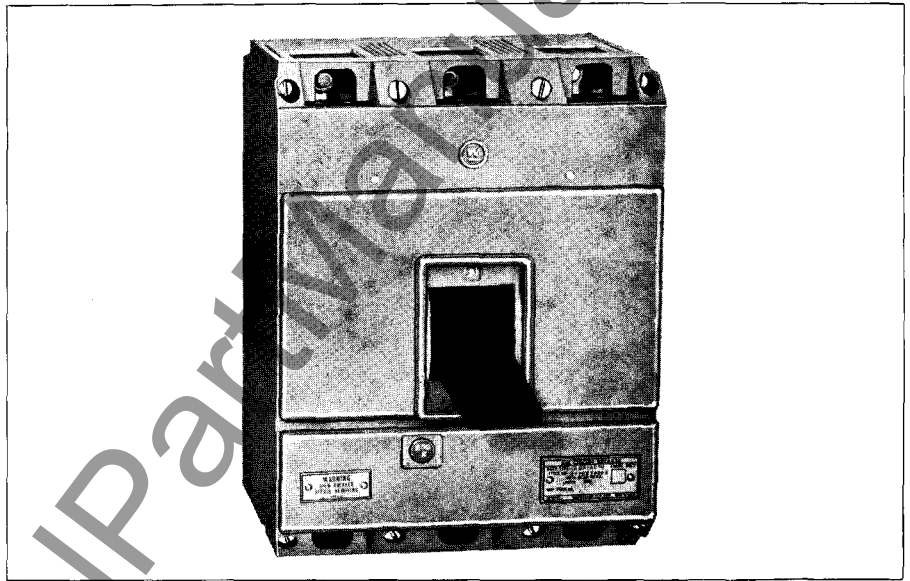




April 1991
Supersedes Technical Data 29-220,
pages 1-2, dated February 1988
Mailed to: E, C/29-200A

5 to 1600 Amperes
1500 to 150,000 Amperes I.C.

AB DE-ION[®] Circuit Breakers for Naval Shipboard Use



Selector Guide for Navy Circuit Breakers

Breaker Type	Specification	Hi-Shock Spec	No. of Poles	Ampere Rating	Voltage Rating	Inter-rupting Rating, Amperes	Tripping Elements	Page
ALB-1	MIL-C-17588	MIL-S-901	1	5- 50	125 V Dc 125 V Ac	2,500 ^① 5,000●	Thermal Magnetic	5
NLB-1	MIL-C-17588	MIL-S-901	1	50	125 V Dc 125 V Ac		None	5
AQB-A50	MIL-C-17361	MIL-S-901	3	10- 50	250 V Dc 500 V Ac	2,500 5,000	Thermal Magnetic	11
NQB-A50	MIL-C-17361	MIL-S-901	3	10- 50	250 V Dc 500 V Ac	2,500 5,000	None	11
AQB-A100	MIL-C-17361	MIL-S-901	2, 3	15- 100	250 V Dc 500 V Ac	10,000 15,000	Thermal Magnetic	17
NQB-A100	MIL-C-17361	MIL-S-901	2, 3	100	250 V Ac 500 V Dc		None	17
AQB-A101	MIL-C-17361	MIL-S-901	3	15- 100	250 V Dc 500 V Ac	10,000 15,000	Thermal Magnetic	21
NQB-A101	MIL-C-17361	MIL-S-901	3	100	250 V Dc 500 V Ac		None	21
AQB-A250	MIL-C-17361	MIL-S-901	2, 3	125- 250	250 V Dc 500 V Ac	15,000 20,000	Thermal Magnetic	29
NQB-A250	MIL-C-17361	MIL-S-901	2, 3	250	250 V Dc 500 V Ac		None	29
AQB-LF100	MIL-C-17361	MIL-S-901	3	15- 100	500 V Ac	100,000	Thermal Magnetic Fuses	35
AQB-LF250	MIL-C-17361	MIL-S-901	3	125- 250	500 V Ac	100,000	Thermal Magnetic Fuses	37
AQB-L400	MIL-C-17361	MIL-S-901	3	250- 400	500 V Ac	150,000	Electrical	41
AQB-LL400	MIL-C-17361	MIL-S-901	3	250- 400	500 V Ac	100,000	Electrical	41
AQB-A1601	MIL-C-17361	MIL-S-901	3	500-1600	500 V Ac	75,000	Thermal Magnetic	55
NQB-A1601	MIL-C-17361	MIL-S-901	3	1600	500 V Ac		None	55

① A 5 ampere breaker has an interrupting rating of 1500 amperes Ac or Dc.



Description

These molded case Navy circuit breakers provide both overload protection for conductors and short circuit protection for all circuit elements such as conductors, motors and starters. They also serve as manual disconnecting means as well as circuit protectors.

All Westinghouse circuit breakers in this Technical Data meet applicable Navy specifications for "hi-shock". These manually operated breakers are rated from 5 to 1600 amperes with interrupting ratings from 1,500 to 150,000 amperes. (See "selector guide" on page one for ratings and Navy specifications.)

Design Features

Westinghouse Navy circuit breakers retain all the features of standard commercial type AB De-ion breakers listed on the next page under "standard features." Built to Navy specifications, they incorporate the following Navy requirements:

Specific Navy Features

① **Shock Resistant Molded Case:** Housing consists of rear base section and cover molded of glass alkyd material. This material, reinforced glass filled thermosetting plastic, has very high mechanical strength (shock and impact resistance), is both fire and moisture-resistant and provides excellent dielectric characteristics.

② **Anti-Shock Device:** Inertia weight over center pole holds trip bar in latched position under shock conditions but does not prevent thermal or magnetic trip units from functioning on overload and short circuits.

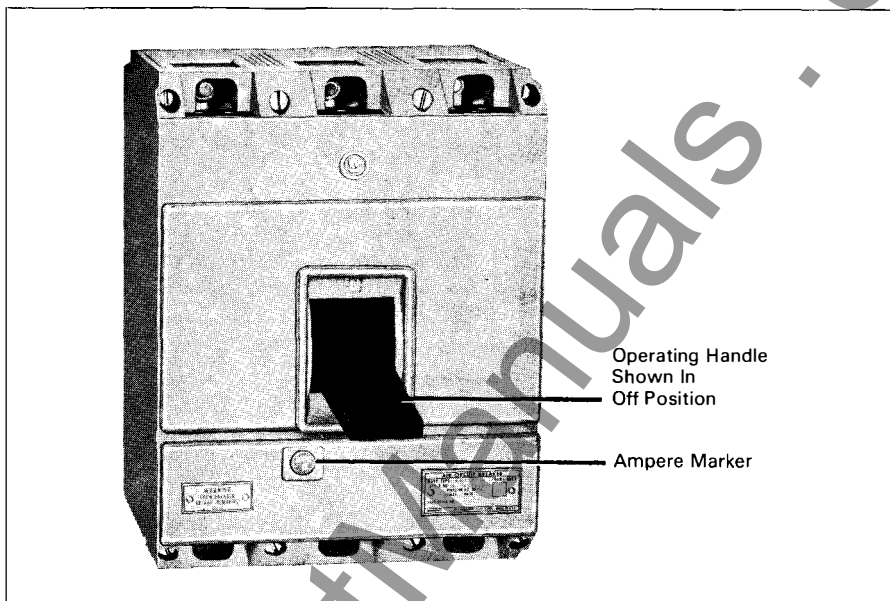
③ **Calibrated for 50°C:** All Navy breakers are calibrated for shipboard installation at 50°C ambient.

④ **Interchangeable Trip Units:** All thermal and magnetic trip units in AQB circuit breakers are encased in sealed, self-contained units that are interchangeable with other trip units of different ampere ratings within the same frame size.①

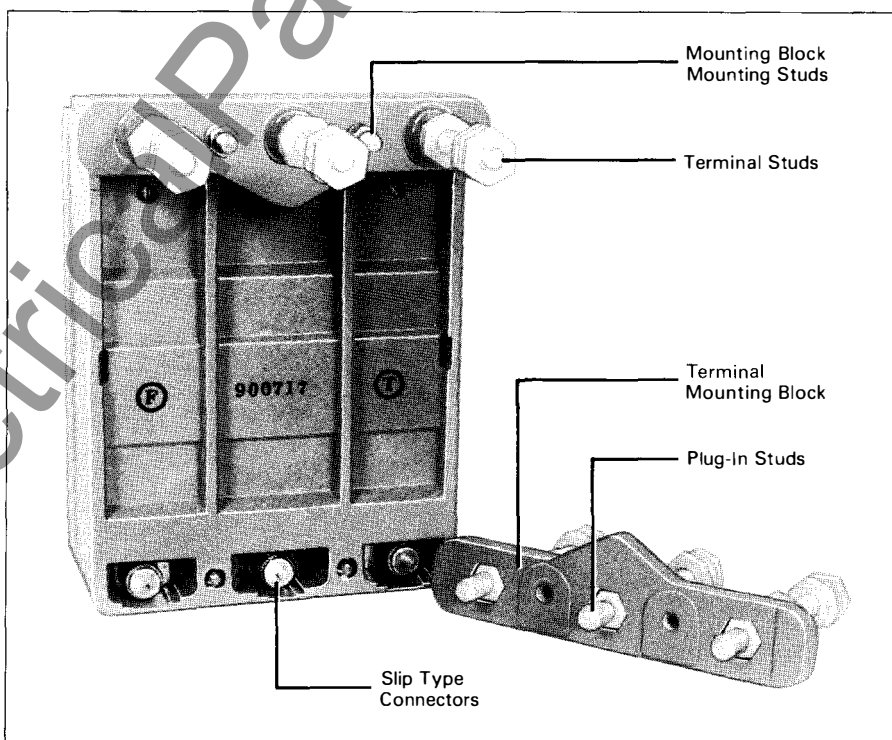
⑤ **Plug-in Connectors:** All AQB breakers are designed for easy plug-in installation. Plug-in type connectors are built into the base of the breaker for use with molded mounting blocks complete with studs. For front connection, pressure-type cable terminals are used instead of plug-in connectors.② ALB breakers have a clamp terminal on the line end to receive panelboard bus stab projections.

① Interchangeable trip units are not available in the A101, ALB-1 or A50.

② All A101 and A50 breakers have plug-in connectors. Front or rear connectors determined by mounting base selected.



Front view of assembled AQB-A250 Navy circuit breaker. Note that the shock resistant material (MAI-60) used for housing and cover is light gray.



Rear view of breaker showing terminal blocks for switchboard mounting. (Terminal block attached at line end of breaker and removed from load end.)



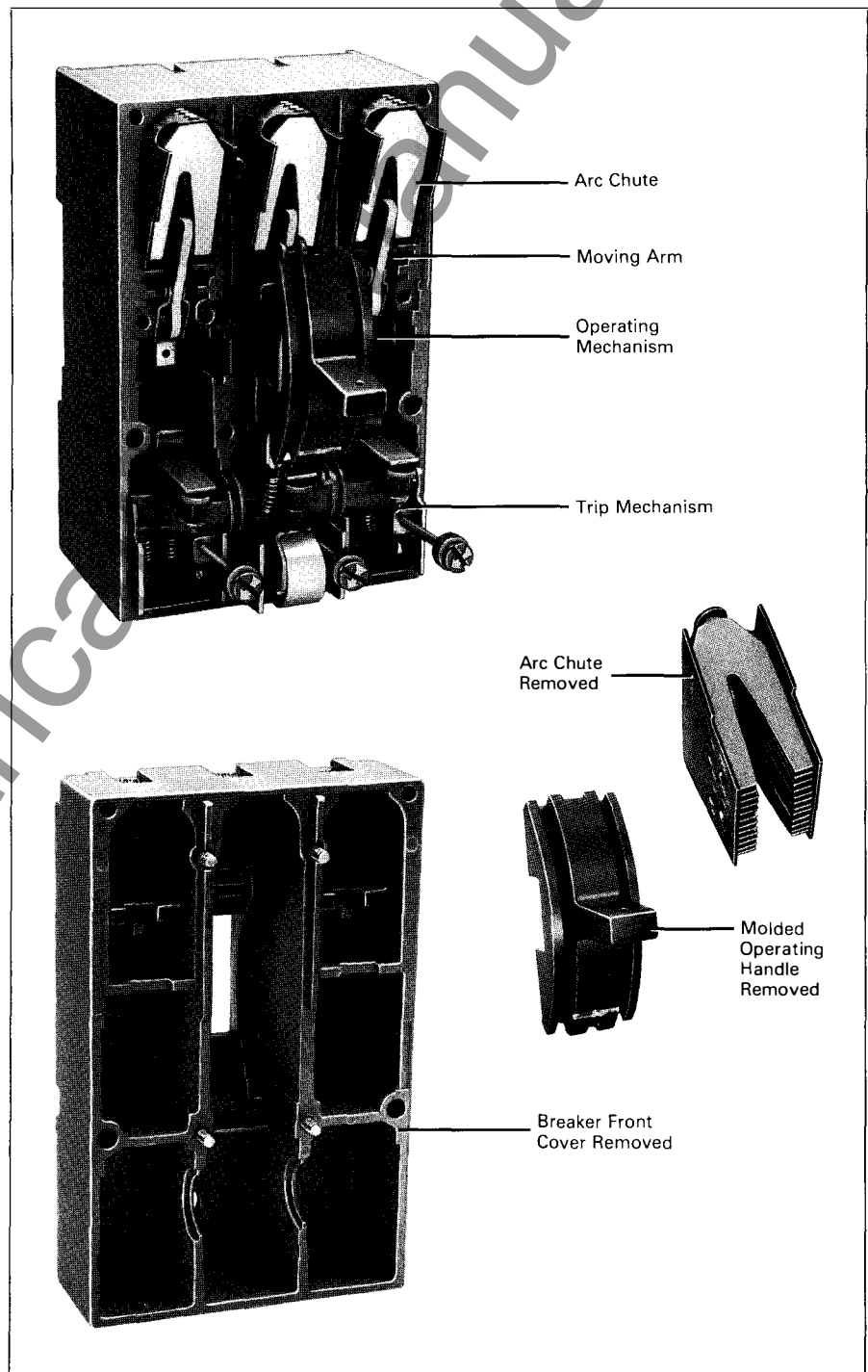
April 1991
Supersedes Technical Data 29-220,
pages 1-2, dated October 1978
Mailed to: E, C/29-220A

