402, APL 14A050132, NSN 5925-01-559-0018, P/N ETN342510S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

b). AQB-LL400QS, APL 140903202, NSN 5925-01-356-4520, P/N 1241C32G07, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QM, APL 140903227, NSN 5925-01-419-0731, P/N 1241C32G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and Replacements - Continued

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

AQB-LF402, APL 14A050133, NSN 5925-01-535-3597, P/N ETN342510S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 28VDC SHUNT TRIP:

AQB-LF402, APL 14A050132, NSN 5925-01-559-0018, P/N ETN342510S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (13) - Carrier/Surface AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
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**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

140302115	ETN690910S36	5925-01-181-8892	LF400	400TM	1a, 1b aux switch, 450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (13) - Carrier/Surface AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:</p> <p>1). 450VAC SHUNT TRIP:</p> <p>a). AQB-LF402, APL 14A050135, NSN 5925-01-181-8892, P/N ETN342510S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.</p> <p>b). AQB-LL400QS, APL 140903269, NSN 5925-01-440-3933, P/N 1241C32G13, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.</p> <p>c). AQB-L400QM, APL 14A070131, NSN 5925-01-558-2886, P/N 1241C32G15, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO <a href="#">PARAGRAPH 320-B.3.4.3.4</a> OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.</p>					

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

2). 120VDC SHUNT TRIP:

a). AQB-LF402, APL 14A050134, NSN 5925-01-535-3611, P/N ETN342510S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

b). AQB-LL400QS, APL 14A070163, NSN 5925-01-558-2829, P/N 1241C32G10, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QM, APL 140903280, NSN 5925-01-445-8191, P/N 1241C32G12, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 450VAC SHUNT TRIP:

AQB-LF402, APL 14A050135, NSN 5925-01-181-8892, P/N ETN342510S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 120VDC SHUNT TRIP:

AQB-LF402, APL 14A050134, NSN 5925-01-535-3611, P/N ETN342510S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS ("A" CONTACT, "B" CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and Replacements - Continued

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (14) - Carrier/Surface AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302157	ETN690500S36	5925-01-211-4422	LF400	300TM	450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch, may have motor operator

REPLACEMENT BREAKER INFO (14) - Carrier/Surface AQB/NQB-400

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

1). 450VAC SHUNT TRIP:

a). AQB-LF402, APL 14A050130, NSN 5925-01-535-3609, P/N ETN342500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). AQB-LL400QS, APL 140903212, NSN 5925-01-366-1914, P/N 1241C32G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QM, APL 14A070160, NSN 5925-01-558-2831, P/N 1241C32G06, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

2). 120VDC SHUNT TRIP:

a). AQB-LF402, APL 14A050129, NSN 5925-01-535-3610, P/N ETN342500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.

b). AQB-LL400QS, APL 140903265, NSN 5925-01-439-5994, P/N 1241C32G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:



**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

1). 450VAC SHUNT TRIP:

AQB-LF402, APL 14A050130, NSN 5925-01-535-3609, P/N ETN342500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 120VDC SHUNT TRIP:

AQB-LF402, APL 14A050129, NSN 5925-01-535-3610, P/N ETN342500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND ALL THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (15) - Carrier/Surface AQB/NQB-400

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302170	ETN690300S36	NO NSN ON APL	LF400	250TM	450Vac, 60 Hz/120Vdc shunt trip, shunt trip cut-off switch, may have motor operator

REPLACEMENT BREAKER INFO (15) - Carrier/Surface AQB/NQB-400

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and  
Replacements - Continued

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 450VAC SHUNT TRIP:

- a). AQB-LF402, APL 14A050130, NSN 5925-01-535-3609, P/N ETN342500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- b). AQB-LL400QS, APL 140903212, NSN 5925-01-366-1914, P/N 1241C32G04, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 250 AMP RATING PLUG, NSN 5925-01-356-8864, P/N 1230C84G01. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.
- c). AQB-L400QM, APL 14A070160, NSN 5925-01-558-2831, P/N 1241C32G06, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 250 AMP RATING PLUG, NSN 5925-01-356-8864, P/N 1230C84G01. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

2). 120VDC SHUNT TRIP:

- a). AQB-LF402, APL 14A050129, NSN 5925-01-535-3610, P/N ETN342500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED.
- b). AQB-LL400QS, APL 140903265, NSN 5925-01-439-5994, P/N 1241C32G01, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 250 AMP RATING PLUG, NSN 5925-01-356-8864, P/N 1230C84G01. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.
- c). AQB-L400QM, APL 14A070157, NSN 5925-01-558-2834, P/N 1241C32G03, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 250 AMP RATING PLUG, NSN 5925-01-356-8864, P/N 1230C84G01. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

**Table 320-B-46.** Obsolete Carrier/Surface AQB/NQB-400 Breakers and Replacements - Continued

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 450VAC SHUNT TRIP:

AQB-LF402, APL 14A050130, NSN 5925-01-535-3609, P/N ETN342500S36, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

B. 120VDC SHUNT TRIP:

AQB-LF402, APL 14A050129, NSN 5925-01-535-3610, P/N ETN342500S32, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-47.** Obsolete Carrier/Sub AQB/NQB-400 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Carrier/Sub AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301993	ETN690810	5925-01-233-5165	LF400	400T	1a, 1b aux switch, may have motor operator
REPLACEMENT BREAKER INFO (1) - Carrier/Sub AQB/NQB-400					

**Table 320-B-47.** Obsolete Carrier/Sub AQB/NQB-400 Breakers and  
Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED), AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR:

- 1). AQB-LF402, APL 14A050131, NSN 5925-01-535-3584, P/N ETN342510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED.
- 2). AQB-L400QM, APL 14A070134, NSN 5925-01-558-2803, P/N 1241C32G21, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.
- 3). AQB-L400QF, APL 14A070133, NSN 5925-01-558-2802, P/N 1241C32G20, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 400 AMP RATING PLUG, NSN 5925-01-356-5975, P/N 1230C84G04. AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

B. FOR APPLICATIONS WITH MOTOR OPERATOR:

AQB-LF402, APL 14A050131, NSN 5925-01-535-3584, P/N ETN342510, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS ("A" CONTACT, "B" CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-48.** Obsolete Surface/Sub AQB/NQB-400 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Surface/Sub AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301821	ETN 672810	0000-LL-CA8-5098	NQB-A400	N/A	1a, 1b aux switch, may have motor operator
REPLACEMENT BREAKER INFO (1) - Surface/Sub AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT DEPENDING ON BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p> <p>A. FOR AC BREAKER APPLICATIONS: NQB-A402, APL 14A050126, NSN 5925-01-535-3580, P/N ETN339910, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-020-8917, P/N ETN6798 (115VAC, 60Hz/120VDC).</p> <p>B. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER, REFER TO <a href="#">PARAGRAPH 320-B.3.4.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO <a href="#">TABLE 320-B-4</a> OF THIS APPENDIX).</p> <p>B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.4.4.4</a> AND <a href="#">TABLES 320-B-4</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (2) - Surface/Sub AQB/NQB-400					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
REPLACEMENT BREAKER INFO (2) - Surface/Sub AQB/NQB-400					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED, INSTANTANEOUS SETTING OF OBSOLETE BREAKER (WHERE NOTED) AND WHETHER OR NOT A MOTOR OPERATOR IS USED IN THE APPLICATION. BEFORE DECIDING ON OR INSTALLING A REPLACEMENT, FORM/FIT/FUNCTION ISSUES SHOULD BE UNDERSTOOD AND CONSIDERED AS WELL AS COST, AVAILABILITY, AND LEAD TIME:</p>					

**Table 320-B-48.** Obsolete Surface/Sub AQB/NQB-400 Breakers and  
Replacements - Continued

A. FOR APPLICATIONS WITHOUT MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

a). AQB-LF402, APL 14A050133, NSN 5925-01-535-3597, P/N ETN342510S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

b). AQB-L400QM, APL 140903227, NSN 5925-01-419-0731, P/N 1241C32G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QF, APL 14A070161, NSN 5925-01-558-2833, P/N 1241C32G08, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

2). 28VDC SHUNT TRIP:

a). AQB-LF402, APL 14A050132, NSN 5925-01-559-0018, P/N ETN342510S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED.

b). AQB-L400QM, APL 140903227, NSN 5925-01-419-0731, P/N 1241C32G09, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

c). AQB-L400QF, APL 14A070161, NSN 5925-01-558-2833, P/N 1241C32G08, ELECTRONIC, MANUFACTURED BY CUTLER-HAMMER (FORMERLY WESTINGHOUSE). USE 300 AMP RATING PLUG, NSN 5925-01-356-5973, P/N 1230C84G02. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. ADAPTER KIT NSN 5925-01-452-3858, P/N 6590C82G01, IS ALSO REQUIRED FOR INSTALLATION (REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR MORE INFORMATION). THIS BREAKER CANNOT BE USED IN APPLICATIONS WHERE THE OBSOLETE SPD BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT 2, 3, 4, OR HI. CONSIDER USING THIS BREAKER ONLY IN APPLICATIONS WHERE THE OBSOLETE BREAKER BEING REPLACED HAS INSTANTANEOUS PICKUPS SET AT LO. REFER TO [PARAGRAPH 320-B.3.4.3.4](#) OF THIS APPENDIX FOR ADDITIONAL COORDINATION INFORMATION.

**Table 320-B-48.** Obsolete Surface/Sub AQB/NQB-400 Breakers and Replacements - Continued

B. FOR APPLICATIONS WITH MOTOR OPERATOR AND REQUIRE ONE OF THE FOLLOWING SHUNT TRIP RATINGS:

1). 115VAC SHUNT TRIP:

AQB-LF402, APL 14A050133, NSN 5925-01-535-3597, P/N ETN342510S31, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

2). 28VDC SHUNT TRIP:

AQB-LF402, APL 14A050132, NSN 5925-01-559-0018, P/N ETN342510S30, ELECTRONIC WITH ADJUSTABLE CONTINUOUS CURRENT SETTING (CCS) DIAL, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. APPLICABLE MOTOR OPERATOR IS NSN 5925-00-769-6106, P/N ETN6797 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.4.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE THREE LEADS (“A” CONTACT, “B” CONTACT, AND COMMON) WIRED OUT FOR THE 1A, 1B AUX SWITCH (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX). THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO [TABLE 320-B-4](#) OF THIS APPENDIX).

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.4.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.4.4.4](#) AND [TABLES 320-B-4](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-49.** List of Obsolete SPD AQB/NQB-800 Circuit Breaker APLS Across Platforms.

Carrier Unique	Surface Unique	Sub Unique	Carrier Surface Sub	Carrier Surface	Carrier Sub	Surface Sub
(1) 14A000005	(1) 14A000013	N/A	N/A	(1) 14A000014	N/A	N/A
(2) 14A000006	(2) 140301280			(2) 140301278		
(3) 140301278R	(3) 140301318			(3) 140301289		
(4) 140301602	(4) 140301472			(4) 140301320		

**Table 320-B-49.** List of Obsolete SPD AQB/NQB-800 Circuit Breaker APLS  
Across Platforms. - Continued

(5) 140301829	(5) 140302159			(5) 140301456		
(6) 140301829R	(6) 140302217			(6) 140301786		
(7) 140301835	(7) 140302345			(7) 140302377		
(8) 140302183	(8) 140302361			(8) 140302457		
(9) 140302197	(9) 140302362					
(10) 140302224	(10) 140302371L					
	(11) 140302372L					
	(12) 140302384					
	(13) 140302511					
	(14) 140302512					

**Table 320-B-50.** Obsolete Carrier Unique AQB/NQB-800 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Carrier Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
14A000005	ETN8366	5925-LL-H54-5134	A800	400UH (400 Hz)	May have motor operator
REPLACEMENT BREAKER INFO (1) - Carrier Unique AQB/NQB-800					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A802, APL 14A050140, NSN 5925-01-535-3601, P/N ETN3581, ELECTRONIC WITH 400 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/ 120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/ 120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (2) - Carrier Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES



**Table 320-B-50.** Obsolete Carrier Unique AQB/NQB-800 Breakers and  
Replacements - Continued

14A000006	ETN8374	5925-LL-H54-5136	A800	600UGH (400 Hz)	May have motor operator
REPLACEMENT BREAKER INFO (2) - Carrier Unique AQB/NQB-800					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A802, APL 14A050143, NSN 5925-01-535-3587, P/N ETN3583, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (3) - Carrier Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301278R	ETN8266	5925-01-302-3307	NQB-A800	N/A	May have aux switch, may have motor operator
REPLACEMENT BREAKER INFO (3) - Carrier Unique AQB/NQB-800					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON WHETHER OR NOT AUX SWITCHES INSTALLED AND AUX SWITCH WIRING CONFIGURATION:					
A. FOR AC BREAKER APPLICATIONS WITH ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:					
1). WITHOUT AUX SWITCH: NQB-A802, APL 14A050120, NSN 5925-01-302-3307, P/N ETN3599, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
2). 1A, 1B AUX SWITCH WITH 4 LEADS WIRED OUT: NQB-A802, APL 14A090010, NSN 5925-01-573-0246, P/N ETN359971, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					

**Table 320-B-50. Obsolete Carrier Unique AQB/NQB-800 Breakers and  
Replacements - Continued**

3). 1A, 1B AUX SWITCH WITH 3 LEADS WIRED OUT:

NQB-A802, APL 14A050121, NSN 5925-01-535-3596, P/N ETN359910, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

4). 2A, 2B AUX SWITCH WITH 8 LEADS WIRED OUT:

NQB-A802, APL 14A090011, NSN 5925-01-573-0248, P/N ETN359970, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

5). 2A, 2B AUX SWITCH WITH 6 LEADS WIRED OUT:

NQB-A802, APL 14A050146, NSN 5925-01-535-3591, P/N ETN359920, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

B. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO [PARAGRAPH 320-B.3.5.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. REFER TO [PARAGRAPH 320-B.3.5.4.1](#) AND [TABLE 320-B-5](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON 1A, 1B AND 2A, 2B AUX SWITCH WIRING CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.5.4.4](#) AND [TABLES 320-B-5](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (4) - Carrier Unique AQB/NQB-800

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301602	ETN8241	0000-LL-CA8-5008	A800	400UM (60 Hz and DC)	May have motor operator

REPLACEMENT BREAKER INFO (4) - Carrier Unique AQB/NQB-800

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED:

A. FOR AC BREAKER APPLICATIONS:

AQB-A802, APL 14A050112, NSN 5925-01-535-3600, P/N ETN3551, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

B. FOR DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.

**Table 320-B-50.** Obsolete Carrier Unique AQB/NQB-800 Breakers and Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.5.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.5.4.4](#) AND [TABLES 320-B-5](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (5) - Carrier Unique AQB/NQB-800

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301829	ET86809	NO NSN ON APL	NQB-A800	N/A	2a, 2b aux switch, may have motor operator

REPLACEMENT BREAKER INFO (5) - Carrier Unique AQB/NQB-800

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON AUX SWITCH WIRING CONFIGURATION:

A. FOR AC BREAKER APPLICATIONS WITH ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:

1). 2A, 2B AUX SWITCH WITH 8 LEADS WIRED OUT:

NQB-A802, APL 14A090011, NSN 5925-01-573-0248, P/N ETN359970, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

2). 2A, 2B AUX SWITCH WITH 6 LEADS WIRED OUT:

NQB-A802, APL 14A050146, NSN 5925-01-535-3591, P/N ETN359920, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

B. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO [PARAGRAPH 320-B.3.5.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. REFER TO [PARAGRAPH 320-B.3.5.4.1](#) AND [TABLE 320-B-5](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON 2A, 2B AUX SWITCH WIRING CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.5.4.4](#) AND [TABLES 320-B-5](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

**Table 320-B-50. Obsolete Carrier Unique AQB/NQB-800 Breakers and Replacements - Continued**

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (6) - Carrier Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301829R	ET86809	NO NSN ON APL	NQB-A800	N/ A	2a, 2b aux switch, may have motor operator
REPLACEMENT BREAKER INFO (6) - Carrier Unique AQB/NQB-800					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON AUX SWITCH WIRING CONFIGURATION:					
A. FOR AC BREAKER APPLICATIONS WITH ONE OF THE FOLLOWING AUX SWITCH CONFIGURATIONS:					
1). 2A, 2B AUX SWITCH WITH 8 LEADS WIRED OUT: NQB-A802, APL 14A090011, NSN 5925-01-573-0248, P/N ETN359970, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
2). 2A, 2B AUX SWITCH WITH 6 LEADS WIRED OUT: NQB-A802, APL 14A050146, NSN 5925-01-535-3591, P/N ETN359920, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
B. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
A. REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.1</a> AND <a href="#">TABLE 320-B-5</a> OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON 2A, 2B AUX SWITCH WIRING CONFIGURATIONS.					
B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (7) - Carrier Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES

**Table 320-B-50.** Obsolete Carrier Unique AQB/NQB-800 Breakers and  
Replacements - Continued

140301835	ETN87017	5925-00-243-1439	A800	600UGH (400 Hz)	120VDC shunt trip, shunt trip cut-off switch, may have 1a, 1b aux switch, may have motor operator
REPLACEMENT BREAKER INFO (7) - Carrier Unique AQB/NQB-800					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON WHETHER OR NOT AN AUX SWITCH IS USED IN THE APPLICATION AND, IF SO, THE AUX SWITCH WIRING CONFIGURATION REQUIRED:</p> <p>A. FOR APPLICATIONS WITHOUT AUX SWITCH: AQB-A802, APL 14A090019, NSN 5925-01-573-0234, P/N ETN358300S32, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).</p> <p>B. FOR APPLICATIONS WITH 4 LEADS WIRED OUT FOR 1A, 1B AUX SWITCH: AQB-A802, APL 14A090020, NSN 5925-01-573-0220, P/N ETN358371S32, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).</p> <p>C. FOR APPLICATIONS WITH 3 LEADS WIRED OUT FOR 1A, 1B AUX SWITCH: AQB-A802, APL 14A090021, NSN 5925-01-573-5638, P/N ETN358310S32, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.1</a> AND <a href="#">TABLE 320-B-5</a> OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON 1A, 1B AUX SWITCH WIRING CONFIGURATIONS. THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.</p> <p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.</p> <p>C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.2.1</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p> <p>D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p>					

**Table 320-B-50.** Obsolete Carrier Unique AQB/NQB-800 Breakers and Replacements - Continued

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (8) - Carrier Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302183	ETN87016	5925-01-171-1673	A800	600UGH (400 Hz)	May have motor operator
REPLACEMENT BREAKER INFO (8) - Carrier Unique AQB/NQB-800					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A802, APL 14A050143, NSN 5925-01-535-3587, P/N ETN3583, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (9) - Carrier Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302197	ETN 826610	5930-01-155-1129	NQB-A800	N/A	1a, 1b aux switch, may have motor operator
REPLACEMENT BREAKER INFO (9) - Carrier Unique AQB/NQB-800					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON WHETHER OR NOT THE BREAKER HAS AUX SWITCHES INSTALLED AND AUX SWITCH WIRING CONFIGURATION:					
A. FOR APPLICATIONS WITH 4 LEADS WIRED OUT FOR 1A, 1B AUX SWITCH: NQB-A802, APL 14A090010, NSN 5925-01-573-0246, P/N ETN359971, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					

**Table 320-B-50.** Obsolete Carrier Unique AQB/NQB-800 Breakers and  
Replacements - Continued

B. FOR APPLICATIONS WITH 3 LEADS WIRED OUT FOR 1A, 1B AUX SWITCH:  
NQB-A802, APL 14A050121, NSN 5925-01-535-3596, P/N ETN359910, MANUFACTURED BY SPD. AUX SWITCH  
INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N  
ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

NOTE 2: FOR ADDITIONAL FORM, FIT, FUNCTION INFORMATION ON REPLACEMENT BREAKERS, SEE  
NOTE 3 BELOW AND REFER TO [PARAGRAPH 320-B.3.5.3](#) OF THIS APPENDIX.

A. REFER TO [PARAGRAPH 320-B.3.5.4.1](#) AND [TABLE 320-B-5](#) OF THIS APPENDIX FOR ADDITIONAL INFOR-  
MATION ON 1A, 1B AUX SWITCH WIRING CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.5.4.4](#) AND [TABLES 320-B-5](#)  
AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CON-  
FIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLI-  
CATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (10) - Carrier Unique AQB/NQB-800

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACH- MENTS OR OTHER FEATURES
140302224	ETN83921	NO NSN ON APL	A800	600	1a, 1b aux switch, may have motor operator

REPLACEMENT BREAKER INFO (10) - Carrier Unique AQB/NQB-800

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT  
BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A  
REPLACEMENT DEPENDING ON THE BREAKER FREQUENCY RATING (60HZ OR 400 HZ) AND AUX  
SWITCH WIRING CONFIGURATION REQUIRED:

A. FOR 60HZ BREAKER APPLICATIONS WITH 4 LEADS WIRED OUT FOR 1A, 1B AUX SWITCH:  
AQB-A802, APL 14A090015, NSN 5925-01-573-0229, P/N ETN355371, ELECTRONIC WITH 600 AMP RATING  
PLUG, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE  
MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499,  
P/N ETN3596 (115VAC, 60Hz/120VDC).

B. FOR 60HZ BREAKER APPLICATIONS WITH 3 LEADS WIRED OUT FOR 1A, 1B AUX SWITCH:  
AQB-A802, APL 14A090016, NSN 5925-01-573-0231, P/N ETN355310, ELECTRONIC WITH 600 AMP RATING  
PLUG, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE  
MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499,  
P/N ETN3596 (115VAC, 60Hz/120VDC).

C. FOR 400HZ BREAKER APPLICATIONS WITH 4 LEADS WIRED OUT FOR 1A, 1B AUX SWITCH:  
AQB-A802, APL 14A090017, NSN 5925-01-573-0232, P/N ETN358371, ELECTRONIC WITH 600 AMP RATING  
PLUG, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE  
MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499,  
P/N ETN3596 (115VAC, 60Hz/120VDC).

**Table 320-B-50.** Obsolete Carrier Unique AQB/NQB-800 Breakers and Replacements - Continued

D. FOR 400HZ BREAKER APPLICATIONS WITH 3 LEADS WIRED OUT FOR 1A, 1B AUX SWITCH: AQB-A802, APL 14A090018, NSN 5925-01-573-0221, P/N ETN358310, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

NOTE 2: FOR ADDITIONAL FORM, FIT, FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC BREAKERS, SEE NOTE 3 BELOW AND REFER TO [PARAGRAPH 320-B.3.5.4.1](#) OF THIS APPENDIX.

A. REFER TO [PARAGRAPH 320-B.3.5.4.1](#) AND [TABLE 320-B-5](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON 1A, 1B AUX SWITCH WIRING CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.5.4.4](#) AND [TABLES 320-B-5](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-51.** Obsolete Surface Unique AQB/NQB-800 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Surface Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
14A000013	ETN836820S35	5925-LL-H55-0131	A800	500UH (400 Hz)	2a, 2b aux switch, 120Vdc shunt trip, shunt trip cut-off switch, may have motor operator

REPLACEMENT BREAKER INFO (1) - Surface Unique AQB/NQB-800

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE AUX SWITCH WIRING CONFIGURATION:

A. FOR APPLICATIONS WITH 8 LEADS WIRED OUT FOR 2A, 2B AUX SWITCH: AQB-A802, APL 14A090013, NSN 5925-01-573-0235, P/N ETN358270S32, ELECTRONIC WITH 500 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

B. FOR APPLICATIONS WITH 6 LEADS WIRED OUT FOR 2A, 2B AUX SWITCH: AQB-A802, APL 14A050141, NSN 5925-01-535-5625, P/N ETN358220S32, ELECTRONIC WITH 500 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).



**Table 320-B-51.** Obsolete Surface Unique AQB/NQB-800 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.5.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. REFER TO [PARAGRAPH 320-B.3.5.4.1](#) AND [TABLE 320-B-5](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON 2A, 2B AUX SWITCH WIRING CONFIGURATIONS. THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.5.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.5.4.4](#) AND [TABLES 320-B-5](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (2) - Surface Unique AQB/NQB-800

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301280	ETN8246	0000-LL-CA8-5150	A800	800 (60 Hz and DC)	May have motor operator

REPLACEMENT BREAKER INFO (2) - Surface Unique AQB/NQB-800

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED:

A. FOR AC BREAKER APPLICATIONS:

AQB-A802, APL 14A050139, NSN 5925-01-535-3599, P/N ETN3555, ELECTRONIC WITH 800 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

B. FOR DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.5.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

**Table 320-B-51.** Obsolete Surface Unique AQB/NQB-800 Breakers and  
Replacements - Continued

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (3) - Surface Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301318	ETN 8244 or ETN835600532	5925-01-215-1161 or 5925-01-222-6183	A800	600U (60 Hz and DC)	May have 450Vac, 60 Hz shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (3) - Surface Unique AQB/NQB-800					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE INSTALLED CONFIGURATION. IT IS NOT CLEAR FROM THE APL WHETHER OR NOT THE BREAKER HAS A SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF THE APPLICATION HAS ANY OTHER CONFIGURATIONS NOT COVERED HERE, CONTACT NAVSSES OR NAVICP FOR GUIDANCE.					
A. FOR AC BREAKER APPLICATIONS WITHOUT SHUNT TRIP: AQB-A802, APL 14A050113, NSN 5925-01-535-3561, P/N ETN3553, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
B. FOR AC BREAKER APPLICATIONS WITH 450VAC SHUNT TRIP: AQB-A802, APL 14A050115, NSN 5925-01-535-3604, P/N ETN355300S36, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
C. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
A. THE OBSOLETE SPD BREAKER (IF SUPPLIED WITH SHUNT TRIP) AND THE REPLACEMENT BREAKER WITH SHUNT TRIP CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.					
B. THE OBSOLETE SPD BREAKER (IF SUPPLIED WITH SHUNT TRIP) AND THE REPLACEMENT BREAKER WITH SHUNT TRIP CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.2.1</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.					

**Table 320-B-51.** Obsolete Surface Unique AQB/NQB-800 Breakers and Replacements - Continued

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5 AND 320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (4) - Surface Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301472	ETN8245	5925-01-230-7520	A800	600UM (60 Hz and DC)	May have motor operator
REPLACEMENT BREAKER INFO (4) - Surface Unique AQB/NQB-800					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED:					
A. FOR AC BREAKER APPLICATIONS: AQB-A802, APL 14A050113, NSN 5925-01-535-3561, P/N ETN3553, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
B. FOR DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5 AND 320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE..					
OBSOLETE BREAKER INFO (5) - Surface Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302159	ETN824500S36	NO NSN ON APL	A800	600UM (60 Hz and DC)	450VAC, 60Hz/120VDC shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (5) - Surface Unique AQB/NQB-800					

**Table 320-B-51.** Obsolete Surface Unique AQB/NQB-800 Breakers and Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) AND SHUNT TRIP VOLTAGE RATING REQUIRED:

A. FOR AC BREAKER APPLICATIONS WITH 450VAC SHUNT TRIP:

AQB-A802, APL 14A050115, NSN 5925-01-535-3604, P/N ETN355300S36, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

B. FOR AC BREAKER APPLICATIONS WITH 120VDC SHUNT TRIP:

AQB-A802, APL 14A050114, NSN 5925-01-535-3602, P/N ETN355300S32, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

C. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.5.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.5.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.5.4.4](#) AND [TABLES 320-B-5](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (6) - Surface Unique AQB/NQB-800

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302217	ETN824400S36	5925-01-222-6183	A800	600U (60 Hz and DC)	450VAC, 60Hz/120VDC shunt trip, shunt trip cut-off switch, may have motor operator

REPLACEMENT BREAKER INFO (6) - Surface Unique AQB/NQB-800

**Table 320-B-51.** Obsolete Surface Unique AQB/NQB-800 Breakers and  
Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) AND SHUNT TRIP VOLTAGE RATING REQUIRED:

A. FOR AC BREAKER APPLICATIONS WITH 450VAC SHUNT TRIP:

AQB-A802, APL 14A050115, NSN 5925-01-535-3604, P/N ETN355300S36, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

B. FOR AC BREAKER APPLICATIONS WITH 120VDC SHUNT TRIP:

AQB-A802, APL 14A050114, NSN 5925-01-535-3602, P/N ETN355300S32, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

C. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.5.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.5.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.5.4.4](#) AND [TABLES 320-B-5](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (7) - Surface Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302345	ETN828110S36	5925-01-282-8991	A800	500UH (400 Hz)	1a, 1b aux switch, 450VAC, 60Hz/120VDC shunt trip, shunt trip cut-off switch, may have motor operator

**Table 320-B-51.** Obsolete Surface Unique AQB/NQB-800 Breakers and  
Replacements - Continued

REPLACEMENT BREAKER INFO (7) - Surface Unique AQB/NQB-800

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE SHUNT TRIP VOLTAGE RATING REQUIRED AND THE AUX SWITCH WIRING CONFIGURATION:

A. FOR 450VAC SHUNT TRIP APPLICATIONS WITH 4 LEADS WIRED OUT FOR 1A, 1B AUX SWITCH: AQB-A802, APL 14A090014, NSN 5925-01-573-0226, P/N ETN358271S36, ELECTRONIC WITH 500 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

B. FOR 450VAC SHUNT TRIP APPLICATIONS WITH 3 LEADS WIRED OUT FOR 1A, 1B AUX SWITCH: AQB-A802, APL 14A050119, NSN 5925-01-535-3595, P/N ETN358271S36, ELECTRONIC WITH 500 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

C. FOR 120VDC SHUNT TRIP APPLICATIONS WITH 4 LEADS WIRED OUT FOR 1A, 1B AUX SWITCH: AQB-A802, APL 14A090012, NSN 5925-01-573-0247, P/N ETN358271S32, ELECTRONIC WITH 500 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

D. FOR 120VDC SHUNT TRIP APPLICATIONS WITH 3 LEADS WIRED OUT FOR 1A, 1B AUX SWITCH: AQB-A802, APL 14A050118, NSN 5925-01-535-3583, P/N ETN358210S32, ELECTRONIC WITH 500 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO [PARAGRAPH 320-B.3.5.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. REFER TO [PARAGRAPH 320-B.3.5.4.1](#) AND [TABLE 320-B-5](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON 1A, 1B AUX SWITCH WIRING CONFIGURATIONS. THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.