5 to 1600 Amperes
1500 to 150,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

Standard Features

- ① **Corrosion-Resistant:** All parts are specially treated to resist corrosion. Fungus-moisture resistant treatments for severe atmospheres are available as modifications.
- ② **Positive Position Indication:** Position of handle always indicates ON, OFF, or TRIPPED.
- ③ **Free Bearing Surfaces:** Dissimilar metals are used to prevent bearing wear and eliminate sticking.
- ④ **De-ion Arc Quenchers:** This Westinghouse development consists of a series of grid plates mounted in parallel between supports of insulating material. The slots in the steel plates are directly over the contacts and draw the arc from the moving contact up into the divided chamber where it is confined, divided, and extinguished.
- ⑤ **Silver Alloy Contacts:** Special silver alloy contacts prevent sticking and welding, increase contact life and insure low resistance when carrying full-rated load.
- ⑥ **Quick-Make, Quick-Break Over Center Toggle Mechanism:** Provides quick, positive action in opening and closing of circuits, prevents "teasing" of contacts and reduces contact wear.
- ⑦ **Complete Interpole Barriers:** Insure against internal flashovers when faults occur.
- ⑧ **Common Trip:** Two and three-pole units have insulated common trip bar that opens all poles simultaneously when an overload occurs on any one, thus eliminating possibility of single-phasing.
- ⑨ **Tested Accuracy:** All tripping members have ground and polished latch surfaces heat treated to prevent galling or later distortion. All parts are tested in temperature-controlled atmosphere to assure correct calibration and perfect mating. Each breaker is thoroughly tested.
- ⑩ **Factory Sealed:** Smaller breakers are factory sealed to prevent tampering with calibration. Interchangeable trip units are individually sealed.





Application

Designed primarily for circuit protection, Westinghouse Navy circuit breakers are used in lighting and power panels, switchboards, distribution centers and load centers aboard ship. The photograph below illustrates the use of molded case circuit breakers in a typical Navy switchboard.



General Ordering Information

When ordering Westinghouse Navy circuit breakers, consult the check list below to make sure you have provided correct information. You should specify:

1. Quantity, Westinghouse Part Number and National Stock Number of:
 - a. Complete breaker or frame, trip unit, fuses (where required) and/or attachments where available.
 - b. Plug-in mounting block or front connecting cable terminals.
 - c. Spare breakers or trip units. (usually one required for each ten units or fraction thereof of each current rating.)
 - d. Technical Manuals.
2. Shipment:
Specify transportation means, method of packaging and preservation, and required shipping date.
3. Drawings:
Specify quantity of outline or master plan drawings required.
4. Inspection:
Indicate whether Government Source inspection is required at factory prior to shipment.

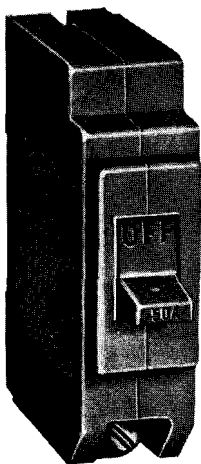


April 1991
Supersedes Technical Data 29-220,
pages 5-6, dated May 1980
Mailed to: E, C/29-200A

Types ALB-1, NLB-1, 125 Volts Ac and Dc,
50 Amperes Maximum, 5000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

ALB-1 and NLB-1 Breakers
Specification: MIL-C-17588
5-50 Amperes, 60 or 400 Cycle
125 Volts Ac or Dc Single Pole



ALB-1 Navy circuit breaker. Note clamp type stab terminal for panelboard mounting at line end and pressure type terminal for front connection at load end.

Interrupting Rating

10-50 Amp Units: 5,000 Amps Ac and 2500 Amps Dc
5 Amp Unit: 1,500 Amps Ac or Dc

High shock Navy ALB-1 circuit breakers are designed for shipboard protection of single phase Ac and Dc circuits or three-phase Ac circuits when breakers are connected by handle yokes for 2 and 3-pole operation.

The NLB-1 breaker is the non-automatic design of the ALB-1. Since the tripping element is omitted, it is used as a manual disconnect.

Non-adjustable thermal and magnetic trip elements are factory calibrated and sealed. The tripping element is counterbalanced to reduce possibility of accidental tripping under shock. All parts are given a corrosion-resistant treatment in compliance with MIL-E-917.

Plug-in line connections simplify panelboard mounting. A clamp type terminal on the line end of the breaker provides plug-in connection to bus stabs in panelboard mounting blocks. For front connection, there is a pressure type terminal on the load end of the breaker.

List Prices Refer to Price List 29-020 Circuit Breakers – Net Weight: 8 oz.

Type	Ampere Rating	Style Number	National Stock No.
ALB-1	5	454D507G01	5925-00-204-7494
ALB-1	10	454D507G02	5925-00-204-7488
ALB-1	15	454D507G03	5925-00-549-5366
ALB-1	20	454D507G04	5925-01-017-3011
ALB-1	25	454D507G05	5925-00-549-5359
ALB-1	30	454D507G06	5925-00-549-5360
ALB-1	35	454D507G07	5925-01-175-8204
ALB-1	40	454D507G08	5925-01-261-5625
ALB-1	50	454D507G09	5925-00-549-5365
NLB-1①	50	454D507G10	5930-00-548-7068

Special ALB-1 and NLB-1 Breakers

Similar to above except to have a 1A-1B auxiliary switch rated 5 amp resistive, 250 volts Ac or 30 volts Dc max. (Not submitted for Navy approval, and does not use breaker mounting bases.) Order by description.

Mounting Bases



Top view of typical ALB-1 panelboard mounting base. (Style 454D509G04)

Type	Style Number	National Stock No.	Net Wt. in Lbs.
Single breaker, front panel supported	454D509G01	5925-01-005-4983	1/4
Single breaker, surface mounted	454D509G02	.....	1/4
Two breakers, front panel supported	454D509G03	.....	1/2
Dc, single phase② and part (1/3) of combination for 3-phase③	454D509G04	5925-00-660-3562	2/3
Part (2/3) of combination for 3-phase application③	454D509G05	5925-00-201-7175	2/3
3-phase panel application④	454D509G06	5925-00-544-5980	1
Dc, single phase② and part (1/3) of combination for 3-phase③	454D509G08	5925-00-201-7176	2/3

Individual Reproductions: When required, reproductions of master drawings, outline drawings and certification sheets can be ordered as follows:

Item	Description
1	Full size photolithographic tracing of master drawing on vellum
2	Outline and drilling plan on vellum
3	Certification data on vellum
4	Reproductions of items 1, 2 or 3

Drawings Available: Master drawing 900J396; breaker outline 314C218; mounting bases 455D791 and 369D592.

Technical Manual: Navships No. 362-2228. This booklet per MIL-M-15071. When required, order BVR-TM-378.

Handle Yokes: Provide interlocking of two or three one-pole breakers for simultaneous operation. Individual pole tripping is obtained without normal trip indicating (center) position.

Poles	Style Number	National Stock No.
2	207B508H01	5925-00-202-0938
3	207B508H02	5925-00-296-8926

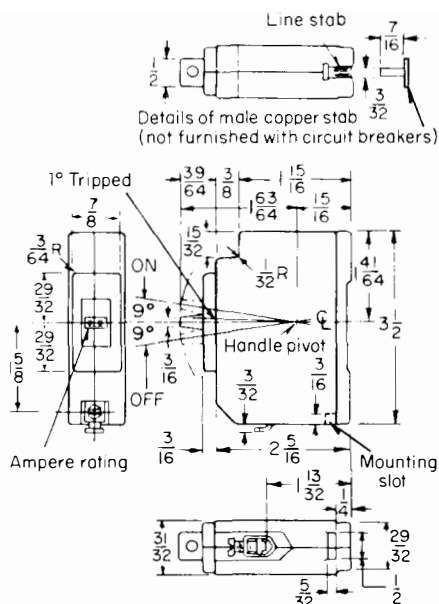
- ① Tripping element omitted for manual disconnect. Letter "N" hot stamped in white on handle.
- ② In Dc or single phase panel applications, basic pattern is one molded base accommodating four single-pole breakers. (See pages 7 and 8.)

- ③ In 3-phase application where basic pattern is three molded bases, one 454D509G04 and two 454D509G05 are required, each base accommodating two breakers per circuit (See page 7.)
- ④ For 3-phase application where basic pattern is one molded base accommodating up to six breakers or two breakers per circuit (See pages 8 and 9.)

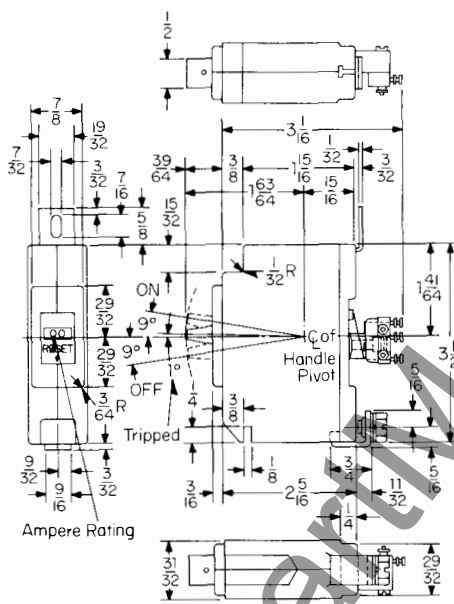


Outline Dimensions ALB-1 Breaker and Mounting Bases

Breaker Outline



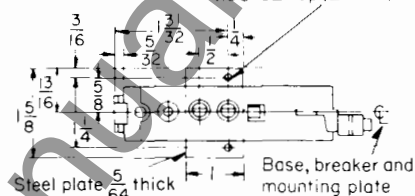
Standard Breaker



Special Breaker with Auxiliary Switch

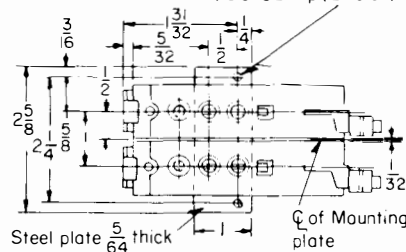
Single Base, Front Panel Supported (454D509G01)

2 Screws, steel, .190-32 X 3 furnished with lockwashers for securing to panel front cover
.190-32 Tap (2 holes)

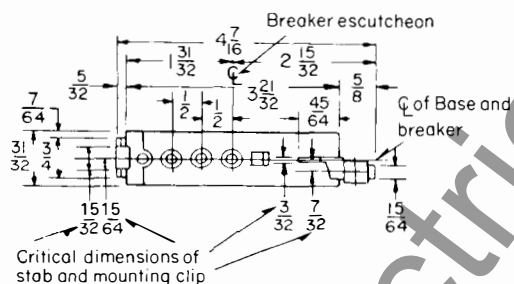


Two Breaker Base, Front Panel Supported (454D509G03)

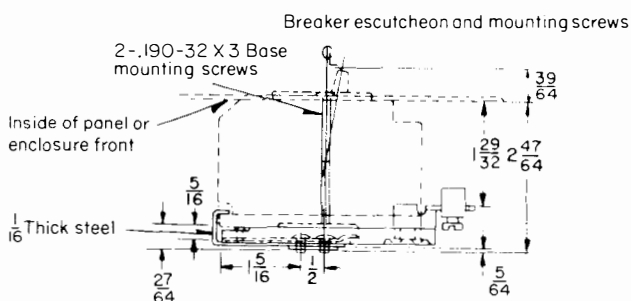
2 Screws, steel, .190-32 X 3 furnished with lockwashers for securing to panel front cover
.190-32 Tap (2 holes)



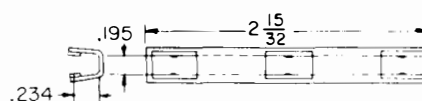
Single Base Surface Mounted (454D509G02)



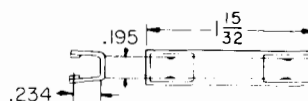
Mounting of Front Panel Supported Bases (Side View)