B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.

C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO [PARAGRAPH 320-B.3.5.4.2.1](#) OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.

D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.5.4.4](#) AND [TABLES 320-B-5](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

**Table 320-B-51.** Obsolete Surface Unique AQB/NQB-800 Breakers and  
Replacements - Continued

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (8) - Surface Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302361	ETN8362	5925-01-354-4695	A800	800U (60 Hz and DC)	May have motor operator
REPLACEMENT BREAKER INFO (8) - Surface Unique AQB/NQB-800					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED:					
A. FOR AC BREAKER APPLICATIONS: AQB-A802, APL 14A050139, NSN 5925-01-535-3599, P/N ETN3555, ELECTRONIC WITH 800 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
B. FOR DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (9) - Surface Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302362	ETN8358	5925-01-230-7520	A800	600UM (60 Hz and DC)	May have motor operator
REPLACEMENT BREAKER INFO (9) - Surface Unique AQB/NQB-800					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED:					

**Table 320-B-51.** Obsolete Surface Unique AQB/NQB-800 Breakers and Replacements - Continued

A. FOR AC BREAKER APPLICATIONS: AQB-A802, APL 14A050113, NSN 5925-01-535-3561, P/N ETN3553, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
B. FOR DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (10) - Surface Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302371L	ETN835420MOD	5925-01-344-8931	A800	500UM (60 Hz and DC)	2a, 2b aux switch, may have motor operator
REPLACEMENT BREAKER INFO (10) - Surface Unique AQB/NQB-800					
NOTE: THIS CIRCUIT BREAKER AND REPAIR PARTS ARE OBSOLETE. NO REPLACEMENTS ARE AVAILABLE. OBSOLETE BREAKER HAS INCREASED INTERRUPTION CAPACITY WHICH IS NOT AVAILABLE ON ANY REPLACEMENT BREAKER.					
OBSOLETE BREAKER INFO (11) - Surface Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302372L	ETN8358MOD	5925-01-344-8932	A800	600UM (60 Hz and DC)	May have motor operator
REPLACEMENT BREAKER INFO (11) - Surface Unique AQB/NQB-800					
NOTE: THIS CIRCUIT BREAKER AND REPAIR PARTS ARE OBSOLETE. NO REPLACEMENTS ARE AVAILABLE. OBSOLETE BREAKER HAS INCREASED INTERRUPTION CAPACITY WHICH IS NOT AVAILABLE ON ANY REPLACEMENT BREAKER.					
OBSOLETE BREAKER INFO (12) - Surface Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES



**Table 320-B-51.** Obsolete Surface Unique AQB/NQB-800 Breakers and  
Replacements - Continued

140302384	ETN826910S33	5925-01-368-1725	NQB-A800	N/A	1a, 1b aux switch, 115Vac, 60 Hz shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (12) - Surface Unique AQB/NQB-800					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE AUX SWITCH WIRING CONFIGURATION:</p> <p>A. FOR AC BREAKER APPLICATIONS WITH ONE OF THE FOLLOWING AUX SWITCH WIRING CONFIGURATIONS:</p> <p>1). 1A, 1B AUX SWITCH WITH 4 LEADS WIRED OUT: NQB-A802, APL 14A090022, P/N ETN359971S31. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).</p> <p>2). 1A, 1B AUX SWITCH WITH 3 LEADS WIRED OUT: NQB-A802, APL 14A050145, NSN 5925-01-535-3590, P/N ETN359910S31. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).</p> <p>B. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.1</a> AND <a href="#">TABLE 320-B-5</a> OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON 1A, 1B AUX SWITCH WIRING CONFIGURATIONS. THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW.</p> <p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.</p> <p>C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.2.1</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p> <p>D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (13) - Surface Unique AQB/NQB-800					

**Table 320-B-51.** Obsolete Surface Unique AQB/NQB-800 Breakers and  
Replacements - Continued

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302511	ETN8276	5925-01-474-1358	A800	600UM (60 Hz and DC)	May have motor operator
REPLACEMENT BREAKER INFO (13) - Surface Unique AQB/NQB-800					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED:					
A. FOR AC BREAKER APPLICATIONS: AQB-A802, APL 14A050139, NSN 5925-01-535-3599, P/N ETN3555, ELECTRONIC WITH 800 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
B. FOR DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (14) - Surface Unique AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302512	ETN8277	5925-01-474-1352	A800	500UM (60 Hz and DC)	May have motor operator
REPLACEMENT BREAKER INFO (14) - Surface Unique AQB/NQB-800					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED:					
A. FOR AC BREAKER APPLICATIONS: AQB-A802, APL 14A050138, NSN 5925-01-535-3598, P/N ETN3552, ELECTRONIC WITH 500 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
B. FOR DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.					

**Table 320-B-51.** Obsolete Surface Unique AQB/NQB-800 Breakers and Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.5.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.5.4.4](#) AND [TABLES 320-B-5](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-52.** Obsolete Carrier/Surface AQB/NQB-800 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Carrier/Surface AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
14A00014	ETN826920	5925-LL-H54-9994	NQB-A800	N/A	2a, 2b aux switch, may have motor operator
REPLACEMENT BREAKER INFO (1) - Carrier/Surface AQB/NQB-800					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED AND AUX SWITCH WIRING CONFIGURATION USED IN THE APPLICATION:					
A. FOR AC BREAKER APPLICATIONS WITH ONE OF THE FOLLOWING AUX SWITCH WIRING CONFIGURATIONS:					
1). 2A, 2B AUX SWITCH WITH 8 LEADS WIRED OUT: NQB-A802, APL 14A090011, NSN 5925-01-573-0248, P/N ETN359970, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
2). 2A, 2B AUX SWITCH WITH 6 LEADS WIRED OUT: NQB-A802, APL 14A050146, NSN 5925-01-535-3591, P/N ETN359920, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
B. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
A. REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.1</a> AND <a href="#">TABLE 320-B-5</a> OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON 2A, 2B AUX SWITCH WIRING CONFIGURATIONS.					

**Table 320-B-52.** Obsolete Carrier/Surface AQB/NQB-800 Breakers and  
Replacements - Continued

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.5.4.4](#) AND [TABLES 320-B-5](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (2) - Carrier/Surface AQB/NQB-800

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301278	ETN8266	5925-01-302-3307	NQB-A800	N/A	May have aux switch, may have motor operator

REPLACEMENT BREAKER INFO (2) - Carrier/Surface AQB/NQB-800

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED, WHETHER OR NOT AN AUX SWITCH IS USED IN THE APPLICATION AND, IF SO, THE AUX SWITCH WIRING CONFIGURATION USED IN THE APPLICATION.

A. FOR AC BREAKER APPLICATIONS WITH ONE OF THE FOLLOWING AUX SWITCH WIRING CONFIGURATIONS:

1). WITHOUT AUX SWITCH:

NQB-A802, APL 14A050120, NSN 5925-01-302-3307, P/N ETN3599, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

2). 1A, 1B AUX SWITCH WITH 4 LEADS WIRED OUT:

NQB-A802, APL 14A090010, NSN 5925-01-573-0246, P/N ETN359971, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

3). 1A, 1B AUX SWITCH WITH 3 LEADS WIRED OUT:

NQB-A802, APL 14A050121, NSN 5925-01-535-3596, P/N ETN359910, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

4). 2A, 2B AUX SWITCH WITH 8 LEADS WIRED OUT:

NQB-A802, APL 14A090011, NSN 5925-01-573-0248, P/N ETN359970, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

5). 2A, 2B AUX SWITCH WITH 6 LEADS WIRED OUT:

NQB-A802, APL 14A050146, NSN 5925-01-535-3591, P/N ETN359920, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

**Table 320-B-52.** Obsolete Carrier/Surface AQB/NQB-800 Breakers and  
Replacements - Continued

B. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS, REFER TO [PARAGRAPH 320-B.3.5.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. REFER TO [PARAGRAPH 320-B.3.5.4.1](#) AND [TABLE 320-B-5](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON 1A, 1B AND 2A, 2B AUX SWITCH WIRING CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.5.4.4](#) AND [TABLES 320-B-5](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (3) - Carrier/Surface AQB/NQB-800

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301289	ETN8243	NO NSN ON APL	A800	500UM (60 Hz and DC)	May have motor operator

REPLACEMENT BREAKER INFO (3) - Carrier/Surface AQB/NQB-800

NOTE 1: THE CIRCUIT BREAKER CITED ABOVE AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED

A. FOR AC BREAKER APPLICATIONS:

AQB-A802, APL 14A050138, NSN 5925-01-535-3598, P/N ETN3552, ELECTRONIC WITH 500 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).

B. FOR DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.5.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.5.4.4](#) AND [TABLES 320-B-5](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (4) - Carrier/Surface AQB/NQB-800

**Table 320-B-52.** Obsolete Carrier/Surface AQB/NQB-800 Breakers and  
Replacements - Continued

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301320	ETN8247	0000-LL-CA8-5010	A800	800U (60 Hz and DC)	May have 115Vac/28Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (4) - Carrier/Surface AQB/NQB-800					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED, WHETHER OR NOT A SHUNT TRIP IS USED IN THE APPLICATION AND, IF SO, THE SHUNT TRIP RATING REQUIRED:</p> <p>A. FOR AC BREAKER APPLICATIONS WITHOUT SHUNT TRIP: AQB-A802, APL 14A050139, NSN 5925-01-535-3599, P/N ETN3555, ELECTRONIC WITH 800 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).</p> <p>B. FOR AC BREAKER APPLICATIONS WITH 115VAC SHUNT TRIP: AQB-A802, APL 14A050117, NSN 5925-01-535-3594, P/N ETN355500S31, ELECTRONIC WITH 800 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).</p> <p>C. FOR AC BREAKER APPLICATIONS WITH 28VDC SHUNT TRIP: AQB-A802, APL 14A050116, NSN 5925-01-535-3605, P/N ETN355500S30, ELECTRONIC WITH 800 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).</p> <p>D. FOR ANY DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP (REFER TO <a href="#">TABLE 320-B-5</a> OF THIS APPENDIX).</p> <p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.2.1</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p> <p>C. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p>					

**Table 320-B-52.** Obsolete Carrier/Surface AQB/NQB-800 Breakers and Replacements - Continued

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (5) - Carrier/Surface AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301456	ETN8248	5925-00-539-3111	A800	800UM (60 Hz and DC)	May have motor operator
REPLACEMENT BREAKER INFO (5) - Carrier/Surface AQB/NQB-800					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED:					
A. FOR AC BREAKER APPLICATIONS: AQB-A802, APL 14A050139, NSN 5925-01-535-3599, P/N ETN3555, ELECTRONIC WITH 800 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
B. FOR DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (6) - Carrier/Surface AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301786	ETN8249ETN8480	5925-01-286-2278	A800	400UH (400 Hz)	May have motor operator
REPLACEMENT BREAKER INFO (6) - Carrier/Surface AQB/NQB-800					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					

**Table 320-B-52.** Obsolete Carrier/Surface AQB/NQB-800 Breakers and  
Replacements - Continued

AQB-A802, APL 14A050140, NSN 5925-01-535-3601, P/N ETN3581, ELECTRONIC WITH 400 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (7) - Carrier/Surface AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302377	ETN8269	5925-01-302-3307	NQB-A800	N/A	May have motor operator
REPLACEMENT BREAKER INFO (7) - Carrier/Surface AQB/NQB-800					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT DEPENDING ON THE BREAKER VOLTAGE TYPE (AC OR DC) REQUIRED:					
A. FOR AC BREAKER APPLICATIONS: NQB-A802, APL 14A050120, NSN 5925-01-302-3307, P/N ETN3599, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).					
B. FOR DC BREAKER APPLICATIONS: NO REPLACEMENTS ARE AVAILABLE.					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (8) - Carrier/Surface AQB/NQB-800					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES



**Table 320-B-52.** Obsolete Carrier/Surface AQB/NQB-800 Breakers and  
Replacements - Continued

140302457	ETN836810S35	5925-01-415-4599	A800	500UH (400 Hz)	1a, 1b aux switch, 120Vdc shunt trip, shunt trip cut-off switch, may have motor operator
REPLACEMENT BREAKER INFO (8) - Carrier/Surface AQB/NQB-800					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKERS MAY BE USED AS A REPLACEMENT DEPENDING ON THE AUX SWITCH WIRING CONFIGURATION USED IN THE APPLICATION:</p> <p>A. FOR APPLICATIONS WITH 4 LEADS WIRED OUT FOR 1A, 1B AUX SWITCH: AQB-A802, APL 14A090012, NSN 5925-01-573-0247, P/N ETN358271S32, ELECTRONIC WITH 500 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).</p> <p>B. FOR APPLICATIONS WITH 3 LEADS WIRED OUT FOR 1A, 1B AUX SWITCH: AQB-A802, APL 14A050118, NSN 5925-01-535-3583, P/N ETN358210S32, ELECTRONIC WITH 500 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 5925-00-785-5273, P/N ETN8227 (115VAC, 60Hz/120VDC) OR NSN 5925-01-536-6499, P/N ETN3596 (115VAC, 60Hz/120VDC).</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKERS INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSIONS, REFER TO <a href="#">PARAGRAPH 320-B.3.5.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.1</a> AND <a href="#">TABLE 320-B-5</a> OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON 1A, 1B AUX SWITCH WIRING CONFIGURATIONS. THIS AUX SWITCH IS SEPARATE FROM THE SHUNT TRIP CUT-OFF SWITCH DISCUSSED IN ITEM C BELOW</p> <p>B. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE TWO LEADS WIRED OUT FOR THE SHUNT TRIP.</p> <p>C. THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKERS CITED ABOVE HAVE A SHUNT TRIP CUT-OFF SWITCH. REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.2.1</a> OF THIS APPENDIX FOR INFORMATION ON POSSIBLE DIFFERENCES IN CUT-OFF SWITCH WIRING CONFIGURATIONS BETWEEN OBSOLETE AND REPLACEMENT BREAKERS.</p> <p>D. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.5.4.4</a> AND <a href="#">TABLES 320-B-5</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					

**Table 320-B-53.** List of Obsolete SPD AQB/NQB-1600 Circuit Breaker APLS Across Platforms

Carrier Unique	Surface Unique	Sub Unique	Carrier Surface Sub	Carrier Surface	Carrier Sub	Surface Sub
(1) 14A000003	(1) 140302053	(1) T14A040008	(1) 140301777	(1) 140301828	(1) 140301826	(1) 140301970
(2) 14A000010	(2) 140302155	(2) T140301839	(2) 140301825	(2) 140302359	(2) 140302181	(2) 140301991
(3) 140301777R		(3) T140301991	(3) 140302076			(3) 140301994
(4) 140301825R		(4) T140302150				
(5) 140301826R		(5) T140302343				
(6) 140301828R		(6) T140302381				
(7) 140301830		(7) 140302238				
(8) 140301830R		(8) 140302343				
(9) 140301831		(9) 140302381				
(10) 140301831R		(10) 140302429				
(11) 140301839						
(12) 140301848						
(13) 140301848R						
(14) 140301991R						
(15) 140302044						
(16) 140302181R						
(17) 140302343R						
(18) 140302352						
(19) 140302359R						

**Table 320-B-54.** Obsolete Carrier Unique AQB/NQB-1600 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Carrier Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
14A000003	ETN970410S06C	5925-LL-H54-4662	A1600	1000Y	1a,1b aux switch, 450Vac, 60Hz shunt trip, shunt trip cut-off switch, cannon plug connectors, may have motor operator
REPLACEMENT BREAKER INFO (1) - Carrier Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					

**Table 320-B-54.** Obsolete Carrier Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

AQB-A1604, APL 14A070221, NSN 5925-01-560-0163, P/N ETN365323S36C, ELECTRONIC WITH 1000 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE 1A, 1B AUX SWITCH, SHUNT TRIP, AND SHUNT TRIP CUT-OFF SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH CANNON PLUG CONNECTORS. REFER TO [PARAGRAPH 320-B.3.6.4.1](#) AND [TABLE 320-B-6A](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (2) - Carrier Unique AQB/NQB-1600

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
14A000010	ETN970200S06	5935-LL-H55-1306	A1600	600YM	2a, 2b aux switch, 450Vac, 60Hz shunt trip, shunt trip cut-off switch, cannon plug connectors, may have motor operator

REPLACEMENT BREAKER INFO (2) - Carrier Unique AQB/NQB-1600

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:

AQB-A1604, APL 14A070222, NSN 5925-01-560-0139, P/N ETN365127S36C, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

**Table 320-B-54.** Obsolete Carrier Unique AQB/NQB-1600 Breakers and Replacements - Continued

<p>A. THE 2A, 2B AUX SWITCH, SHUNT TRIP, AND SHUNT TRIP CUT-OFF SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH CANNON PLUG CONNECTORS. REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.1</a> AND <a href="#">TABLE 320-B-6A</a> OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.</p>					
<p>B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p>					
<p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (3) - Carrier Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301777R	ETN9708	5925-01-508-2252X31	NQB-A1600	N/A	May have motor operator
REPLACEMENT BREAKER INFO (3) - Carrier Unique AQB/NQB-1600					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:</p>					
<p>NQB-A1604, APL 14A050158, NSN 5925-01-535-3569, P/N ETN3699, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).</p>					
<p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p>					
<p>IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p>					
<p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (4) - Carrier Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301825R	ETN970820	5925-01-292-6570	NQB-A1600	N/A	2a, 2b aux switch, cannon plug connector, may have motor operator
REPLACEMENT BREAKER INFO (4) - Carrier Unique AQB/NQB-1600					

**Table 320-B-54.** Obsolete Carrier Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:

NQB-A1604, APL 14A070213, NSN 5925-01-560-0156, P/N ETN369922000C, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE 2A, 2B AUX SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE IS WIRED THROUGH A CANNON PLUG CONNECTOR. REFER TO [PARAGRAPH 320-B.3.6.4.1](#) AND [TABLE 320-B-6A](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (5) - Carrier Unique AQB/NQB-1600

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301826R	ETN9703	5925-01-230-8104	A1600	800Y	May have motor operator

REPLACEMENT BREAKER INFO (5) - Carrier Unique AQB/NQB-1600

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:

AQB-A1604, APL 14A040004, NSN 5925-01-521-6175, P/N ETN3652, ELECTRONIC WITH 800 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-54.** Obsolete Carrier Unique AQB/NQB-1600 Breakers and Replacements - Continued

OBSOLETE BREAKER INFO (6) - Carrier Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301828R	ETN9702	5925-01-237-9102	A1600	600YM	May have motor operator
REPLACEMENT BREAKER INFO (6) - Carrier Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A1604, APL 14A050147, NSN 5925-01-535-3612, P/N ETN3651, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (7) - Carrier Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301830	ETN970310S06	5925-00-350-1829	A1600	800Y	1a,1b aux switch, 450Vac, 60Hz shunt trip, shunt trip cut-off switch, cannon plug connectors, may have motor operator
REPLACEMENT BREAKER INFO (7) - Carrier Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A1604, APL 14A070223, NSN 5925-01-560-0140, P/N ETN365223S36C, ELECTRONIC WITH 800 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					

**Table 320-B-54.** Obsolete Carrier Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE 1A, 1B AUX SWITCH, SHUNT TRIP, AND SHUNT TRIP CUT-OFF SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH CANNON PLUG CONNECTORS. REFER TO [PARAGRAPH 320-B.3.6.4.1](#) AND [TABLE 320-B-6A](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (8) - Carrier Unique AQB/NQB-1600

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301830R	ETN970310S06	5925-00-350-1829	A1600	800Y	1a,1b aux switch, 450Vac, 60Hz shunt trip, shunt trip cut-off switch, cannon plug connectors, may have motor operator

REPLACEMENT BREAKER INFO (8) - Carrier Unique AQB/NQB-1600

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:

AQB-A1604, APL 14A070223, NSN 5925-01-560-0140, P/N ETN365223S36C, ELECTRONIC WITH 800 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE 1A, 1B AUX SWITCH, SHUNT TRIP, AND SHUNT TRIP CUT-OFF SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH CANNON PLUG CONNECTORS. REFER TO [PARAGRAPH 320-B.3.6.4.1](#) AND [TABLE 320-B-6A](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

**Table 320-B-54.** Obsolete Carrier Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (9) - Carrier Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301831	ETN9701	5925-01-230-8105	A1600	600Y	May have motor operator
REPLACEMENT BREAKER INFO (9) - Carrier Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A1604, APL 14A050147, NSN 5925-01-535-3612, P/N ETN3651, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (10) - Carrier Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301831R	ETN9701	5925-01-230-8105	A1600	600Y	May have motor operator
REPLACEMENT BREAKER INFO (10) - Carrier Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A1604, APL 14A050147, NSN 5925-01-535-3612, P/N ETN3651, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					



**Table 320-B-54.** Obsolete Carrier Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (11) - Carrier Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301839	ETN9705	5925-01-064-1582	A1600	1200Y	May have motor operator
REPLACEMENT BREAKER INFO (11) - Carrier Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A1604, APL 14A050155, NSN 5925-01-535-3556, P/N ETN3654, ELECTRONIC WITH 1200 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (12) - Carrier Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301848	ET88634X ET88635	5925-LL-H53- 1793	A1600	800Y	May have motor operator
REPLACEMENT BREAKER INFO (12) - Carrier Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A1604, APL 14A050156, NSN 5925-01-535-3557, P/N ETN3656, ELECTRONIC WITH 1600 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					

**Table 320-B-54.** Obsolete Carrier Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (13) - Carrier Unique AQB/NQB-1600

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301848R	ET88634X ET88635	5925-LL-H53- 1793	A1600	800Y	May have motor operator

REPLACEMENT BREAKER INFO (13) - Carrier Unique AQB/NQB-1600

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:

AQB-A1604, APL 14A050156, NSN 5925-01-535-3557, P/N ETN3656, ELECTRONIC WITH 1600 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (14) - Carrier Unique AQB/NQB-1600

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301991R	ETN 9708-10	5930-01-098-7893	NQB-A1600	N/A	1a,1b aux switch, cannon plug connector, may have motor operator

REPLACEMENT BREAKER INFO (14) - Carrier Unique AQB/NQB-1600

**Table 320-B-54.** Obsolete Carrier Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:

NQB-A1604, APL 14A070215, NSN 5925-01-560-0157, P/N ETN369921000C, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE 1A, 1B AUX SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE IS WIRED THROUGH A CANNON PLUG CONNECTOR. REFER TO [PARAGRAPH 320-B.3.6.4.1](#) AND [TABLE 320-B-6A](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (15) - Carrier Unique AQB/NQB-1600

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302044	ETN9707	5925-01-189-7513	A1600	1600Y	May have motor operator

REPLACEMENT BREAKER INFO (15) - Carrier Unique AQB/NQB-1600

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:

AQB-A1604, APL 14A050156, NSN 5925-01-535-3557, P/N ETN3656, ELECTRONIC WITH 1600 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-54.** Obsolete Carrier Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

OBSOLETE BREAKER INFO (16) - Carrier Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302181R	ETN970720	5925-01-145-6428	A1600	1600Y	2a, 2b aux switch, cannon plug connector, May have motor operator
REPLACEMENT BREAKER INFO (16) - Carrier Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A1604, APL 14A070217, NSN 5925-01-560-0160, P/N ETN365622000C, ELECTRONIC WITH 1600 AMP RATING PLUG, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
A. THE 2A, 2B AUX SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE IS WIRED THROUGH A CANNON PLUG CONNECTOR. REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.1</a> AND <a href="#">TABLE 320-B-6A</a> OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.					
B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (17) - Carrier Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302343R	ETN970710U01	5925-01-301-2507	A1600	1600Y	1a,1b aux switch, 115Vac, 60 Hz UVR, cannon plug connectors, may have motor operator
REPLACEMENT BREAKER INFO (17) - Carrier Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					

**Table 320-B-54.** Obsolete Carrier Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

AQB-A1604, APL 14A070227, NSN 5925- 01-560-0150, P/N ETN365615U01C, ELECTRONIC WITH 1600 AMP RATING PLUG, MANUFACTURED BY SPD. UVR AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE 1A, 1B AUX SWITCH AND UVR FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH CANNON PLUG CONNECTORS. REFER TO [PARAGRAPH 320-B.3.6.4.1](#) AND [TABLE 320-B-6A](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

REPLACEMENT BREAKER INFO (18) - Carrier Unique AQB/NQB-1600

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302352	ETN970210S06	5925-01-294-2406	A1600	600YM	1a,1b aux switch, 450Vac, 60Hz shunt trip, shunt trip cut-off switch, cannon plug connectors, may have motor operator

REPLACEMENT BREAKER INFO (18) - Carrier Unique AQB/NQB-1600

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:

AQB-A1604, APL 14A070224, NSN 5925-01-560-0154, P/N ETN365123S36C, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE 1A, 1B AUX SWITCH, SHUNT TRIP, AND SHUNT TRIP CUT-OFF SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH CANNON PLUG CONNECTORS. REFER TO [PARAGRAPH 320-B.3.6.4.1](#) AND [TABLE 320-B-6A](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.

**Table 320-B-54.** Obsolete Carrier Unique AQB/NQB-1600 Breakers and Replacements - Continued

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6 AND 320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
REPLACEMENT BREAKER INFO (19) - Carrier Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302359R	ETN970300S06	5925-01-315-6347	A1600	800Y	450Vac, 60Hz shunt trip, shunt trip cut-off switch, cannon plug connectors, may have motor operator
REPLACEMENT BREAKER INFO (19) - Carrier Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A1604, APL 14A070226, NSN 5925-01-560-0147, P/N ETN365227S36C, ELECTRONIC WITH 800 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
A. THE SHUNT TRIP AND SHUNT TRIP CUT-OFF SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH CANNON PLUG CONNECTORS. REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.1</a> AND <a href="#">TABLE 320-B-6A</a> OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.					
B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6 AND 320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					

**Table 320-B-55.** Obsolete Surface Unique AQB/NQB-1600 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Surface Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES

**Table 320-B-55.** Obsolete Surface Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

140302053	ETN970210	5925-01-123-5199	A1600	600YM	1a, 1b aux switch, cannon plug connector, may have motor operator
REPLACEMENT BREAKER INFO (1) - Surface Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A1604, APL 14A070225, NSN 5925-01-560-0141, P/N ETN365121000C, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
A. THE 1A, 1B AUX SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE IS WIRED THROUGH A CANNON PLUG CONNECTOR. REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.1</a> AND <a href="#">TABLE 320-B-6A</a> OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.					
B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (2) - Surface Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302155	ETN970810S22	5925-01-191-4068	NQB-A1600	N/A	1a, 1b aux switch, 120Vdc shunt trip, shunt trip cut-off switch, cannon plug connectors, may have motor operator
REPLACEMENT BREAKER INFO (2) - Surface Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
NQB-A1604, APL 14A070216, NSN 5925-01-560-0152, P/N ETN369923S32C, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					

**Table 320-B-55.** Obsolete Surface Unique AQB/NQB-1600 Breakers and Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE 1A, 1B AUX SWITCH, SHUNT TRIP, AND SHUNT TRIP CUT-OFF SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH CANNON PLUG CONNECTORS. REFER TO [PARAGRAPH 320-B.3.6.4.1](#) AND [TABLE 320-B-6A](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-56.** Obsolete Sub Unique AQB/NQB-1600 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Sub Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
T14A040008	ETN970820	5925-01-292-6570	NQB-A1600	N/A	2a, 2b aux switch, cannon plug connector, may have motor operator
REPLACEMENT BREAKER INFO (1) - Sub Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
NQB-A1604, APL T14A070231, NSN 5925-01-560-0156, P/N ETN369922000C, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
A. THE 2A, 2B AUX SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE IS WIRED THROUGH A CANNON PLUG CONNECTOR. REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.1</a> AND <a href="#">TABLE 320-B-6A</a> OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.					
B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					



**Table 320-B-56.** Obsolete Sub Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (2) - Sub Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
T140301839	ETN9705	5925-01-064-1582	A1600	1200Y	May have motor operator
REPLACEMENT BREAKER INFO (2) - Sub Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A1604, APL T14A090037, NSN 5925-01-535-3556, P/N ETN3654, ELECTRONIC WITH 1200 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (3) - Sub Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
T140301991	ETN970810	5930-01-098-7893	NQB-A1600	N/A	1a, 1b aux switch, cannon plug connector, may have motor operator
REPLACEMENT BREAKER INFO (3) - Sub Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
NQB-A1604, APL T14A070230, NSN 5925-01-560-0157, P/N ETN369921000C, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					

**Table 320-B-56.** Obsolete Sub Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE 1A, 1B AUX SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE IS WIRED THROUGH A CANNON PLUG CONNECTOR. REFER TO [PARAGRAPH 320-B.3.6.4.1](#) AND [TABLE 320-B-6A](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (4) - Sub Unique AQB/NQB-1600

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
T140302150	ETN971920	5925-01-152-6896	A1600	420	2a, 2b aux switch, cannon plug connector, may have motor operator

REPLACEMENT BREAKER INFO (4) - Sub Unique AQB/NQB-1600

THIS CIRCUIT BREAKER AND REPAIR PARTS ARE OBSOLETE. THERE ARE NO SUBSTITUTES AVAILABLE BECAUSE OF SPECIAL 420 AMP ELEMENT RATING.