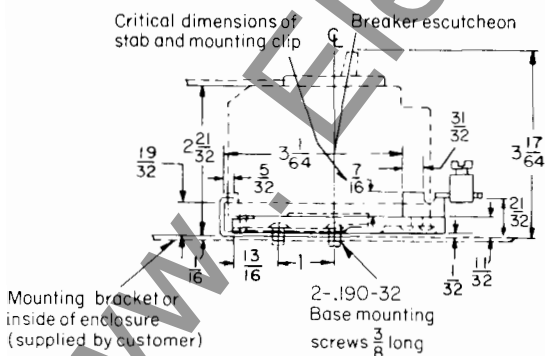
3 Pole Handle Yoke (207B508H02)



2 Pole Handle Yoke (207B508H01)



Mounting of Surface Mounted Base (Side View)



Westinghouse Electric Corporation
Distribution and Control Business Unit
Electrical Components Division
Pittsburgh, Pennsylvania, U.S.A. 15220

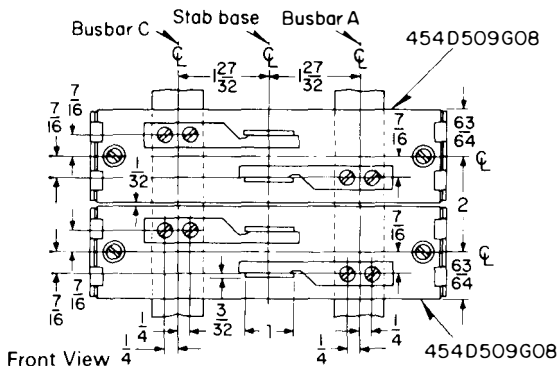


Dimensions, Continued ALB-1 Breaker and Mounting Bases

Application in Dc and 1 Phase Panels

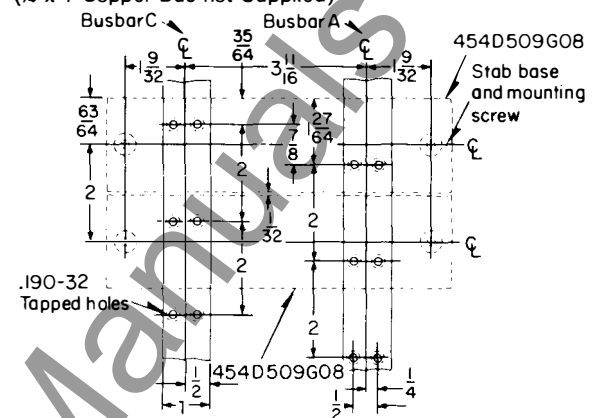
(2 Separate Bases shown. Basic Pattern is

1 Molded Base Accommodating 4 Single Pole Breakers)



Bus Bar Drilling for Dc and 1 Phase Panels

(1/4 x 1 Copper Bus not Supplied)

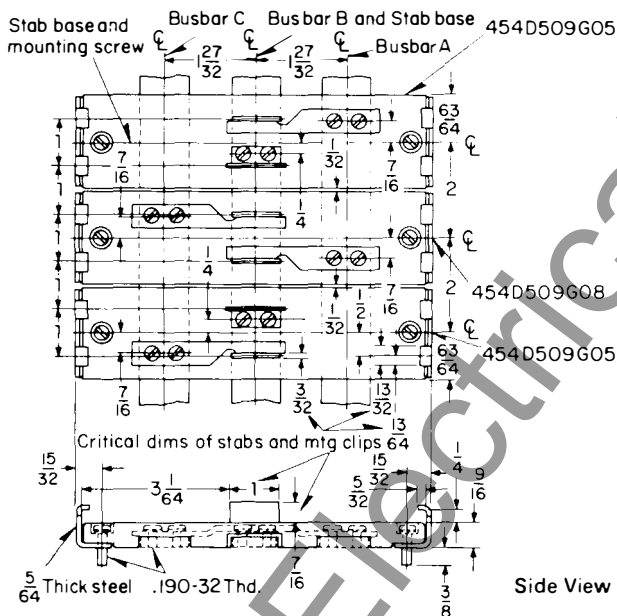


3 Phase Panel Application

For Two Breakers per Load Circuit

(Basic Pattern of Three Separate Molded

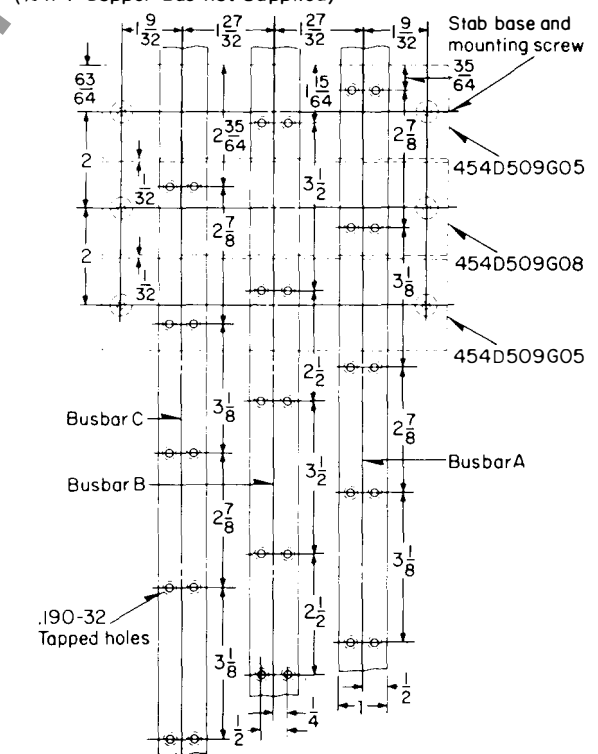
Bases can be Repeated for Longer Panel Boards)



Bus Bar Drilling for 3 Phase Panels

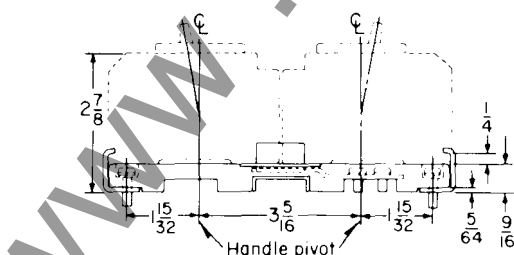
For Two Breakers per Load Circuit

(1/4 x 1 Copper Bus not Supplied)



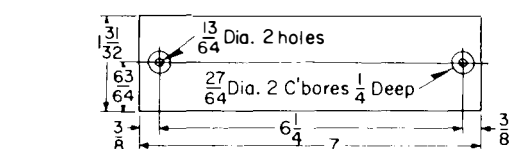
Outline Dimensions for Mounting Bases (Side View)

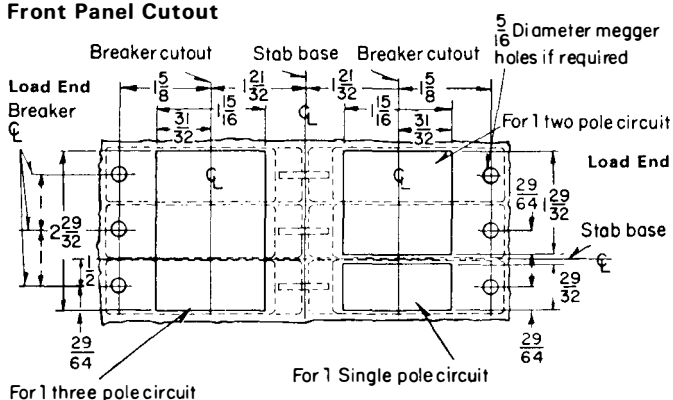
454D509G05 or 454D509G08



Outline Dimensions for Mounting Bases

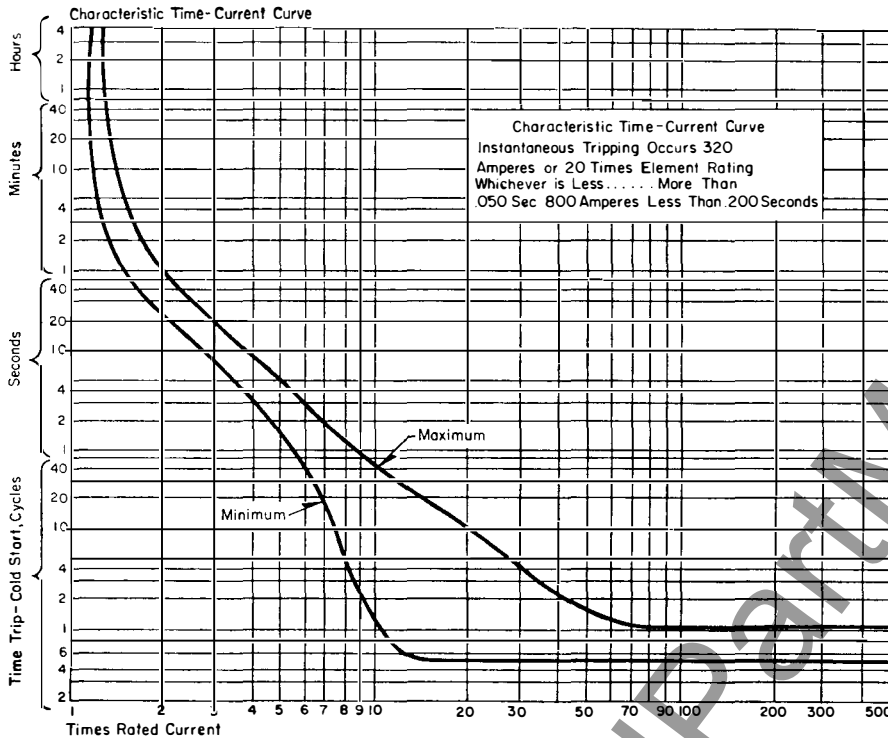
454D509G05 or 454D509G08







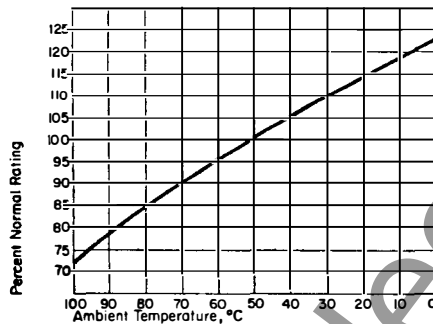
Characteristic Curves ALB-1 Breaker Characteristic Time-Current Curve



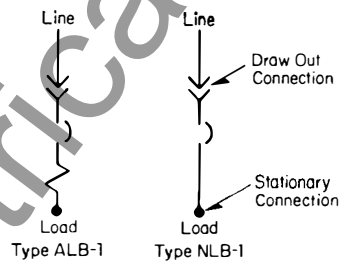
MIL-C-17588

This specification includes the ALB-1 type circuit breaker. It requires that this breaker carry 115% of current ratings for more than one hour and that the primary elements initiate tripping at 138% rated current within one hour and at 200% in 10 to 100 seconds. A tripping characteristic of the primary element is based on the current flowing through all poles in series and in an ambient of 50°C. The minimum instantaneous trip setting shall be 320 amperes or 20 times the element rating, whichever is less, and trip at not less than .050 second. At 800 amperes the breaker must trip at .200 second or less.

Characteristic Temperature- Rating Curve



Wiring Diagram



Westinghouse Electric Corporation
Distribution and Control Business Unit
Electrical Components Division
Pittsburgh, Pennsylvania, U.S.A. 15220



April 1991
New Information
Mailed to: E, C/29-200A

AQB-A50, NQB-A50, 500 V Ac, 250 V Dc
50 Amperes Maximum, 5000 Amperes Ac,
2500 Amperes Dc I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-A50 and NQB-A50 Breakers

Specification: MIL-C-17361

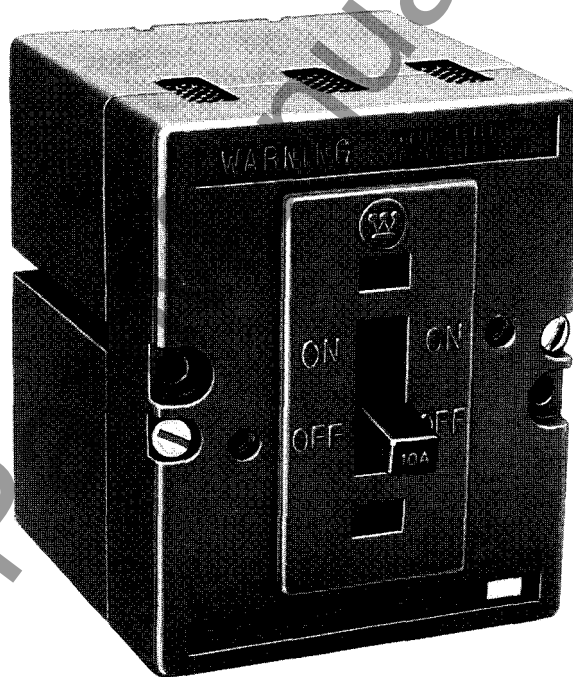
10-50 Amperes, 60 and 400 Cycle
500 Volts Ac and 250 Volts Dc
3 Pole

Interrupting Rating

5000 Amperes Ac and 2500 Amperes Dc
Non-Interchangeable trip unit
Class Hi-Shock MIL-S-901, 50°C ambient

The AQB-A50 is a factory calibrated non-adjustable thermal magnetic circuit breaker. The circuit breaker is assembled as a three pole device with circuit protecting trip elements in the two outside poles. The unit can be installed in 2 pole applications by connecting the 2 wire circuit to the outside protected poles.

The NQB-A50 breaker is a non-automatic design of the AQB-A50. Since the tripping elements are omitted, it is used as a manual disconnect. The NQB-A50 has a maximum continuous current rating of 50 amperes.



List Price See Price List 29-020

Type① ●	Trip Unit Rating	Style Number	National Stock Number
60 Cycle			
AQB-A50	10	1244C52G01	5925-00-783-6399
AQB-A50	15	1244C52G02	5925-00-797-9692
AQB-A50	20	1244C52G03	5925-00-799-5669
AQB-A50	25	1244C52G04	5925-00-797-9693
AQB-A50	30	1244C52G05	5925-00-391-0914
AQB-A50	35	1244C52G06	5925-00-797-9695
AQB-A50	40	1244C52G07	5925-00-783-6635
AQB-A50	50	1244C52G08	5925-00-797-9696
400 Cycles			
AQB-A50	10H	1244C52G09	5925-00-783-6398
AQB-A50	15H	1244C52G10	5925-00-799-8871
AQB-A50	20H	1244C52G11	5925-01-025-7001
AQB-A50	25H	1244C52G12	5925-00-797-9701
AQB-A50	30H	1244C52G13	5925-00-199-9518
AQB-A50	35H	1244C52G14	5925-00-817-6294
AQB-A50	40H	1244C52G15	5925-00-817-7860
AQB-A50	50H	1244C52G16	5925-00-817-7861
NQB-A50	Non-Automatic	1244C52G25	5925-00-948-3296

Refer to Westinghouse for Dc Part Numbers and Information.

● Complete breaker does not include mounting bases. Type required must be ordered separately. Mounting bases include cable lugs.

② Only 3 pole breakers furnished; for 2 pole application make connections to outside poles.



Panelboard Mounting and Accessories

Type	Style Number	National Stock Number
Single Base - Line and Load Stabs, Front Connected	1244C44G01	5925-00-270-4004
Single Base - Line and Load Stabs, Rear Connected	1244C44G02	5925-00-270-4005
Single Base - Line Rear, Load Front Connected	1244C44G03	5925-00-270-4006
Double Base Assembly - Line, Bus Connected; Load, Front Connected	1244C45G01	5925-01-246-0569
Handle Lock	5080A95H01	.....
Handle Boot	752B729H01	5925-01-091-9432
Technical Manual	1244C59H01	.....

Net Weight - Lbs.

AQB-A50 - 2.2

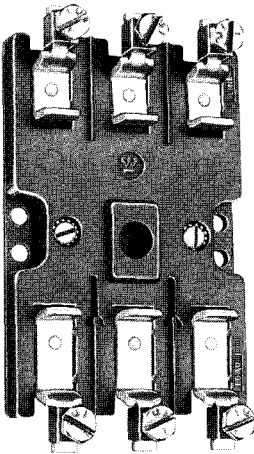
NQB-A50 - 1.9

Single Mounting Base - 0.7

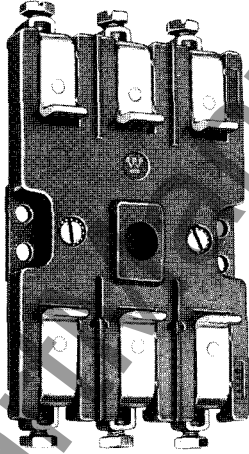
Double Mounting Base - 1.5

Handle Lock - .03

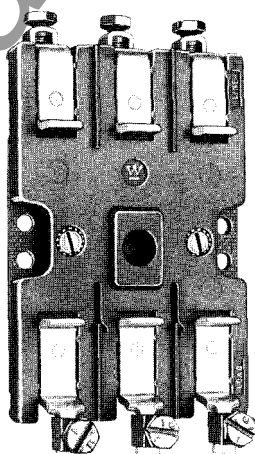
Ordering Information: See Page 4



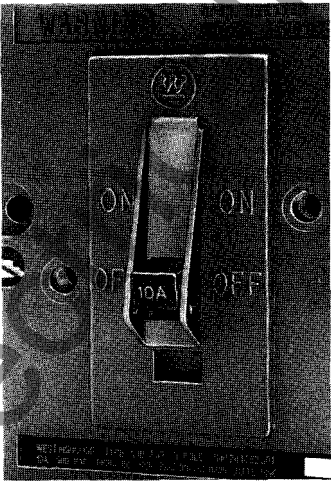
AQB-A50
Single Mounting
Base - Front Connected



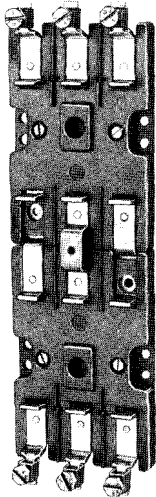
AQB-A50
Single Mounting
Base - Rear Connected



Single Base
Line Stabs
Rear Connected;
Load Stabs Front
Connected



**Handle
Lock**



**Double Mounting
Base - Front Connected**

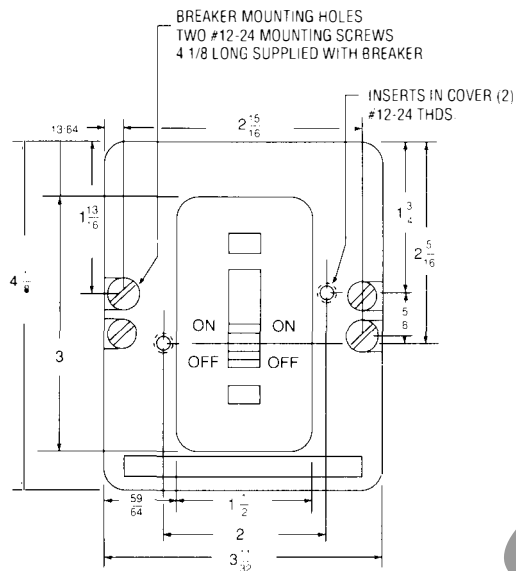


April 1991
New Information
Mailed to: E, C/29-200A

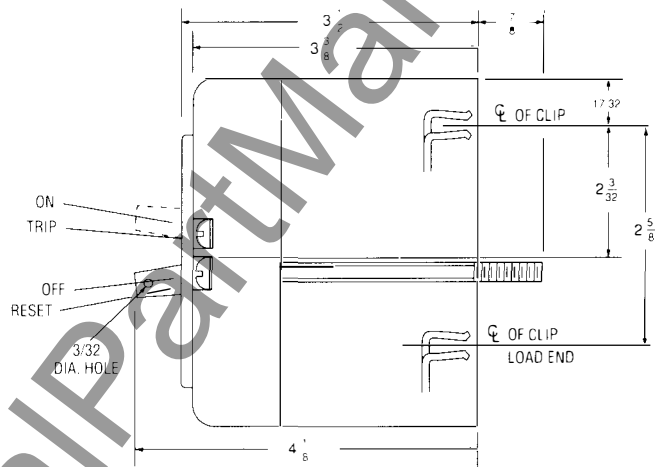
AQB-A50, NQB-A50, 500 V Ac, 250 V Dc
50 Amperes Maximum, 5000 Amperes Ac,
2500 Amperes Dc I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

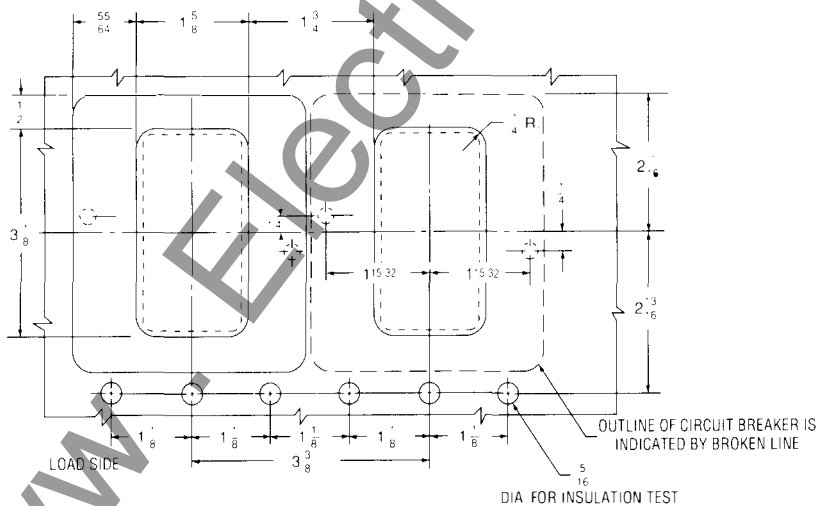
Outline Dimensions AQB-A50 and NQB-A50 Breakers (Dimensions in Inches)



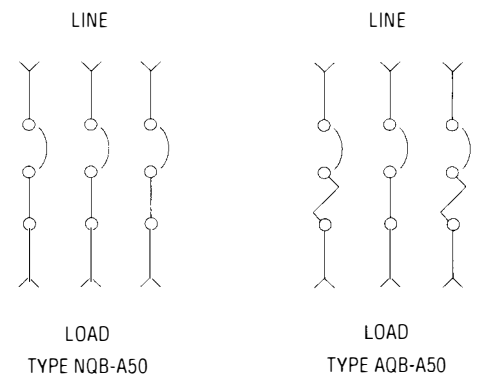
Front View



Side View



Front Panel Cutout



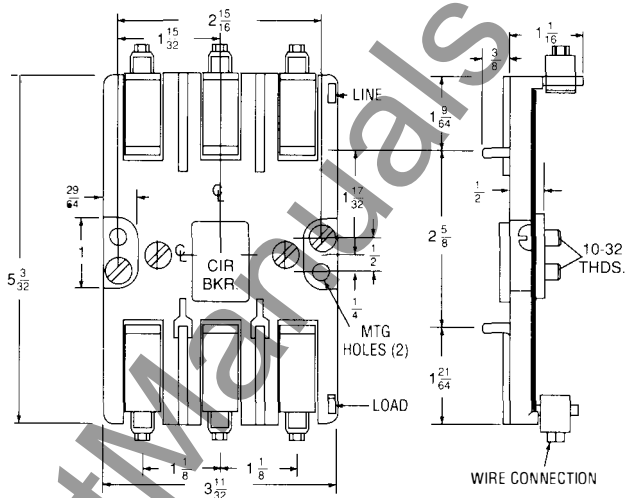
Wiring Diagram



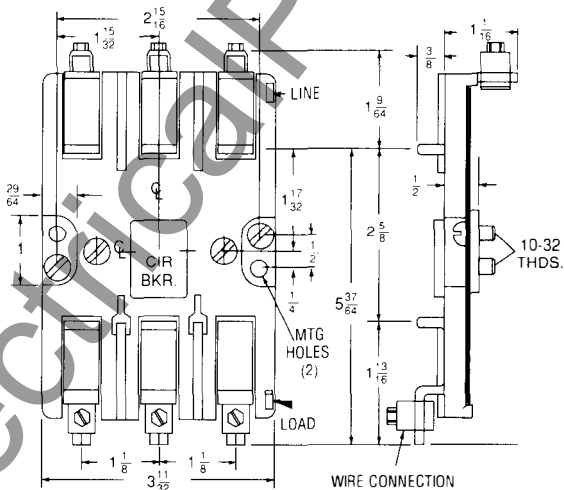
Technical drawing of a wire connection assembly. The drawing shows a side view of a component with various electrical terminals and mounting points. Key dimensions and labels include:

- Dimensions:**
 - Overall width: $2\frac{15}{16}$
 - Terminal spacing: $1\frac{15}{32}$, $1\frac{1}{8}$, $3\frac{11}{32}$
 - Mounting hole diameter: $\frac{1}{4}$
 - Terminal diameter: $\frac{1}{16}$, $\frac{1}{8}$
 - Wire connection dimensions: $7\frac{1}{16}$, $1\frac{1}{2}$, $2\frac{5}{8}$, $1\frac{13}{16}$, $31\frac{6}{64}$
 - Wire connection terminal diameter: $\frac{3}{8}$
 - Wire connection terminal spacing: $5\frac{7}{8}$
- Labels:**
 - CIR BKR.
 - MTG HOLES (2)
 - LOAD
 - WIRE CONNECTION
 - 10-32 THDS.