OBSOLETE BREAKER INFO (5) - Sub Unique AQB/NQB-1600

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
T140302343	ETN970710U01	5925-01-301-2507	A1600	1600Y	1a,1b aux switch, 115Vac, 60 Hz UVR, cannon plug connectors, may have motor operator

REPLACEMENT BREAKER INFO (5) - Sub Unique AQB/NQB-1600

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:

AQB-A1604, T14A090038, NSN 5925-01-521-6191, P/N ETN365615U01C, ELECTRONIC WITH 1600 AMP RATING PLUG, MANUFACTURED BY SPD. UVR AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

**Table 320-B-56.** Obsolete Sub Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

A. THE 1A, 1B AUX SWITCH AND UVR FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH CANNON PLUG CONNECTORS. REFER TO [PARAGRAPH 320-B.3.6.4.1](#) AND [TABLE 320-B-6A](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (6) - Sub Unique AQB/NQB-1600

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
T140302381	ETN970710S06	5925-01-330-5912	A1600	1600Y	1a,1b aux switch, 450Vac, 60 Hz shunt trip, shunt trip cut-off switch, cannon plug connectors, may have motor operator

REPLACEMENT BREAKER INFO (6) - Sub Unique AQB/NQB-1600

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:

AQB-A1604, APL T14A070228, NSN 5925-01-560-4805, P/N ETN365623S36C, ELECTRONIC WITH 1600 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE 1A, 1B AUX SWITCH, SHUNT TRIP, AND SHUNT TRIP CUT-OFF SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH CANNON PLUG CONNECTORS. REFER TO [PARAGRAPH 320-B.3.6.4.1](#) AND [TABLE 320-B-6A](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-56.** Obsolete Sub Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

OBSOLETE BREAKER INFO (7) - Sub Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302238	ETN970610	5925-01-235-4322	A1600	1400Y	1a,1b aux switch, cannon plug connector, may have motor operator
REPLACEMENT BREAKER INFO (7) - Sub Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A1604, APL 14A070219, NSN 5925-01-560-0161, P/N ETN365521000C, ELECTRONIC WITH 1400 AMP RATING PLUG, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
A. THE 1A, 1B AUX SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE IS WIRED THROUGH A CANNON PLUG CONNECTOR. REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.1</a> AND <a href="#">TABLE 320-B-6A</a> OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.					
B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (8) - Sub Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302343	ETN970710U01	5925-01-301-2507	A1600	1600Y	1a,1b aux switch, 115Vac, 60 Hz UVR, cannon plug connectors, may have motor operator
REPLACEMENT BREAKER INFO (8) - Sub Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					

**Table 320-B-56.** Obsolete Sub Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

AQB-A1604, APL 14A04007, NSN 5925-01-521-6191, P/N ETN365615U01C, ELECTRONIC WITH 1600 AMP RATING PLUG, MANUFACTURED BY SPD. UVR AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE 1A, 1B AUX SWITCH AND UVR FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH CANNON PLUG CONNECTORS. REFER TO [PARAGRAPH 320-B.3.6.4.1](#) AND [TABLE 320-B-6A](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

OBSOLETE BREAKER INFO (9) - Sub Unique AQB/NQB-1600

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302381	ETN970710S06	5925-01-330-5912	A1600	1600Y	1a,1b aux switch, 450Vac, 60 Hz shunt trip, shunt trip cut-off switch, cannon plug connectors, may have motor operator

REPLACEMENT BREAKER INFO (9) - Sub Unique AQB/NQB-1600

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:

AQB-A1604, APL 14A070218, NSN 5925- 01-560-4805, P/N ETN365623S36C, ELECTRONIC WITH 1600 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP, CUT-OFF SWITCH, AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE 1A, 1B AUX SWITCH, SHUNT TRIP, AND SHUNT TRIP CUT-OFF SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH CANNON PLUG CONNECTORS. REFER TO [PARAGRAPH 320-B.3.6.4.1](#) AND [TABLE 320-B-6A](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS. .

**Table 320-B-56.** Obsolete Sub Unique AQB/NQB-1600 Breakers and Replacements - Continued

<p>B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6 AND 320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					
OBSOLETE BREAKER INFO (10) - Sub Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302429	ETN970600S06C	5925-01-423-4791	A1600	1400Y	450Vac, 60 Hz shunt trip, shunt trip cut-off switch, cannon plug connectors, may have motor operator
REPLACEMENT BREAKER INFO (10) - Sub Unique AQB/NQB-1600					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:</p> <p>AQB-A1604, APL 14A070220, NSN 5925-01-560-0162, P/N ETN365527S36C, ELECTRONIC WITH 1400 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE SHUNT TRIP AND SHUNT TRIP CUT-OFF SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH CANNON PLUG CONNECTORS. REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.1</a> AND <a href="#">TABLE 320-B-6A</a> OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.</p> <p>B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6 AND 320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					

**Table 320-B-57.** Obsolete Carrier/Surface/Sub Unique AQB/NQB-1600 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Carrier/Surface/Sub Unique AQB/NQB-1600					
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**Table 320-B-57.** Obsolete Carrier/Surface/Sub Unique AQB/NQB-1600

## Breakers and Replacements - Continued

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301777	ETN9708	5925-01-508-2252X31	NQB-A1600	N/A	May have motor operator
REPLACEMENT BREAKER INFO (1) - Carrier/Surface/Sub Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
NQB-A1604, APL 14A050158, NSN 5925-01-535-3569, P/N ETN3699, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (2) - Carrier/Surface/Sub Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301825	ETN970820	5925-01-292-6570	NQB-A1600	N/A	2a, 2b aux switch, cannon plug connector, may have motor operator
REPLACEMENT BREAKER INFO (2) - Carrier/Surface/Sub Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
NQB-A1604, APL 14A070213, NSN 5925-01-560-0156, P/N ETN369922000C, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
A. THE 2A, 2B AUX SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH A CANNON PLUG CONNECTOR. REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.1</a> AND <a href="#">TABLE 320-B-6A</a> OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.					

**Table 320-B-57.** Obsolete Carrier/Surface/Sub Unique AQB/NQB-1600

## Breakers and Replacements - Continued

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

## OBSOLETE BREAKER INFO (3) - Carrier/Surface/Sub Unique AQB/NQB-1600

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302076	ETN970800S01	5925-01-216-6211	NQB-A1600	N/A	115Vac, 60 Hz shunt trip, shunt trip cut-off switch, cannon plug connectors, may have motor operator

## REPLACEMENT BREAKER INFO (3) - Carrier/Surface/Sub Unique AQB/NQB-1600

NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:

NQB-A1604, APL 14A070214, NSN 5925-01-560-0158, P/N ETN369927S31C, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER, REFER TO [PARAGRAPH 320-B.3.6.3](#) OF THIS APPENDIX AND NOTE THE FOLLOWING:

A. THE SHUNT TRIP AND SHUNT TRIP CUT-OFF SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH CANNON PLUG CONNECTORS. REFER TO [PARAGRAPH 320-B.3.6.4.1](#) AND [TABLE 320-B-6A](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-58.** Obsolete Carrier/Surface Unique AQB/NQB-1600 Breakers and Replacements

## OBSOLETE BREAKER INFO (1) - Carrier/Surface Unique AQB/NQB-1600

APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
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**Table 320-B-58.** Obsolete Carrier/Surface Unique AQB/NQB-1600 Breakers  
and Replacements - Continued

140301828	ETN9702	5925-01-237-9102	A1600	600YM	May have motor operator
REPLACEMENT BREAKER INFO (1) - Carrier/Surface Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A1604, APL 14A050147, NSN 5925-01-535-3612, P/N ETN3651, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (2) - Carrier/Surface Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140302359	ETN970300S06	5925-01-315-6347	A1600	800Y	450Vac, 60 Hz shunt trip, shunt trip cut-off switch, cannon plug connectors, may have motor operator
REPLACEMENT BREAKER INFO (2) - Carrier/Surface Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A1604, APL 14A070226, NSN 5925-01-560-0147, P/N ETN365227S36C, ELECTRONIC WITH 800 AMP RATING PLUG, MANUFACTURED BY SPD. SHUNT TRIP AND CUT-OFF SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					

**Table 320-B-58.** Obsolete Carrier/Surface Unique AQB/NQB-1600 Breakers  
and Replacements - Continued

A. THE SHUNT TRIP AND SHUNT TRIP CUT-OFF SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH CANNON PLUG CONNECTORS. REFER TO [PARAGRAPH 320-B.3.6.4.1](#) AND [TABLE 320-B-6A](#) OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.

B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO [PARAGRAPH 320-B.3.6.4.2](#) AND [TABLES 320-B-6](#) AND [320-B-7](#) OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.

NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.

**Table 320-B-59.** Obsolete Carrier/Sub Unique AQB/NQB-1600 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Carrier/Sub Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301826	ETN9703	5925-01-230-8104	A1600	800Y	May have motor operator
REPLACEMENT BREAKER INFO (1) - Carrier/Sub Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A1604, APL 14A040004, NSN 5925-01-521-6175, P/N ETN3652, ELECTRONIC WITH 800 AMP RATING PLUG, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (2) - Carrier/Sub Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES

**Table 320-B-59.** Obsolete Carrier/Sub Unique AQB/NQB-1600 Breakers and Replacements - Continued

140302181	ETN970720	5925-01-145-6428	A1600	1600Y	2a, 2b aux switch, cannon plug connector, may have motor operator
REPLACEMENT BREAKER INFO (2) - Carrier/Sub Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
AQB-A1604, APL 14A070217, NSN 5925-01-560-0160, P/N ETN365622000C, ELECTRONIC WITH 1600 AMP RATING PLUG, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
A. THE AUX SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE IS WIRED THROUGH A CANNON PLUG CONNECTOR. REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.1</a> AND <a href="#">TABLE 320-B-6A</a> OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.					
B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					

**Table 320-B-60.** Obsolete Surface/Sub Unique AQB/NQB-1600 Breakers and Replacements

OBSOLETE BREAKER INFO (1) - Surface/Sub Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301970	NQB-A1600	5925-01-508-2252	NQB-A1600	N/A	May have motor operator
REPLACEMENT BREAKER INFO (1) - Surface/Sub Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
NQB-A1604, APL 14A050158, NSN 5925-01-535-3569, P/N ETN3699, MANUFACTURED BY SPD. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					

**Table 320-B-60.** Obsolete Surface/Sub Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (2) - Surface/Sub Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES
140301991	ETN970810	5930-01-098-7893	NQB-A1600	N/A	1a, 1b aux switch, cannon plug connector, may have motor operator
REPLACEMENT BREAKER INFO (2) - Surface/Sub Unique AQB/NQB-1600					
NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:					
NQB-A1604, APL 14A070215, NSN 5925-01-560-0157, P/N ETN369921000C, MANUFACTURED BY SPD. AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).					
NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:					
A. THE 1A, 1B AUX SWITCH FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE IS WIRED THROUGH A CANNON PLUG CONNECTOR. REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.1</a> AND <a href="#">TABLE 320-B-6A</a> OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.					
B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.					
NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.					
OBSOLETE BREAKER INFO (3) - Surface/Sub Unique AQB/NQB-1600					
APL	PART NO.	NSN	FRAME SIZE	TRIP UNIT TYPE	BREAKER ATTACHMENTS OR OTHER FEATURES

**Table 320-B-60.** Obsolete Surface/Sub Unique AQB/NQB-1600 Breakers and  
Replacements - Continued

140301994	ETN970120U01	5925-01-111-3373	A1600	600Y	2a, 2b aux switch, 115Vac, 60 Hz UVR, cannon plug connectors, may have motor opera- tor
REPLACEMENT BREAKER INFO (3) - Surface/Sub Unique AQB/NQB-1600					
<p>NOTE 1: THIS CIRCUIT BREAKER AND ASSOCIATED REPAIR PARTS ARE OBSOLETE. IF A SPARE CANNOT BE FOUND OR BREAKER CANNOT BE REPAIRED, THE FOLLOWING BREAKER MAY BE USED AS A REPLACEMENT:</p> <p>AQB-A1604, APL 14A070212, P/N ETN365126U01C, ELECTRONIC WITH 600 AMP RATING PLUG, MANUFACTURED BY SPD. UVR AND AUX SWITCH INSTALLED. IF MOTOR OPERATOR IS REQUIRED, USE MOTOR OPERATOR NSN 6105-01-158-6960, P/N ETN9770 (115VAC, 60Hz/120VDC).</p> <p>NOTE 2: FOR IMPORTANT FORM/FIT/FUNCTION INFORMATION ON REPLACEMENT BREAKER INCLUDING GUIDANCE ON HOW TO SET ELECTRONIC VERSION, REFER TO <a href="#">PARAGRAPH 320-B.3.6.3</a> OF THIS APPENDIX AND NOTE THE FOLLOWING:</p> <p>A. THE 2A, 2B AUX SWITCH AND UVR FOR THE OBSOLETE SPD BREAKER AND THE REPLACEMENT BREAKER CITED ABOVE ARE WIRED THROUGH CANNON PLUG CONNECTORS. REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.1</a> AND <a href="#">TABLE 320-B-6A</a> OF THIS APPENDIX FOR ADDITIONAL INFORMATION ON CANNON PLUG CONNECTOR CONFIGURATIONS.</p> <p>B. IF APPLICATION HAS A MOTOR OPERATOR, REFER TO <a href="#">PARAGRAPH 320-B.3.6.4.2</a> AND <a href="#">TABLES 320-B-6</a> AND <a href="#">320-B-7</a> OF THIS APPENDIX FOR SPD MOTOR OPERATOR FORM/FIT/FUNCTION INFORMATION.</p> <p>NOTE 3: UPON RECEIPT OF REPLACEMENT BREAKER, SHIP MUST SUBMIT A 4790CK TO UPDATE CONFIGURATION. IF IT IS DETERMINED THAT THE REPLACEMENT BREAKER DOES NOT MEET THE APPLICATION REQUIREMENTS, CONTACT NSWCCD-SSES AND NAVICP FOR ASSISTANCE.</p>					



**APPENDIX C****INSTALLATION GUIDANCE FOR TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS)**

TO PROVIDE OPTIMUM PROTECTION TVSSs SHOULD BE LOCATED AT THE INPUT POWER TERMINALS OF THE EQUIPMENT FOR WHICH VOLTAGE SPIKE PROTECTION IS REQUIRED.

WHILE THE ATTACHMENT OF TVSSs TO POWER PANELS IS FREQUENTLY DONE FOR ECONOMIC REASONS, TVSSs ARE TO BE CONSIDERED A PIECE OF USER EQUIPMENT AND USERS ARE TO BE ADVISED THAT TVSSs OPERATION MUST BE CHECKED AT THE BEGINNING OF EACH WATCHSTANDER'S WATCH.