Line and Load Stabs Front Connected



Line and Load Stabs Back Connected



Line Stabs Back Connected, Load Stabs Front Connected

Westinghouse Electric Corporation
Distribution and Control Business Unit
Electrical Components Division
Pittsburgh, Pennsylvania, U.S.A. 15220

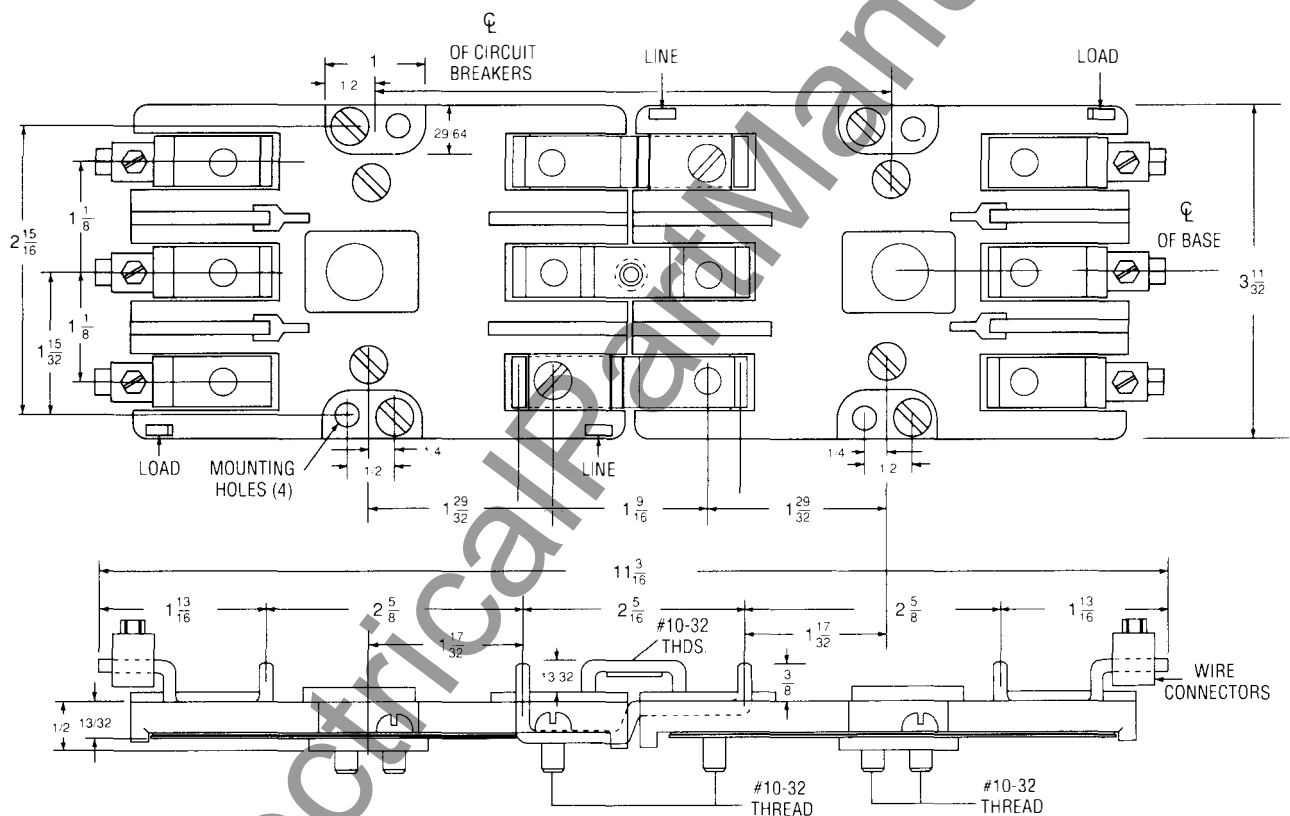
Printed in U.S.A.

April 1991
New Information
Mailed to: E, C/29-200A

AQB-A50, NQB-A50, 500 V Ac, 250 V Dc
50 Amperes Maximum, 5000 Amperes Ac,
2500 Amperes Dc I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

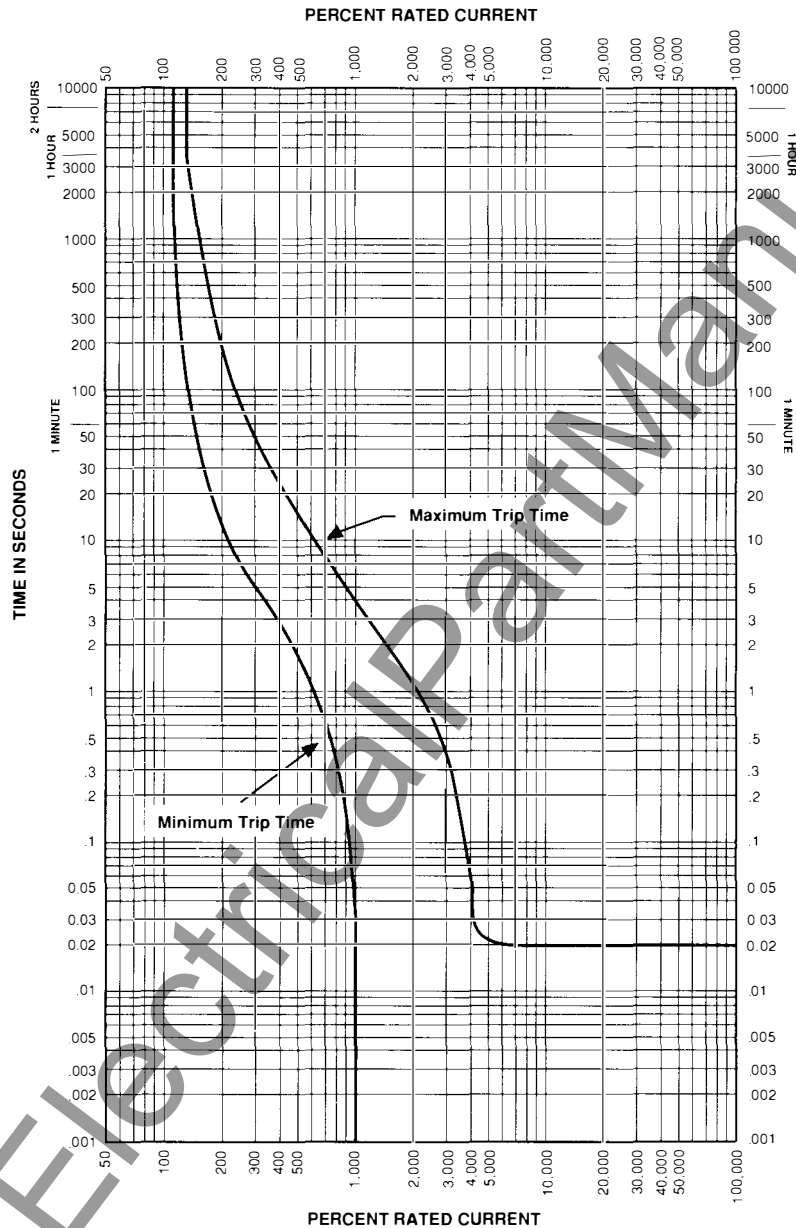
Double Base Assembly (Panelboard) (Dimensions in Inches)



Line Bus Connected, Load Front Connected



Navy Type AQB-A50
Circuit Breaker



Time-Current Curves for AQB-A50 Circuit Breaker (60 Hz, 400 Hz and dc-10, 15, 20, 25, 30, 35, 40 and 50 Ampere Ratings)

Westinghouse Electric Corporation
Distribution and Control Business Unit
Electrical Components Division
Pittsburgh, Pennsylvania, U.S.A. 15220



April 1991
Supersedes Technical Data 29-220,
pages 11-12, dated October 1978
Mailed to: E, C/29-200A

Types AQB-A100, NQB-A100, 250 Volts Dc,
500 Volts Ac, 100 Amperes Maximum,
15,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-A100 and NQB-A100 Breakers

Note: AQB-A100 and NQB-100 breakers are
sold for replacement only. They are no
longer on Navy Qualified Product List.

Specification: MIL-C-17361
15-100 Amperes
500 Volts Ac and 250 Volts Dc
Two or Three-Pole

Interrupting Rating
15,000 Amps Ac and 10,000 Amps Dc

AQB-A100 circuit breakers are designed for
use in lighting and distribution panelboards
and switchboards for the protection of feed-
er and motor branch circuits.

Trip units with current ratings of 15, 25, 50,
75 and 100 can be quickly interchanged
and a conversion kit is available to change
a 3-pole, 500 volt AQB-A100 to a non-
automatic NQB-A100 circuit interrupter.
NQB-A100 breakers have a maximum con-
tinuous current rating of 100 amperes, but
they are used only as disconnects since
there is no automatic opening device.

Those breakers (and interrupters) designed
for Dc motor circuits and for Ac feeder cir-
cuits (designated with a "BF" in amp rating
column of price table) have fixed instanta-
neous settings of 600%-700% continuous
current ratings. Those having a magnetic
element set to trip at 1200%-1400% are
applied on Ac motor circuits (designated
with a "B"). Breakers designated with "BE"
are calibrated for Dc application.



AQB-A100

List Prices See Price List 29-020

Cont. Ampere Rating	Instantaneous Trip Setting in Amperes		Complete Breaker ①		Breaker Frame Only ①		Trip Unit Only	
	Low	High	Style Number	National Stock No.	Style Number	National Stock No.	Style Number	National Stock No.
Two-Pole, 250 Volts Dc								
15-BE	90	105	1764 676		1764 638		1764 640	
25-BE	150	175	1764 677	5925-01-221-1765	1764 638		1764 641	5925-00-248-1104
50-BE	300	350	1764 678		1764 638		1764 642	
75-BE	450	525	1764 679		1764 638		1764 643	5925-00-248-1108
100-BE	600	700	1764 680		1764 638		1764 644	
Two-Pole, 500 Volts Ac								
15-BF	90	105	1764 681		1764 638		1764 645	
15-B	180	210	1764 682	5925-00-396-2283	1764 638		1764 646	5925-00-629-0975
25-BF	150	175	1764 683		1764 638		1764 647	
25-B	300	350	1764 684		1764 638		1764 648	5925-00-628-0695
50-B	600	700	1764 685		1764 638		1764 649	5925-00-248-1078
75-B	900	1050	1764 686		1764 638		1764 650	5925-00-248-1082
100-B	1200	1400	1764 687		1764 638		1764 651	
100②	Non-Automatic		1764 688		1764 638		1764 652	5925-00-772-0646
Three-Pole, 250 Volts Dc								
15-BE	90	105	1764 689		1764 639	5925-00-258-2945	1764 653	5925-00-608-0972
25-BE	150	175	1764 690	5925-00-399-8120	1764 639	5925-00-258-2945	1764 654	5925-00-553-9745
50-BE	300	350	1764 691		1764 639	5925-00-258-2945	1764 655	5925-00-383-3814
75-BE	450	525	1764 692		1764 639	5925-00-258-2945	1764 656	5925-00-248-1371
100-BE	600	700	1764 693	5925-00-399-8127	1764 639	5925-00-258-2945	1764 657	5925-00-608-0973
Three-Pole, 500 Volts Ac								
15-BF	90	105	1764 694	5925-00-113-5066	1764 639	5925-00-258-2945	1764 658	5925-00-502-6719
15-B	180	210	1764 695		1764 639	5925-00-258-2945	1764 659	5925-00-248-1453
25-BF	150	175	1764 696	5925-00-658-9609	1764 639	5925-00-258-2945	1764 660	5925-00-215-3758
25-B	300	350	1764 697	5925-00-265-9474	1764 639	5925-00-258-2945	1764 661	5925-00-248-1449
50-BF	300	350	1764 698	5925-00-988-5474	1764 639	5925-00-258-2945	1764 662	5925-00-248-1442
50-B	600	700	1764 699	5925-00-396-2339	1764 639	5925-00-258-2945	1764 663	5925-00-248-1443
75-BF	450	525	1764 700		1764 639	5925-00-258-2945	1764 664	5925-00-248-1436
75-B	900	1050	1764 701	5925-00-396-2345	1764 639	5925-00-258-2945	1764 665	5925-00-248-1437
100-BF	600	700	1764 702		1764 639	5925-00-258-2945	1764 666	5925-00-248-1429
100-B	1200	1400	1764 703	5925-00-450-6275	1764 639	5925-00-258-2945	1764 667	5925-00-588-2453
100②	Non-Automatic		1764 704	5930-00-259-9440	1764 639	5925-00-258-2945	1764 668	5925-00-699-1111

Note: Breakers with ratings other than those given on this page are considered special and full description data must be provided.

① Styles listed include slip-type connectors for rear connections. Order front terminal connectors separately if required. No additional charges for front connectors ordered with breakers or frames.

② Type NQB-A100 non-automatic. To convert 3-pole AQB breaker to NQB breaker, order style 1764 668 only.

AQB-A100 and NQB-A100 Breakers, Continued

Front Connected Breakers

For the load ends of panelboard breakers and for other front terminal applications, pressure connectors should be ordered.

Prices given below apply only when connectors are ordered separately. When breakers and the required lugs are ordered simultaneously, these lugs will be supplied without charge.

Cable Range	Navy Cable Size, Max. ①	Description	Style Number	National Stock No.
N3-N14	14,340	One Pressure Connector	1763 660	.....
N23-N40	38,910	One Pressure Connector	1763 661	.....
N50-N75	75,780	One Pressure Connector	1763 662	.....

① Circular mils area.

Switchboard Mounting

Complete breakers and frames include mounting hardware. Female slip connectors are mounted in the breaker base for plugging onto stud projections of terminal mounting block assemblies. Order one mounting block assembly for each end of the breaker.

Number Poles	Description	Style Number	National Stock No.
2	Mounting Block Assembly	1764 675	.....
3	Mounting Block Assembly	1764 674	.....
2 or 3	Mounting Block Only	1764 240	5940-00-643-7194
.....	One Stud Assembly - Complete with 4 Nuts	1631 442	5940-00-501-9120

Net Weight, Lbs.

Terminal Mounting Supports (Set of Two)

		Frame
2-Pole Mounting Block Assembly	2.75	2-Pole AQB - 7.375
3-Pole Mounting Block Assembly	3.25	2-Pole NQB - 7.375
		3-Pole AQB - 7.875
		3-Pole NQB - 7.875

		Trip Unit
Complete Breaker		
2-Pole AQB	10.00	2-Pole AQB - 2.625
2-Pole NQB	8.75	2-Pole NQB - 1.375
3-Pole AQB	10.75	3-Pole AQB - 2.875
3-Pole NQB	9.50	3-Pole NQB - 1.625

Additions

Handle Lock: When specified, order style 1614 485. One furnished without charge per every 10 breakers, when requested.

Fungus-Moisture Resistant Treatments: (Jan-T-152, Jan-C-173 or MIL-V-173) if specified, contact Westinghouse. External parts are coated; trip units are not treated.

Technical Manual Navships 362-0819-per MIL-M-15071: When required, specify IB-29-062-CIA.

Individual Reproductions: When required, reproductions of master drawings, outline drawings and certification sheets can be ordered as follows:

Item	Description
1	Full size photolith tracing of master drawing on vellum
2	Outline and drilling plan on vellum
3	Certification data on vellum
4	Reproductions of Items 1, 2, or 3

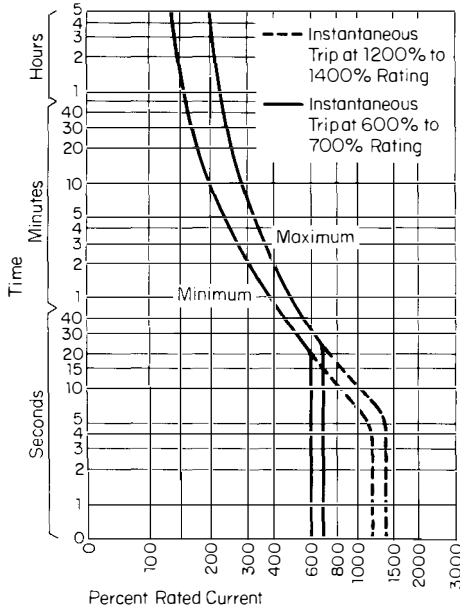
Drawings Available: Master drawing 1-JF-630; rear connected breaker outline, drilling and wiring diagram 20-B-2881; front connected breaker outline, drilling and wiring diagram 30-B-3837.

400 Cycle Breakers: Refer to Westinghouse.

Westinghouse Electric Corporation
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Electrical Components Division
Pittsburgh, Pennsylvania, U.S.A. 15220



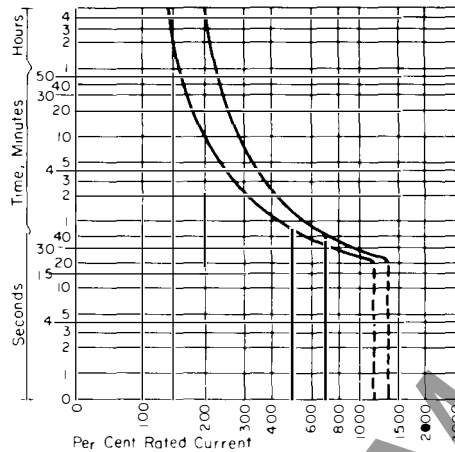
Characteristic Curve AQB-A100 Breakers



Operating Characteristics

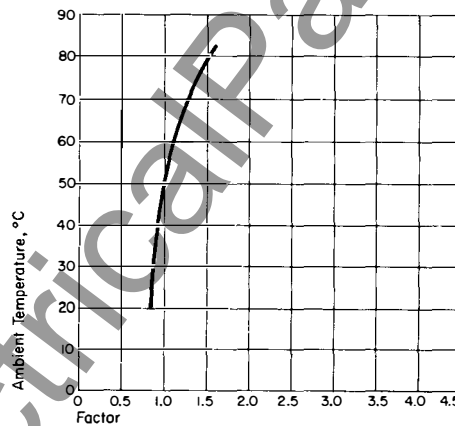
Trip Unit Rating 15-100 Amperes
50°C Ambient - Cold Start, 60 Cycle, Ac or Dc

400 Cycle Breakers



Operating Characteristics
Trip Unit Rating 15-100 Amperes
50°C Ambient - Cold Start
400 Cycle Ac

Trip Unit Rating



To determine the trip unit rating to be used, when the load current and ambient are known, multiply the load current by the factor obtained from this curve for the known ambient. The result will be the ideal trip unit rating. However, since trip units are furnished only with standard ratings as per Navy spec., select the standard trip unit whose rating is equal to or one rating higher than the ideal rating.

Specification MIL-C-17361

This specification covers all thermal-magnetic AQB breakers. It requires that they carry 150% of current ratings for at least one hour and that thermal elements initiate tripping at 225% rated current within one hour and at 600% in 25 seconds plus or minus 25%. The instantaneous magnetic settings for each continuous ratings are based on intended applications. (Thermal tripping tests are conducted with all poles in series in 50°C ambient; each pole is tested individually to check magnetic settings.)



April 1991

Supersedes Technical Data 29-220,
pages 15-16, dated October 1978

Mailed to: E, C/29-200A

Types AQB-A101, NQB-A101,
250 Volts Dc, 500 Volts Ac
100 Amperes Maximum, 15,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-A101 and NQB-A101 Breakers Specification: MIL-C-17361 15-100 Amperes 500 Volts Ac and 250 Volts Dc 3-Pole

Interrupting Rating

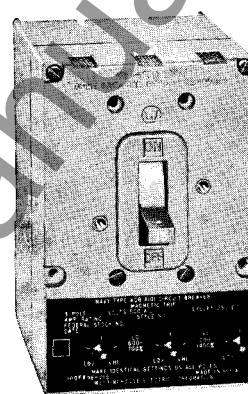
15,000 Amps Ac and 10,000 Amps Dc
Non-Interchangeable Trip Unit
Class: Hi Shock MIL-S-901: 50°C Ambient

AQB-A101 circuit breakers are designed for
use in lighting and distribution panelboards
and for switchboards in the protection of
feeder and motor branch circuits.

These breakers have adjustable instantan-
eous trip settings of "lo", "intermediate",

and "hi". The "lo" setting is 500%-700% of
continuous current rating. It is designed for
Dc motor circuits and Ac feeder circuits. The
"hi" setting is 1200%-1400% of continuous
current rating and is designed for applica-
tion on Ac motor circuits. The intermediate
setting may be used to increase lo setting
trip amperes or decrease hi setting trip am-
peres as may be required.

NQB-A101 circuit breakers have a maxi-
mum continuous current rating of 100 am-
peres. They are used only as disconnects,
since they do not include an automatic
opening device.



AQB-A101

List Prices See Price List 29-020

Type ① ② ③	Trip Unit Rating	Instantaneous Trip Setting④ Ac 60 Cycle		Thermal Magnetic Style	National Stock Number	Magnetic Only Style	National Stock Number
		Hi	Lo				
AQB-A101	15 Amp	180- 210	75-105	458D509G11	5925-00-876-9216	458D511G11	5925-00-397-8258
AQB-A101	25 Amp	300- 350	125-175	458D509G12	5925-00-876-9217	458D511G12	.....
AQB-A101	50 Amp	600- 700	250-350	458D509G13	5925-00-876-9218	458D511G13	5925-00-546-3258
AQB-A101	75 Amp	900-1050	375-525	458D509G14	5925-00-876-9219	458D511G14	.....
AQB-A101	100 Amp	1200-1400	500-700	458D509G15	5925-00-876-9220	458D511G15	5925-01-022-5086
AQB-A101●	100G Amp	1200-1400	500-700	458D509G16	5925-00-619-0412	.....	.....
NQB-A101	100 Amp	Non-Automatic	.....	458D509G20	5930-00-969-2477	.....	.....
400 Cycle							
AQB-A101	15H Amp	.....	.....	458D510G11	5925-00-867-7328	458D512G11	.....
AQB-A101	25H Amp	.....	.....	458D510G12	5925-00-867-7329	458D512G12	.....
AQB-A101	50H Amp	.....	.....	458D510G13	5925-00-986-7313	458D512G13	.....
AQB-A101	75H Amp	.....	.....	458D510G14	5925-00-986-7314	458D512G14	.....
AQB-A101	100H Amp	.....	.....	458D510G15	5925-00-972-3000	458D512G15	.....
AQB-A101	100GH Amp	.....	.....	458D510G16	.....	.....	.....

① Complete breaker does not include mounting bases. Type required must be ordered separately.

② Front connected bases include cable lugs. Cover cable sizes 2828CM to 100,000CM.

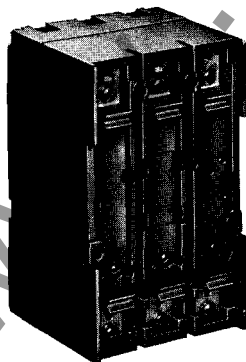
③ Only 3-pole breakers are furnished, for 2-pole applications make connections to outside poles.

● Instantaneous trip setting at 1200-1400% Hi or 500-700% Lo. Set at Lo position at factory.

⑤ Manufactured to meet MIL-C 17361 D or prior revisions only.

Panelboard Mounting

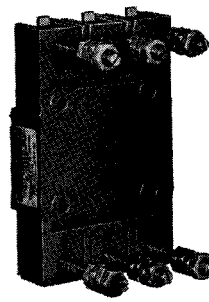
Type	Style Number	Weight	National Stock No.
Single Base Front Connected	315C364G03	2.75 Lbs.	.....
Single Base Rear Connected	315C364G02	3.00 Lbs.	5925-00-521-2526
Single Base, Rear Connected, Line Front Connected, Load	.....	.....	.....
For use with rear connected fuse base	315C364G04	3.00 Lbs.	5925-01-124-0156
Double Base Front Connected	458D569G02	3.50 Lbs.	5925-00-728-5217
Double Base Rear Connected	458D569G03	4.00 Lbs.	.....



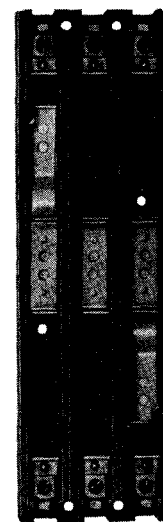
AQB-A101
Breaker with
Single Front
Connected Base



AQB-A101
Single Mount-
ing Base - Rear
Connected



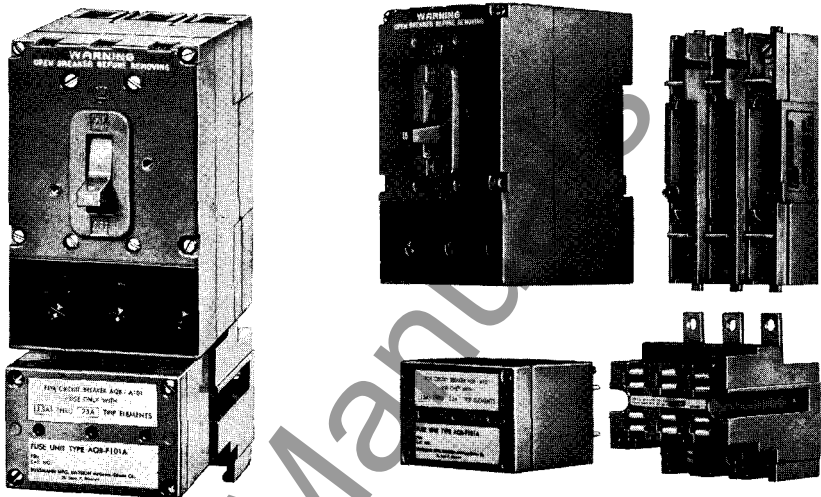
AQB-A101
Double Mount-
ing Base -
Front Connect-
ed





Fuse Unit Assemblies

AQB-F101A and AQB-F101B fuse units are designed for use in conjunction with standard AQB-A101 circuit breakers on circuits where a fault potential of up to 100,000 amperes exists.



Complete Fuse Unit Assembly

Style Number	Rating	Con- nection
372B155G01	15-25 Amps	Front
372B155G02	15-25 Amps	Rear
372B155G03	50, 75, & 100 Amps	Front
372B155G04	50, 75, & 100 Amps	Rear

Shipped As:

Fuse Unit ^①		Fuse Unit Mounting Base
Type	Style Number	Style Number
AQB-F101A	504C010H01	655D258G01 ^②
AQB-F101A	504C010H01	655D258G05 ^②
AQB-F101B	504C010H02	655D258G03
AQB-F101B	504C010H02	655D258G06

^① Individual fuses are not replaceable; replace with complete unit.
^② To convert for use with high rating fuse unit (AQB-F101B) in field, remove rejection pin per instructions on fuse unit mounting base nameplate.