**NOTE**

THIS DOCUMENT IS FOR INSTALLATION GUIDANCE OF TRANSIENT VOLTAGE SURGE SUPPRESSORS ONLY. THIS DOCUMENT DOES NOT SUPERSEDE ANY GSO REQUIREMENTS (GENERAL SPECIFICATIONS FOR OVERHAUL OF SURFACE SHIPS (NAVSEA S9AA0-AB-GOS-010)).

**CAUTION**

**FORCES AFLOAT MUST COMPLY WITH NAVY SAFETY PRECAUTIONS FOR FORCES AFLOAT, OPNAVINST 5100 SERIES.**

**CAUTION**

**ENSURE ALL TAG-OUT PROCEDURES ARE IN ACCORDANCE WITH CURRENT SHIPBOARD INSTRUCTIONS.**

**CAUTION**

**CONSIDER ALL ELECTRICAL LEADS TO BE ENERGIZED UNTIL POSITIVELY PROVEN THEY ARE DE-ENERGIZED.**

**CAUTION**

**HIGH VOLTAGE, HIGH CAPACITANCE COMPONENTS MAY CONTAIN VOLTAGES DANGEROUS TO LIFE.**

**320-C.1 PARTS AND SPECIAL TOOLS.**

## 320-C.1.1 PARTS LIST.

**Table 320-C-1-1.** Parts List for TVSS Installation

ITEM NO.	PART NUMBER	DESCRIPTION	QTY/ UNIT	REMARKS
1 1A	ITD80-120NN-USN-F, ITD80-120NN-USN-FR* Or LORN-120NNC-NM*	Surge Suppressor, 120 VAC, 3 Phase Delta (400/60 HZ)	1	NSN 5920-01-497-1802 or *NSN 5920-01-458-1197 w/remote relay
1B 1C	ITD80-480NN-USN-F, ITD80-480NN-USN-FR* Or LORN-480NNC-NM*	Surge Suppressor, 480 VAC , 3 Phase Delta (400/60 HZ)		NSN 5920-01-497-1796 or *NSN 5920-01-458-1196 w/remote relay
1D 1E	ITD80-120/208-USN-F, ITD80-120/208-USN-FR* Or LORN-3Y 120/208 A-C- NM*	Surge Suppressor, 120/208 VAC, 3 Phase Wye, with Neutral (400/60 HZ)		NSN 5920-01-497-1798 or *NSN 5920-01-473-6194 w/remote relay
1F 1G	ITD80-1S120-USN-F, ITD80-1S120-USN-FR* Or LORN1S 120A-C-NM*	Surge Suppressor, 120 VAC, Single Phase (400/60 HZ)		NSN 5920-01-497-1800 or *NSN 5920-01-476-5120 w/remote relay
1H	LORN-120NNC-NMX- 120V*	Surge Suppressor, 120 VAC, 3 Phase Delta, Stainless Steel Enclosure		Special Application, mine counter measures only. *NSN 5920-01-475- 1216w/remote relay
1J	LORN-480NNC-NMX- 480V*	Surge Suppressor, 480 VAC , 3 Phase Delta, Stainless Steel Enclosure		Special Application, mine counter measures only. *NSN5920-01-475-1084
2	LSFSGU-9 AWG-10	CABLE, Four Conductor, Ship- board Wire, Single Conductor, Stranded	AR	NSN: 6145-01-202-3510 (MIL-C-246-13/17) NSN:
3	T&B C10-10 or equal	Lug, Ring Terminal, 10-12 AWG #10 Stud	4	Used in TVSS NSN: 5940-00-114-1300
4	T&B C10-516 or equal T&B C10-38 or equal T&B C10-12 or equal	Lug, Ring Terminal, 10-12 AWG, 5/16 Bolt/Stud Lug, Ring Terminal, 10-12 AWG, 3/8 Bolt/Stud Lug, Ring Terminal, 10-12 AWG, 1/2 Bolt/Stud	AR	Used in source panel NSN: 5940-00-113-9819 NSN NSN
5A	NIP050X*	Conduit ½ X * Galvanized Nipple	2	*Length as required, NOT TO EXCEED 6 INCHES NSN:
5B	SCLN101	Locknut, ½ Inch	2	NSN:
5C	P/N:	Bushing, ½ Inch	2	NSN: (CHAFE GUARD)



**Table 320-C-1-1.** Parts List for TVSS Installation - Continued

ITEM NO.	PART NUMBER	DESCRIPTION	QTY/ UNIT	REMARKS
6	CES 2 FR	Cable Entry Seal, Size 2	2	NSN: (SHRINK TYPE, FOR CABLE RUN BTWN TVSS & POWER PANEL)
7		BX Connector, ½ inch	2	
8A	P/N: SEM 216195Z	#4 Nylon STUFFING Tube	2	NSN: 5975-01-296-4095 (STRAIGHT) NSN: 5975-01-989-5045 (90 ELBOW)
8B	P/N: 2594	Insert 2594 (PACKING)	2	NSN: 5330-00-202-2594
9	P/N:	Stack Stud, Welding, Aluminum, ¼ - 20	4	
10	P/N:	Stack Stud, Welding, Steel, ¼ - 20	4	NSN: 5307-00-272-6544
11	P/N:	"T" Bar, Mounting, Pair	1	SEE FIG 4-3 OR 4-5
12	P/N:	Bolt, Stainless Steel, ¼ - 20	4	Used with ITEM 11 NSN:
13	P/N:	Washer, flat, Stainless Steel, 0.585 OD	4	Used with ITEM 10 OR 11
14	P/N:	Washer, lock, Stainless Steel, ¼ Inch	4	Used with ITEM 10 OR 11
15	P/N:	Nut, hex, Stainless Steel, ¼ - 20	4	Used with ITEM 10 OR 11
16A	P/N:	Screw, 10-32 x ¾, Stainless Steel	1	NSN: NSN: NSN: NSN: (Used to connect a ground wire in the source power panel.)
16B	P/N:	Washer, flat, Stainless Steel, 10	2	
16C	P/N:	Washer, lock, Stainless Steel, 10	1	
16D	P/N:	Nut, 10-32, Stainless Steel	1	
17	3M 33+ or equal	Phase Tape, Black	AR	NSN:
18	3M 35 or equal	Phase Tape, White	AR	NSN:
19	3M 35 or equal	Phase Tape, Red	AR	NSN:
20	3M 35 or equal	Phase Tape, Green	AR	NSN:
21	3M 35 or equal	Phase Tape, Yellow	AR	NSN: (FOR NEUTRAL/ WYE)
22	ALB-1	Circuit Breaker, 30 Amp	AR	NSN:5925-01-277-8536
23	A-101	Circuit Breaker, 30 Amp	AR	NSN:
24	SPACKLE/PASTE FOSTER 30-36 SEALFAS COATING			NSN: (FOR REPAIR OF LAGGING)
25	TAPE			NSN: (FOR REPAIR OF LAGGING)

**Table 320-C-1-1.** Parts List for TVSS Installation - Continued

ITEM NO.	PART NUMBER	DESCRIPTION	QTY/ UNIT	REMARKS
26	BACKING PLATE (STIFF-ENER)			MFD TO SUIT (IF REQ'D; USING BOLT-ING METHOD) Typical dimensions: W 2", H 9.25", Th 1/8" (drilled to suit)
27	THIMBLE			NSN: (IF REQ'D: WHEN CONNECTING TO POWER PANEL)
28	CONDUIT, CABLE P/N			NSN: Greenfield or Ligitite
29	PAINT		1 GAL	AS COLOR DICTATES
30	DISCONNECT SWITCH	SYM 851	1	NSN 5930-01-245-9532

## 320-C.1.2 SPECIAL TOOLS.

1. Welding equipment to affix "T" Bars or Stack Studs to bulkheads.
2. 7/8-inch knockout to effect hole in TVSS enclosure for ½ inch pipe/conduit nipple. (KNOCKOUT SET: 721-7/8", 125AV)
3. 1-inch knockout to effect a hole in TVSS enclosure for size 2 Cable Entry Seal. (KNOCKOUT SET: 721-1", 126AV)
4. 1 ¼ inch knockout to effect hole in steel or stainless steel TVSS enclosure for size 4 Nylon Tube. (KNOCKOUT SET: 721-1 ¼", 128AV)
5. Bit, drill, 19/64 inch.
6. Bit, drill, 7/16 inch.
7. Welding equipment to affix aluminum "T" Bars or aluminum Stack Studs to bulkheads, if necessary .

**320-C.2 DETERMINING LOCATION AND TYPE OF TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS) TO BE INSTALLED.**

320-C.2.1 TVSS units should be installed only on systems that have electronic equipment that are susceptible to high transients voltage spikes and have a history of high repair and component replacement costs. Samples of legacy systems that warrant protection include: communication systems electronics, combat systems electronics and degaussing system static power supplies.

320-C.2.2 Conduct a survey of platform systems to ensure that adequate coverage is being provided. Shipcheck with knowledgeable shipboard personnel, and a review of system electrical drawings. The final determination on where to install Transient Voltage Surge Suppression Devices should be made by the electrical systems In-service Engineering Activity \*(ISEA) (Naval Surface Warfare Center Carderock Division, Philadelphia, Pa Code 934). The ISEA has the responsibility for maintaining the performance metrics and installation matrices for the TVSS devices. A matrix of installation locations is required for configuration control.

320-C.2.3 During this survey, decide upon mounting and wiring methods. Keeping in mind units should be as close as possible to the protected panel/load. The manufacturer recommends keeping lead length to less than 18 inches. Verify voltage and phasing at the protected power panel and identify the correct unit to be installed. Use [Table 320-C-1-1](#) item 1, as a guide of available units.

320-C.2.4 2.4 The installation matrix should not include those panels that provide power solely to equipment such as lighting, or mechanical units, such as pumps, ac units or ventilation fans.

320-C.2.5 See [Figures 320-C-2-1A](#) through [320-C-2-1C](#) for typical electrical schematics of systems with TVSS units installed in optimal location.

### NOTE

TVSS should be installed 18 inches or less from the power panel whenever practical.

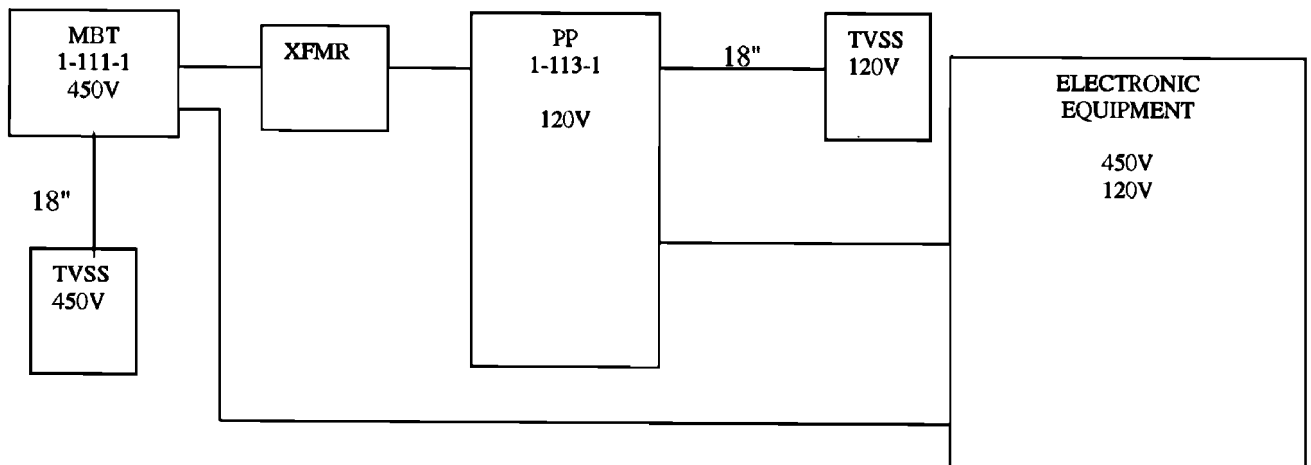


Figure 320-C-2-1A. Typical Electrical Schematics With TVSS Units Installed in Optimal Location

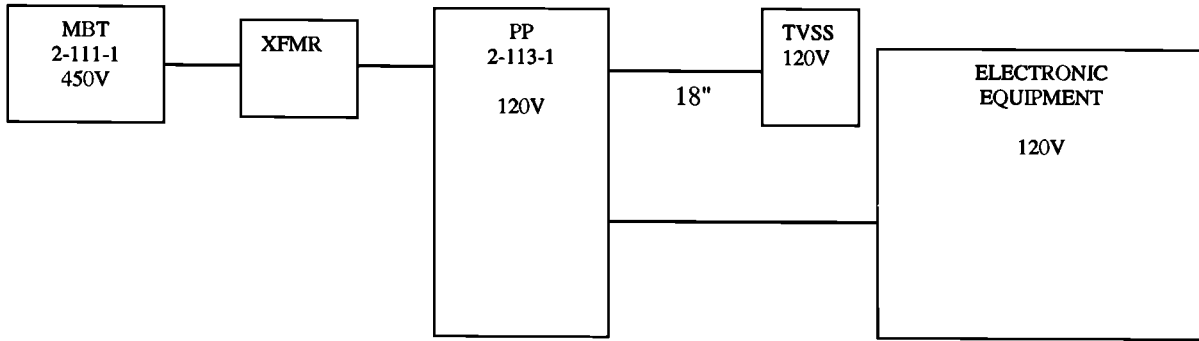


Figure 320-C-2-1B. Typical Electrical Schematics With TVSS Units Installed in Optimal Location

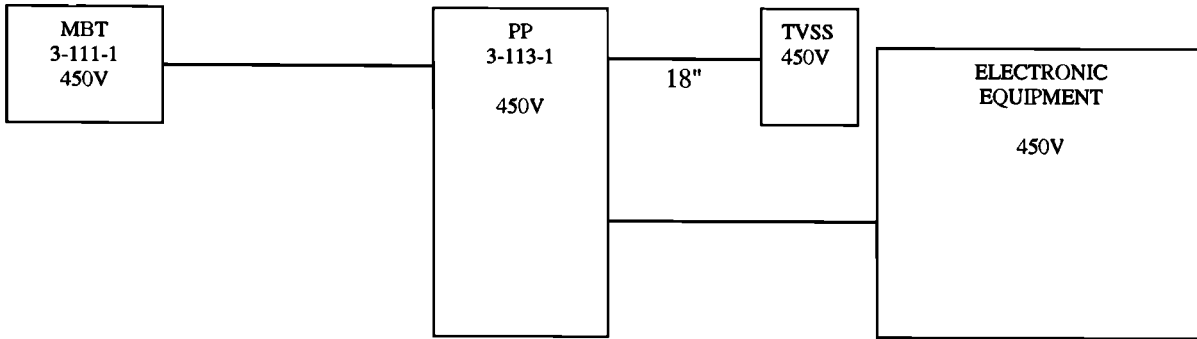


Figure 320-C-2-1C. Typical Electrical Schematics With TVSS Units Installed in Optimal Location

### 320-C.3 PRE-INSTALLATION PROCEDURES.

#### NOTE

Refer to [paragraph 320-C.1.1](#) for all item numbers ( ).