Westinghouse Electric Corporation
Distribution and Control Business Unit
Electrical Components Division
Pittsburgh, Pennsylvania, U.S.A. 15220



April 1991
Supersedes Technical Data 29-220,
pages 17-18, dated October 1978
Mailed to: E, C/29-200A

Types AQB-A101, NQB-A101,
250 Volts Dc, 500 Volts Ac,
100 Amperes Maximum, 15,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

Additions

Shunt Trip: Breakers can be equipped with a shunt trip attachment for tripping the breaker from a remote point, and can be supplied with coils for 120 volts, 60 cycle or for 120 volts Dc. These shunt trips have momentary rated coils and are supplied with an auxiliary switch to be wired in series for protection (Auxiliary switch included with the shunt trip. Do not order separately). For 400 Hz shunt trip contact Westinghouse.

To order, specify style number of standard breaker required plus style number of shunt trip attachment from table below. (Must be factory installed.)

Shunt Trip Style Number	Breaker Type	Shunt Trip – Volt- age and Fre- quency
4976D65G06	Thermal Magnetic	120/60
4976D65G02	Thermal Magnetic	120/Dc
4976D65G08	Magnetic Only	120/60
4976D65G04	Magnetic Only	120/Dc

Auxiliary Switch: Breakers can be supplied with internally mounted auxiliary switch to open or close control circuits as breaker operates. Each switch provides one "A" contact and one "B" contact. "A" contact is closed when breaker is closed, open when breaker is open. "B" contact is open when breaker is closed and closed when breaker is open. When ordered with one switch it is normally mounted in right pole, may be specified mounted in left pole. A maximum of 2 switches can be supplied: one in left and one in right pole. Order by description.

Note: One auxiliary switch normally supplied with shunt trip attachments for cut-off switch and additional switches cannot be supplied on breakers with shunt trips.

Handle Lock: When specified, order style 1614485.

Handle Boot: When specified, order style number 752B729H01.

Rear Stud: Complete with 4 nuts, style number 208B801G01.

Fungus-Moisture Resistant Treatment: (JAN-T-152, JAN-C-173 or MIL-V-173). If specified, contact Westinghouse. External parts are coated.

Technical Manual: Navships No. 362-2314. This booklet per MIL-M-15071. When required, order BVR-TM-475C.

Drawings Available

900J429 – Master drawing for breaker and mounting bases.
900J439 – Master drawing for breaker with fuse unit and mounting bases.
459D448 – Outline and wiring diagram for breaker on single base.
654D255 – Outline and wiring diagram for breaker with fuse unit on single base.
459D449 – Outline and wiring diagram for breaker on double base.
654D256 – Outline and wiring diagram for breaker with fuse unit on double base.
657D205 – For fuse unit mounting base only.

Individual Reproductions: When required, reproduction of master drawings, outline drawings and certification sheets can be ordered as follows:

Item	Description
1	Full size photolith tracing of master drawing on vellum
2	Outline and drilling plan on vellum
3	Certification data on vellum
4	Reproductions of items 1, 2, or 3

Net Weights, Lbs.

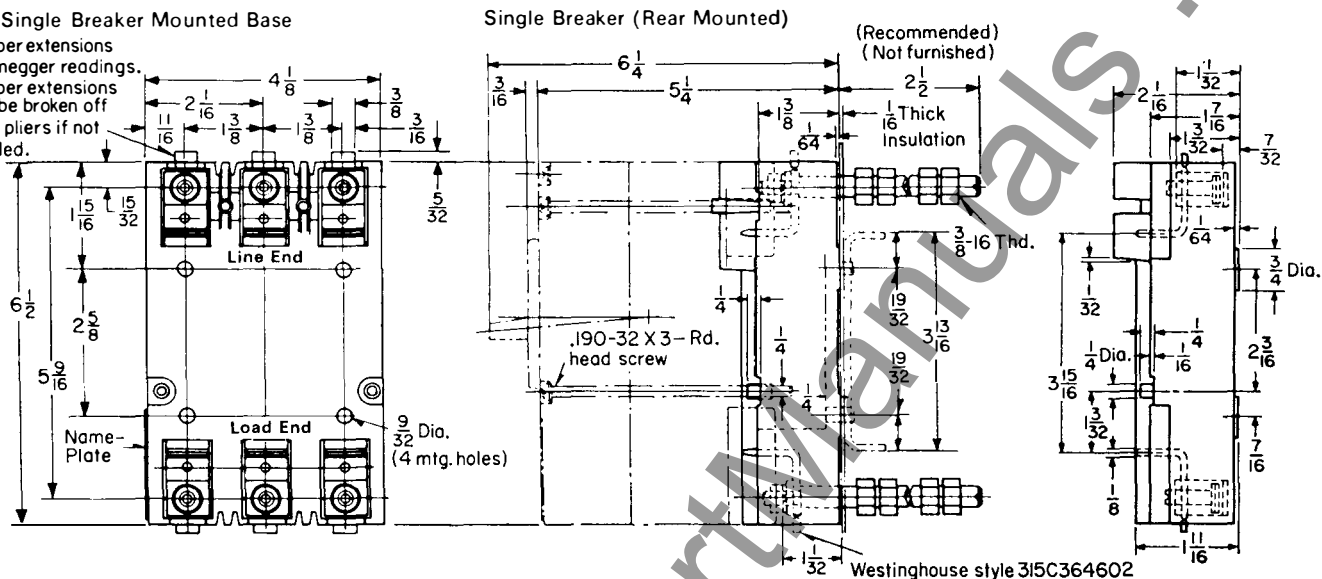
AQB-A101 – 6.00
NQB-A101 – 5.75
AQB-F101A – 2.00
AQB-F101B – 2.00
Fuse Unit Mounting Base – 3.00

Ordering Information: See page 4.



For Single Breaker Mounted Base

Copper extensions for megger readings. Copper extensions can be broken off with pliers if not needed.

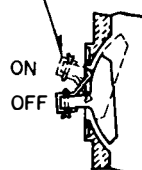


Technical drawing of a breaker outline. The drawing shows a rectangular shape with various dimensions and features. The dimensions are as follows:

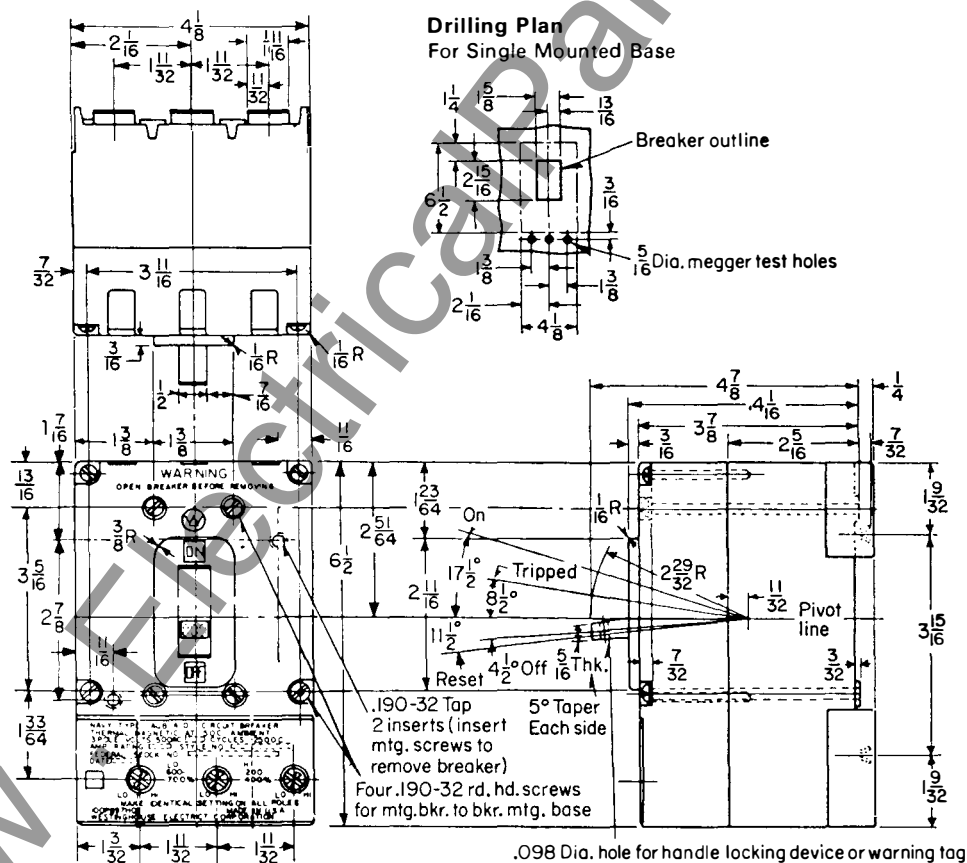
- Top left corner: $1\frac{1}{4}$ (vertical) and $\frac{5}{8}$ (horizontal).
- Top right corner: $\frac{13}{16}$ (horizontal).
- Left side: $6\frac{1}{2}$ (vertical).
- Inside left side: $2\frac{5}{16}$ (vertical).
- Right side: $\frac{3}{16}$ (vertical).
- Bottom left corner: $1\frac{3}{8}$ (vertical) and $2\frac{1}{16}$ (horizontal).
- Bottom right corner: $4\frac{1}{8}$ (horizontal) and $\frac{3}{8}$ (vertical).
- Bottom center: $\frac{5}{16}$ Dia. megger test holes.

The drawing is labeled "Breaker outline" and "5/16 Dia. megger test holes".

Reverse position of lock to prevent breaker from opening



Westinghouse style 1614485
(Not supplied with circuit bkr.)



**Westinghouse Electric Corporation
Distribution and Control Business Unit
Electrical Components Division
Pittsburgh, Pennsylvania, U.S.A. 15220**

April 1991
Supersedes Technical Data 29-220,
pages 19-20, dated October 1978
Mailed to: E, C/29-200A

Types AQB-A101, NQB-A101,
250 Volts Dc, 500 Volts Ac
100 Amperes Maximum, 15,000 Amperes I.C.

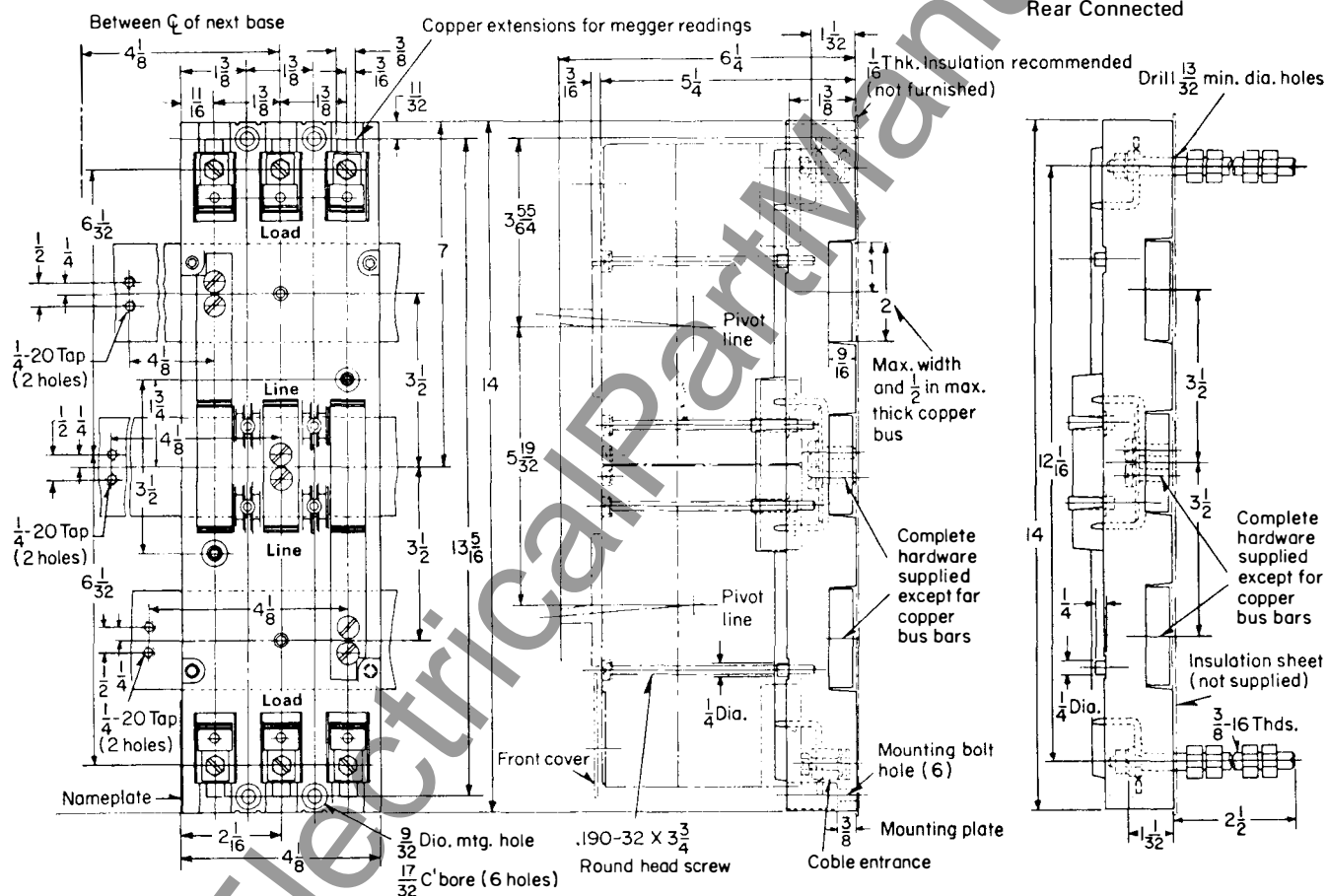
AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-A101 Breaker Mounting Bases