320-C.3.1 Verify information provided from [paragraph 320-C.2.0](#) to ensure correct units have been provided. Identify method of wiring, for example:

#### NOTE

The TVSS device is fused for 30-40 Amps depending on manufacture. Due to the rapid response time of the TVSS, breakers supplying the TVSS can be rated between 5-50 Amps. (The fuse will blow before the breaker will trip.)

### CAUTION

**Only one (3) phase circuit breaker shall be used for TVSS connectivity. In the case of a distribution panel with only single phase ALB-1 circuit breakers, connectivity shall be made by using (3) single phase circuit breakers that supply power to only one end user piece of equipment.**

- a. Use existing 5-50 amp 3 phase spare breaker. (PREFERRED METHOD).
- b. Obtain a new 5-50 amp 3 phase breaker. (SECONDARY METHOD).
- c. Connecting to the bus bar assembly. (LAST PREFERENCE) (Note: Conductor size for TVSS to bus bar must be equal to or greater than the conductor size/breaker rating for the feeder conductor supplying power to the power panel).

320-C.3.2 Tag out the panel that the TVSS will be protecting in accordance with current shipboard procedures. Using a voltmeter, ensure there is no power to the panel.

320-C.3.3 Unpack TVSS; record unit serial number of TVSS on the installation matrix.

320-C.3.4 Open TVSS enclosure and remove fuse cover plate, ensure fuses are installed. Dispose of fuse cover plate and close TVSS enclosure.

#### **320-C.4 INSTALLATION PROCEDURES.**

##### References

- a. NAVSSESINST 4720.2C; PROCESS AND POLICY FOR SHIPBOARD INDUSTRIAL WORK
- b. NAVSEAINST 9090.310D (AIT Guidance)
- c. MIL-STD-1310G STANDARD PRACTICE FOR SHIPBOARD BONDING, GROUNDING AND OTHER TECHNIQUES FOR ELECTROMAGNETIC COMPATIBILITY AND SAFETY.

Review Ref(a) and (b) thoroughly and fill out appropriate check sheets prior to initiating TVSS installation.

#### **NOTE**

Refer to [paragraph 320-C.1.1](#) for all item numbers ( ).

320-C.4.1 MOUNTING TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS).

#### **NOTE**

The distance between the TVSS and power panel should be as short as possible (make every effort not to exceed 18 inches), and provide for as straight a run of cable as possible.

320-C.4.1.1 Identify the location for the TVSS to be mounted. Ensure there is sufficient clearance all around to allow the front cover of the TVSS to open fully to access the fuses and internal connections. During this step, ensure the TVSS is near the electrical connection within the source panel. This will allow for using the shortest amount of wire as possible. Ensure the panel is tagged out, Remove the source panel cover; check the interior to ensure there will be adequate clearance to allow for installation of a pipe nipple (5), cable entry seal (6), BX connector (7) or stuffing tube (8). Care must be taken to ensure that a pipe nipple will fit between the source panel and the TVSS. (See [Figure 320-C-4-4](#) for recommended pipe nipple clearances).

320-C.4.1.2 Select one of the below listed methods of mounting.

320-C.4.1.2.1 Welded “T” bars refer to [paragraph 320-C.4.1.3](#).

320-C.4.1.2.2 Welded stack studs refer to [paragraph 320-C.4.1.3](#).

320-C.4.1.3 If a welding method is selected, obtain permission to weld in this space and adjoining areas using ships established “Hot Work” procedures and Reference (a).

320-C.4.1.3.1 Mark area where welding is to be performed using a template ( [Figure 320-C-4-4](#)) and remove bulkhead lagging from both sides of bulkhead (if necessary). Remove the lagging carefully, and retain for re-use.

320-C.4.1.3.2 Remove paint by chipping and grinding to provide for a good electrical ground connection.

320-C.4.1.3.3 T-Bar and template configuration are different for the two TVSS manufacturers. If using TVSS (1, 1.B, 1.D, 1.F) see [Figure 320-C-4-5](#) for T-Bar and [Figure 320-C-4-6](#) for template dimensions, if using TVSS (1A, 1C, 1E, 1G, 1H, 1J) see [Figure 320-C-4-3](#) for T-Bar and [Figure 320-C-4-4](#) for template dimensions. Mount “T” bars, [Figure 320-C-4-3](#) or [Figure 320-C-4-5](#) (11) or stack studs (10) to a template [Figure 320-C-4-4](#) or [320-C-4-6](#) or the TVSS (1). Use fasteners (12, 13, 14, 15) if bolting to the “T” bar assembly. Use fasteners (13, 14, 15) if using stack stud method.

320-C.4.1.3.4 Position the template or TVSS in the area cleaned in [step 320-C.4.1.3.2](#) and tack weld the T-bar, [Figure 320-C-4-3](#) or [320-C-4-5](#), (11) or stack studs (10). Position TVSS unit (1) to verify alignment and placement. Remove the source panel cover; check the interior to ensure there will be adequate clearance to allow for installation of a pipe nipple (5), cable entry seal (6), BX connector (7) or stuffing tube (8). Care must be taken to ensure that a pipe nipple will fit between the source panel and the TVSS. (See [Figure 320-C-4-4](#) for recommended pipe nipple clearances).

320-C.4.1.3.5 Once alignment has been verified, have the T-bar, [Figure 320-C-4-3](#) or [320-C-4-5](#), (11) or stack studs (10) securely welded.

320-C.4.1.3.6 After welds have cooled, remove slag and prime/paint (29) area where welding operations disturbed existing paint.

320-C.4.1.3.7 Replace any bulkhead insulation/lagging removed in [step 320-C.4.1.3.1](#). Seal the seams in bulkhead insulation using Spackle (24) and tape (25).

320-C.4.1.3.8 Temporarily fasten TVSS to foundation, and mark hole locations for pipe nipple (5), cable entry seal (6), BX connector (7) or stuffing tube (8). Once the TVSS and panel have been marked, remove TVSS.

### **CAUTION**

**Ensure drilling operation does not impact TVSS/power panel internals.**

320-C.4.1.3.9 Drill a pilot hole (7/16") to allow for using the knockout in both the TVSS and panel.

320-C.4.1.3.10 Clean interior of panel and TVSS.

320-C.4.1.3.11 If the TVSS is close enough (6 INCHES OR LESS) to allow for use of a pipe nipple, fabricate a hole in both the TVSS and power panel using the 7/8-inch knockout. If the TVSS is greater than 6 inches from the power panel proceed to [step 320-C.4.1.3.15](#).

320-C.4.1.3.12 Check the holes and remove burrs if necessary.

320-C.4.1.3.13 Mount the TVSS to the welded stack studs or T-Bar , [Figure 320-C-4-3](#) or [320-C-4-5](#), with bolts (12), washers (13, 14) and nuts (15). Tighten securely.

320-C.4.1.3.14 Install a suitable length pipe nipple (5A) using lock nuts (5B) and bushings (5C).

320-C.4.1.3.15 If the distance between the TVSS and panel was too great (more than 6 inches) to allow for the use of a pipe nipple, then decide between using cable entry seal (6), BX connector (7) or Stuffing tube (8). This is necessary to determine the diameter of knockout used.

### **NOTE**

**If TVSS mounting distance is too far for use of a pipe nipple, and bus connection is being made, conduit (28) must be used to protect the conductors.**

320-C.4.1.3.16 If installing a size 2 CES (6), use a 1 inch knockout, if using a 1/2" BX connector use a 7/8" knockout and if using a #4 nylon tube (8), use a 1 1/4-inch knockout.

320-C.4.1.3.17 Mount the TVSS to the welded stack studs or "T" bar with bolts (12), washers (13, 14) and nuts (15). Tighten securely.

320-C.4.1.3.18 Install the CES (6), BX Connector (7) or Nylon tubes (8).

320-C.4.1.3.19 Proceed to [step 320-C-4.1.4](#), to wire the unit.

320-C.4.1.4 Ensure the TVSS is properly bonded/grounded per reference (c). Class B (bolting or clamping) bonding is acceptable. The ground DC resistance shall not exceed 0.1 Ohm for electrical safety. All metallic surfaces used for bonding/grounding shall be cleaned to a smooth bright metal surface and sealed and preserved in

accordance with reference (c). Type III bond straps are permissible. Check the interior of the power panel to ensure a ground stud or bolt is available for use, if not, drill a 5/32-inch hole in the side of the panel and remove the paint to ensure a clean, smooth, and bright metal surface is obtained. A separate ground stud may be required to be welded to the adjacent bulkhead to allow for installation of the bond strap.

320-C.4.1.4.1 Wire the unit by routing four pieces of wire (2) from the TVSS to the panel connection area. Keep these wires neat, but as short as possible. Phase mark each end of these wires with colored tape.

#### NOTE

Phase tape is not necessary if using cable with color coding. Phase "A" - Black (xx) Phase "B" - White (xx) Phase "C" - Red (xx) Ground - Green (xx) Neutral - Green/Yellow (xx).

320-C.4.1.4.2 Prepare and lug up the TVSS end of these wires. Use lug (3), ensuring they are crimped securely. Connect to the proper studs within the TVSS and tighten connections.

320-C.4.1.4.3 At the power panel, prepare and connect wires to either a spare breaker (preferred) or to the bus bars. Note that when bus connecting an additional switch (30) or circuit breaker is to be installed to provide a local method of disconnect. The breaker chosen must be rated between 5-50 amps. Use correct size lugs or thimble (4 or 27). Ensure they are phase marked as above. (See [Figure 320-C-4-1](#))

320-C.4.1.4.4 Connect the ground wire to either existing ground bolt/stud or fasten with #10 hardware (3) to newly prepared location. (See [Figure 320-C-4-1](#))

320-C.4.1.4.5 If using a 120/208 with neutral TVSS, connect an additional wire for neutral, use lug (3) in the TVSS and in the panel use the appropriate sized lug (4). Phase mark this wire with green/yellow tape (20, 21). (See [Figure 320-C-4-2](#))

320-C.4.1.5 If connected to a spare breaker cut a length of cable (2) (LSFSGU-9) and prepare one end by stripping back cable jacket a suitable length to allow for the wires to be connected in the TVSS. If connecting directly to the bus feed to the power panel the cable connection between the TVSS and the power panel must be either through a pipe nipple (5) or hard protective conduit (28) (refer to [paragraph 320-C.4.1.4.3](#) for addition of local disconnect switch).

320-C.4.1.6 Route the cable into the TVSS through the selected connector and assemble/tighten securely.

320-C.4.1.7 Prepare individual wire by measuring and stripping back to allow for installation of lugs (3), in the TVSS.

320-C.4.1.8 Phase mark each wire after identifying the correct wire as printed on the conductors.

320-C.4.1.9 Install lugs and connect to correct TVSS terminals, tighten locking nuts.



320-C.4.1.10 Route cable to the power panel, and mark a correct length to strip back to install into the power panel.

320-C.4.1.11 Strip back outer cable jacket and route the cable into the power panel, ensure enough length is maintained to allow for a neat but shortest length possible to reach the source breaker or bus bars connections.

320-C.4.1.12 At the power panel, prepare and connect wires to either a breaker or bus bars. Use correct size lugs or thimble (4 or 27). Phase mark the wire ends.

320-C.4.1.13 Connect the ground wire to either existing ground bolt/stud or fasten with #10 hardware (3) to newly prepared location.

#### **320-C.4.2 COMPLETE INSTALLATION .**

E-4.2.1 Verify all electrical connections for correctness of phasing and tightness. Ensure interiors of both the TVSS and power panel is clean, the wires are tidy and neat and will not interfere with the operation of any breakers. Check line to ground insulation resistance for power conductors into and out of the power panel to ensure that no cables were damaged and/or accidental grounds introduced during TVSS installation.

320-C.4.2.2 Close the TVSS cover, reinstall power panel cover and clean up work area.

320-C.4.2.3 Notify ships force the circuit is ready to be reenergized and tested. Ships force personnel will remove tags and restore power to the circuit.

#### **NOTE**

The TVSS should be bonded to ground in accordance with reference (c).

**NOTE: THE TVSS SHOULD BE BONDED TO GROUND IN ACCORDANCE WITH REFERENCE (C).**

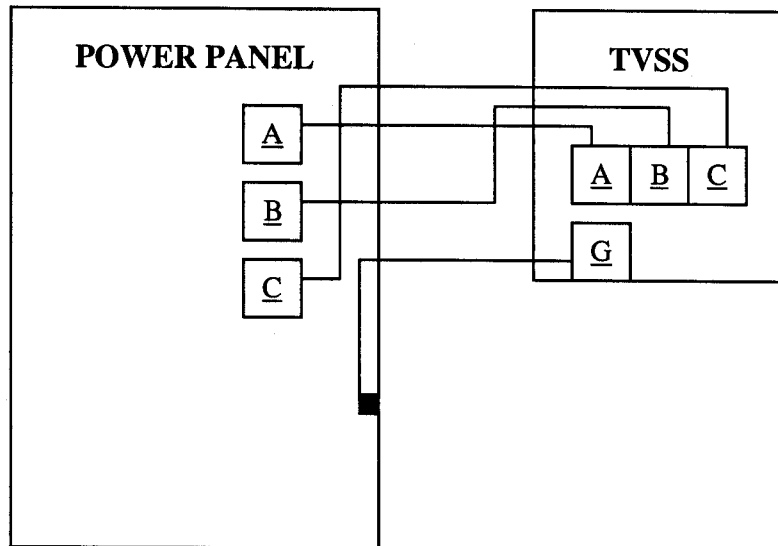


Figure 320-C-4.1. Installation for Delta

**NOTE: THE TVSS SHOULD BE BONDED TO GROUND IN ACCORDANCE WITH REFERENCE (C).**

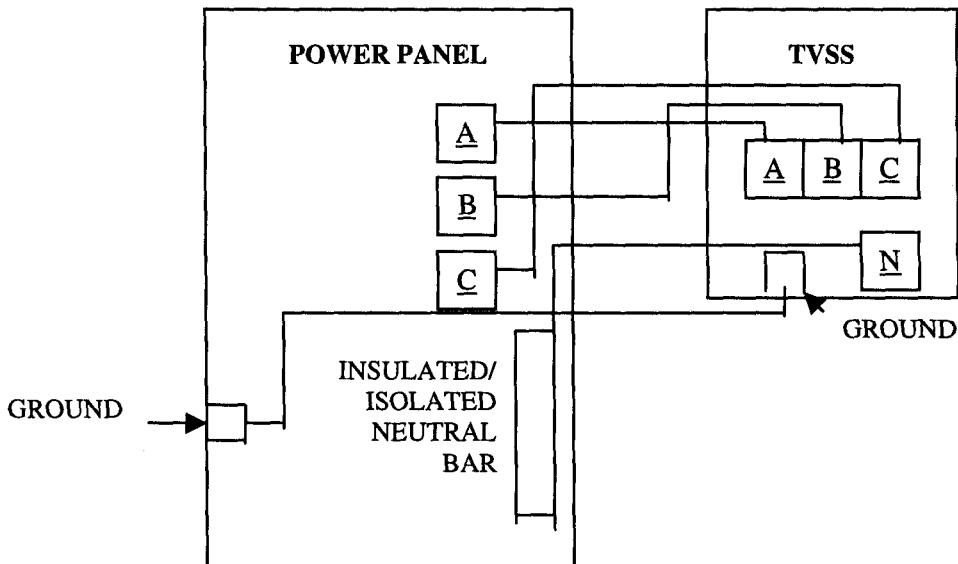


Figure 320-C-4.2. Installation for WYE Configuration

1 1/2" x 1/4" x 7.5" L Carbon steel flatbar with 1/4" mounting holes drilled on centers (in 3/4" up 7/8") welded to a 1 1/2" x 6.75" L\* sch 40 carbon steel pipe.  
\*Cut pipe to length as required.  
\*NOTE: If welding to aluminum structure, substitute steel with aluminum flatbar and pipe.

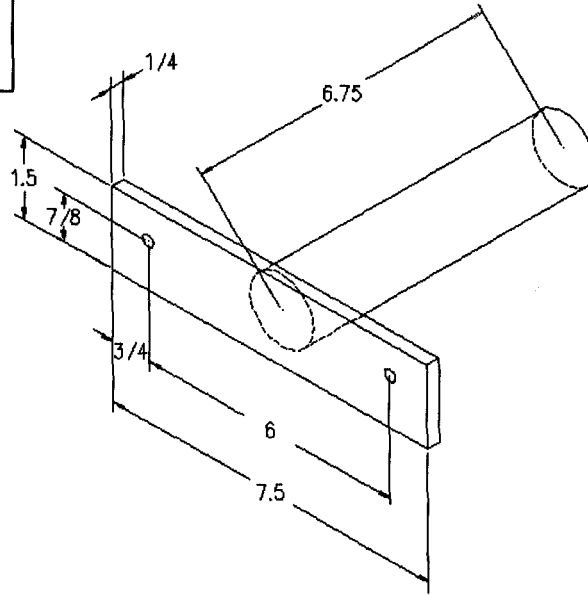
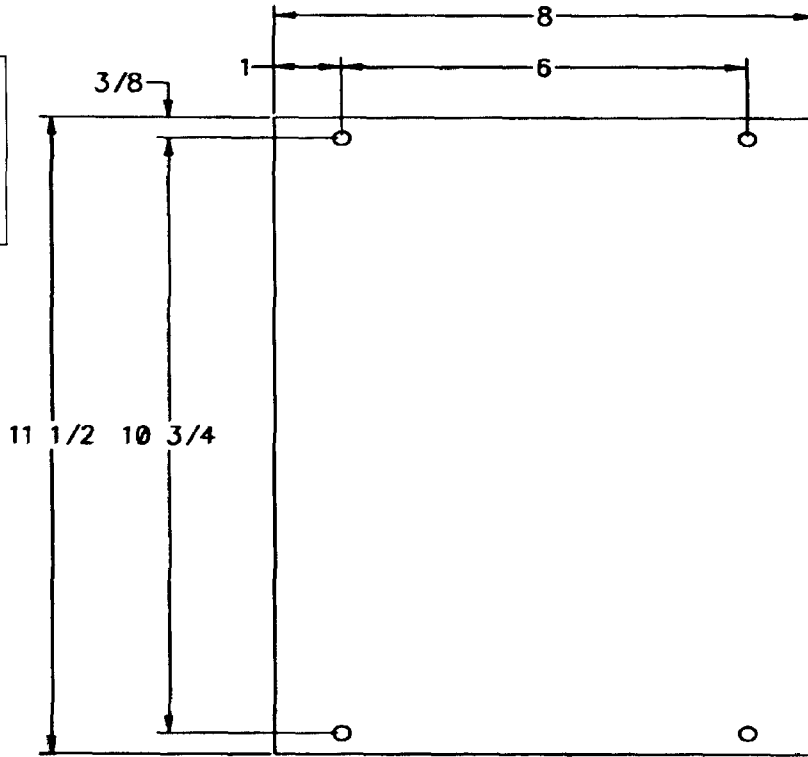


Figure 320-C-4-3. Sample T-Bar Assembly for Items 1A, 1C, 1E, 1G, 1H, and 1J

1/4" diameter mounting holes drilled 1" in and 3/8" down between centers.



Nipple size	Clrc to PwrPnl
1 1/2"	5/8"
2"	1 1/8"
3"	1 7/8"
4"	3 1/8"
6"	4 7/8"

Note: these clearances are the gap btwn the TVSS and the power panel for side by side mounting, add a 1/2" to the required clearance when mounting the TVSS on the top or bottom of the power panel with a nipple.

Figure 320-C-4-4. Sample TVSS Mounting Template for Items 1A, 1C, 1E, 1G, 1H, and 1J

2 x 3/16 x 11 1/8 cold rolled carbon steel flatbar with 19/64 mounting holes welded to a 1 1/4" IPS black iron pipe.  
\*Cut pipe to length as required.  
\*NOTE: If welding to aluminum structure, substitute steel with aluminum flatbar and pipe.

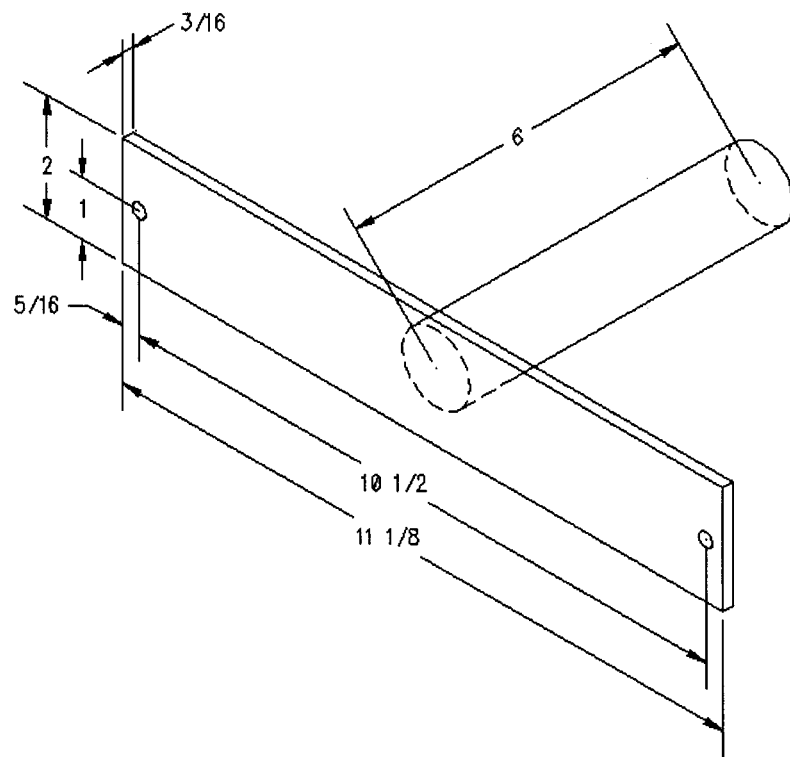


Figure 320-C-4-5. Sample T-Bar Assembly for Items 1, 1B, 1D, and 1F

19/64 clear hole  
11 1/8 dimensions  
include a 3/4 inch metal  
flange each side.  
TVSS dimension is  
9 1/2 x 11 3/4.

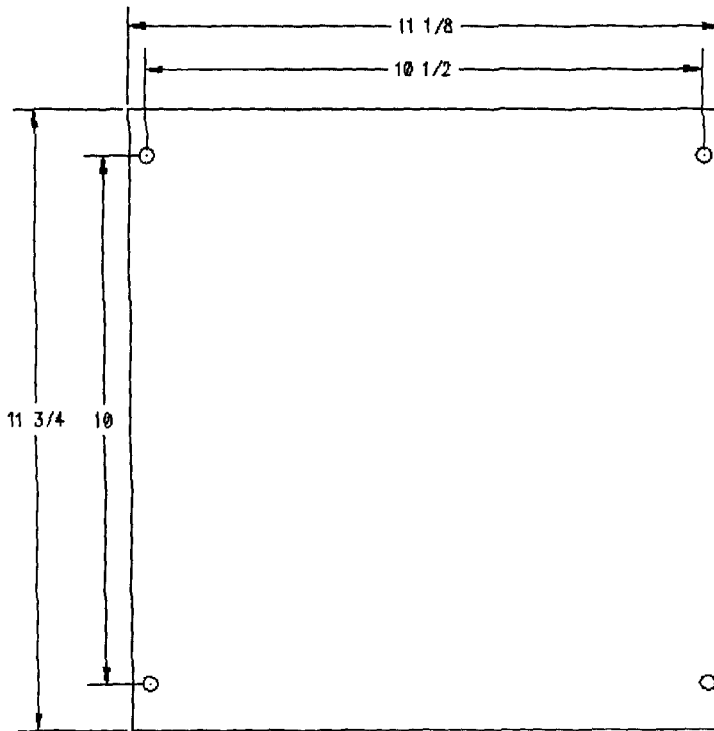


Figure 320-C-4-6. Sample TVSS Mounting Template for Items 1, 1B, 1D, and 1F

### 320-C.5 TESTING.

320-C.5.1 Verify that the three (3) LEDs are lit.

320-C.5.2 If not, open the front cover of the TVSS and verify (IN ACCORDANCE CURRENT SHIPBOARD PROCEDURES) voltage is supplied for each phase to the TVSS and through the fuses.

320-C.5.3 If the correct voltage is being supplied to the TVSS and through the fuses and the lights are not illuminated, the LED circuit is faulty. Contact the LCM for assistance.

320-C.5.4 If the correct voltage is being supplied to the TVSS but not through the fuse(s), replace the faulty fuse(s). Recheck the voltage through the fuse(s).

320-C.5.5 If the correct voltage is not being supplied to the TVSS, tag out the power panel in accordance with current shipboard procedures and verify all connections. Tag in the power panel in accordance with current shipboard procedures and verify the voltage supplied to the TVSS.

320-C.5.6 If the LEDs are still not working, the unit is faulty, contact the LCM for assistance.

### 320-C.6 POST INSTALLATION PROCEDURES.

#### 320-C.6.1 LABEL PLATE FOR TVSS.

320-C.6.1.1 The following information shall be included on a label plate that will be attached to the cover of the TVSS: Power Panel Number TVSS is attached to: Circuit Breaker TVSS is Attached or if bus connected, the circuit designation that feeds the panel.

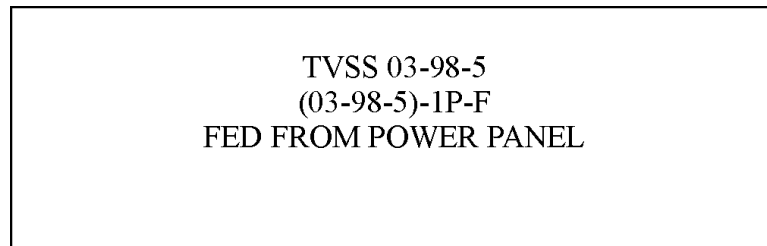


Figure 320-C-6-1. Label Plate for TVSS

#### 320-C.6.2 LABEL PLATE FOR CIRCUIT BREAKER.

320-C.6.2.1 The following information shall be included (when “piggybacking” on a dedicated breaker to another system) on a label plate that will be attached to the power panel cover:

- Power Panel Number
- Power Panel Voltage
- TVSS Circuit Breaker Designation
- TVSS Nomenclature
- Circuit Breaker Rating

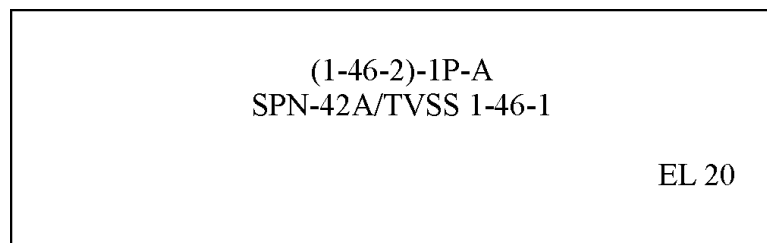


Figure 320-C-6-2. Label Plate for Circuit Breaker

320-C.6.2.2 The following information shall be included (when using a spare breaker) on a label plate that will be attached to the power panel cover:

- Power Panel Number
- Power Panel Voltage
- TVSS Circuit Breaker Designation
- TVSS Nomenclature
- Circuit Breaker Rating



Figure 320-C-6-3. for Power Panel Cover

320-C.6.2.3 Affix a Guarantee Information tag that may be supplied by NSWCCD-SESS, Code 9342, or made locally. The tag should have the following information and be placed in a prominent location on the front cover.

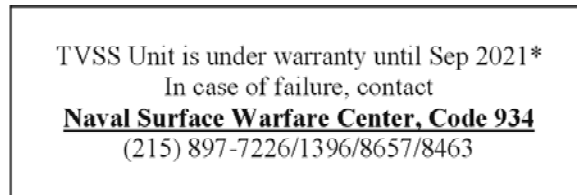


Figure 320-C-6-4. Guarantee Information Tag

\* This date will be 25 years from date of installation for model numbers beginning with ITD, and 20 years from date of installation for model numbers beginning with LORN.

320-C.6.2.4 Ensure ships configuration files are updated by submitting configuration change forms (4790CK).

### 320-C.6.3 INSTALLATION MATRIX.

320-C.6.3.1 Develop an installation matrix that includes the system, power panel number, TVSS serial number, voltage, cycles, and equipment protected for each TVSS installed. Provide this to the Life Cycle Manager (LCM) after completion of the install.

Mail to:  
Commander Naval Surface Warfare Center  
Carderock Division Machinery and Electrical Systems Department  
U.S. Naval Business Center  
Bldg 619, 3rd Floor



Philadelphia, PA 19112-1403  
ATTN: E. Markey, Code 934  
(215) 897-7226 or DSN 443-7226



**APPENDIX D****NON-STANDARD SINGLE-PHASE AND THREE PHASE POWER FOR  
COMMERCIAL-OFF-THE-SHELF (COTS)****320-D.1**

COTS equipment shall utilize, to the maximum extent practicable, standard power in accordance with MIL-STD-1399, Section 300. When approved, non-standard power shall be supplied to COTS equipment, that is designed to operate in a grounded distribution system, in accordance with [Figures 320-D-1-1](#) NAVSEA Standard Drawings 7512881 (Three-Phase) and [320-D-1-2](#) 7598285 (Single-Phase).









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INCLUDE COMPLETE ADDRESS

USE  
PROPER  
POSTAGE

FOR OFFICIAL USE ONLY

**COMMANDER  
CODE 310 BLDG 1389  
NAVSURFWARCENDIV NSDSA  
4363 MISSILE WAY  
PORT HUENEME CA 93043-4307**

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