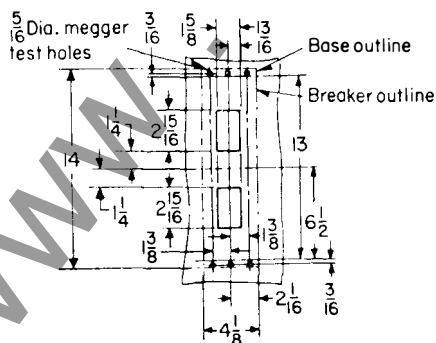
For Two Breaker Mounting Base

For Double Mounting Base Front Connected

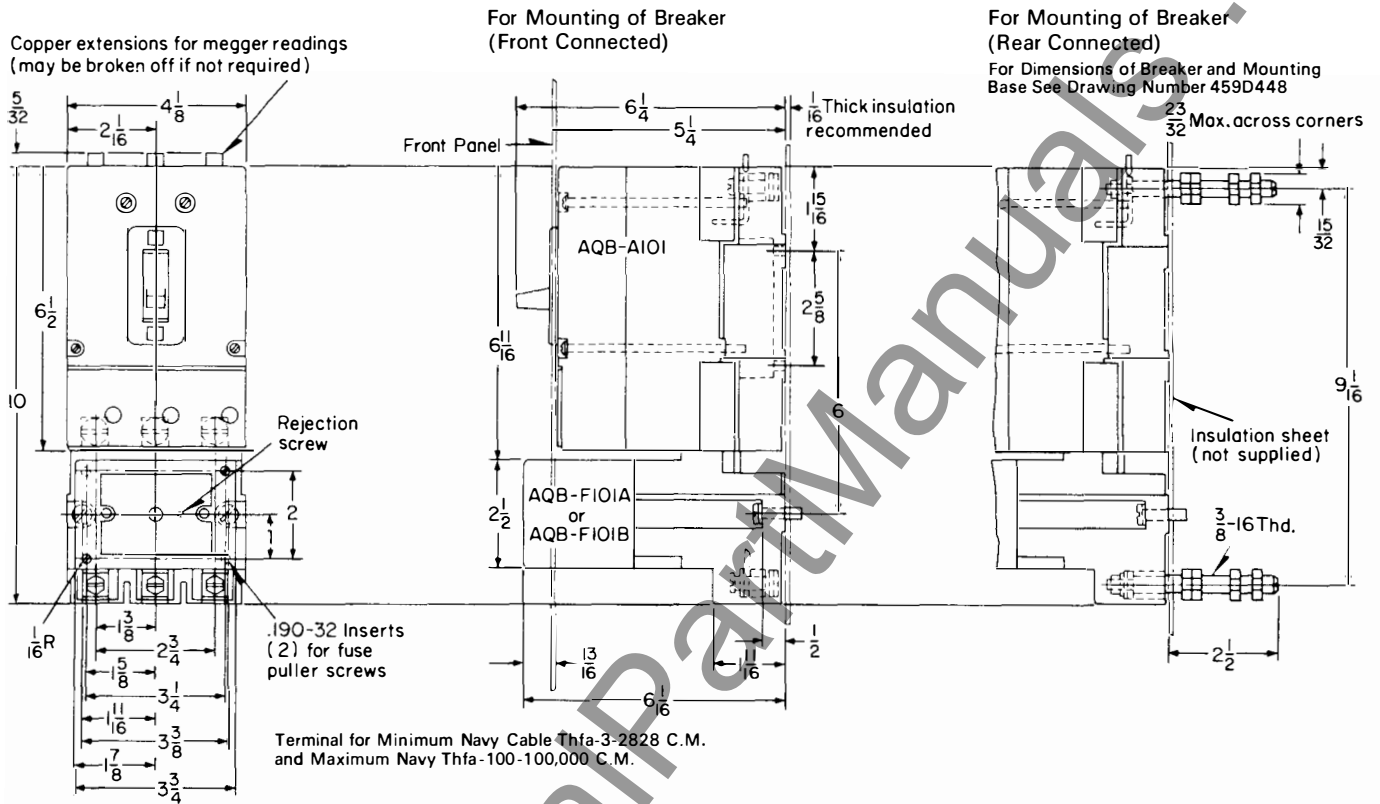
For Double Mounting Base
Rear Connected



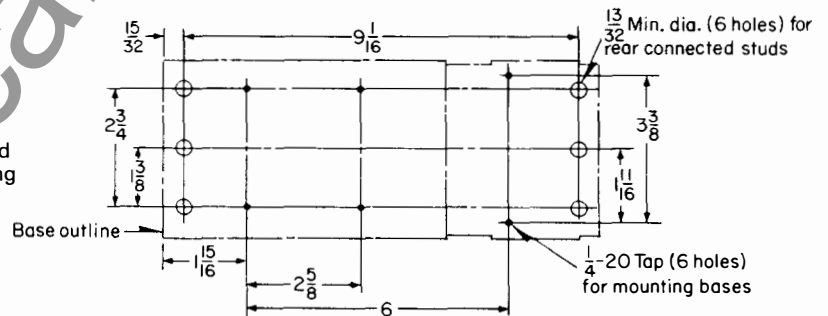
Front Cover Cutouts For Double Mounting Base



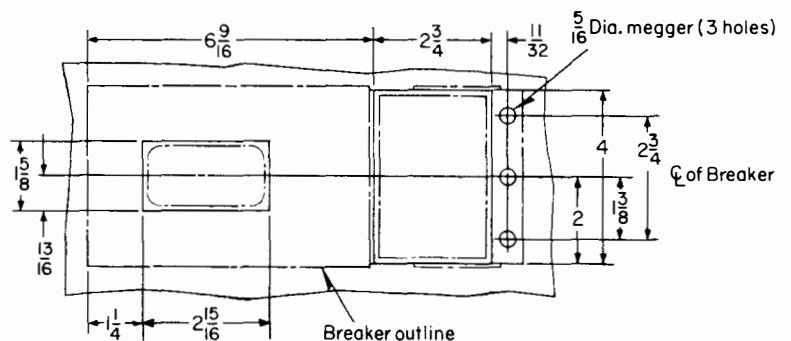
Outline Dimensions, Continued AQB-A101 Breakers, Single Base with Fuse Unit

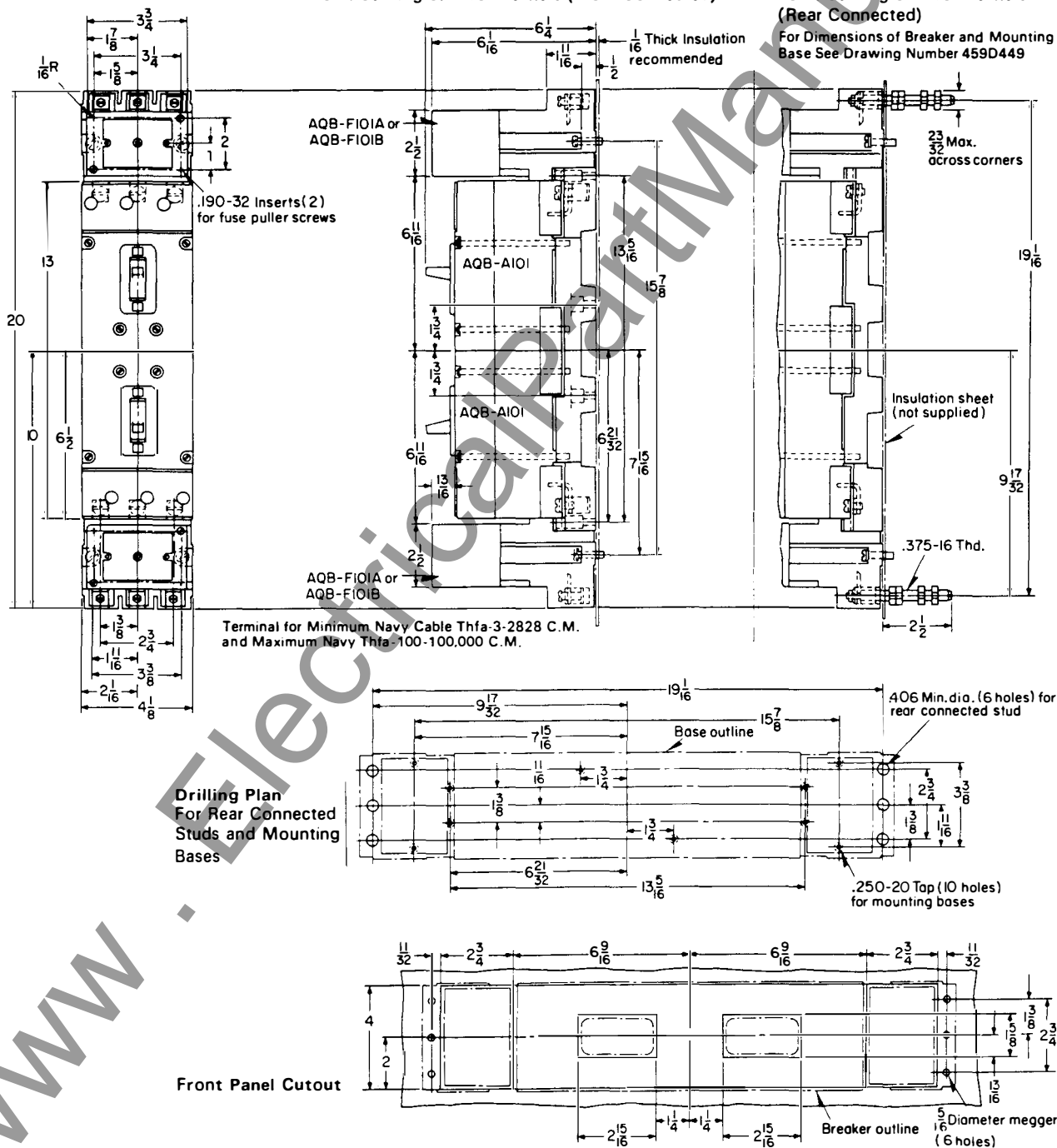


Drilling Plan
For Rear Connected
Studs and Mounting
Bases



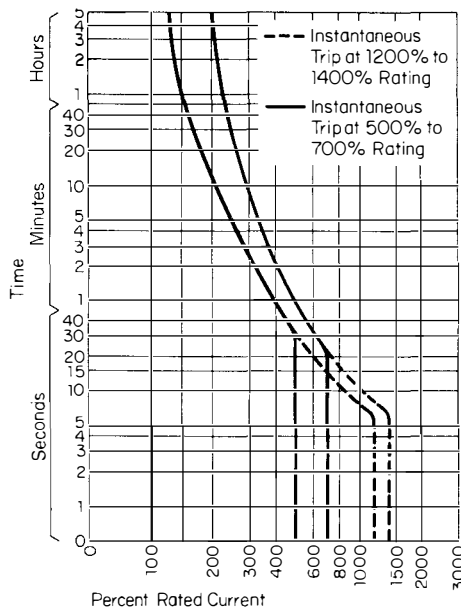
Front Panel Cutout







Characteristic Curves AQB-A101 Breakers



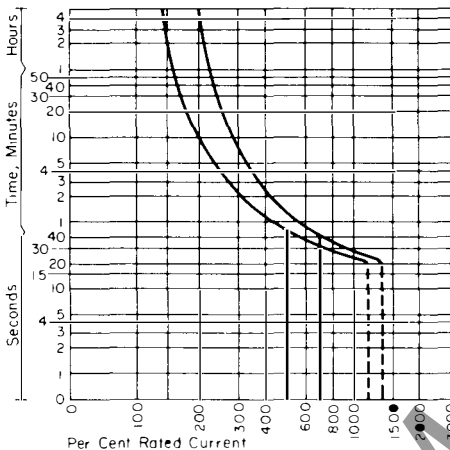
Operating Characteristics

Trip Unit Rating 15-100 Amperes
50°C Ambient - Cold Start, 60 Cycle,
Ac or Dc, Thermal Magnetic

Specification MIL-C-17361

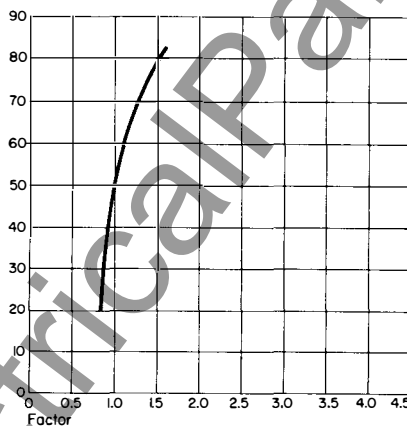
This specification covers all thermal magnetic AQB breakers. It requires that they carry 150% of current ratings for at least one hour and that thermal elements initiate tripping at 225% rated current within one hour and at 600% in 25 seconds plus or minus 25%. The instantaneous magnetic settings for each continuous ratings are based on intended applications. (Thermal tripping tests are conducted with all poles in series in 50°C ambient; each pole is tested individually to check magnetic settings.)

400 Cycle Breakers



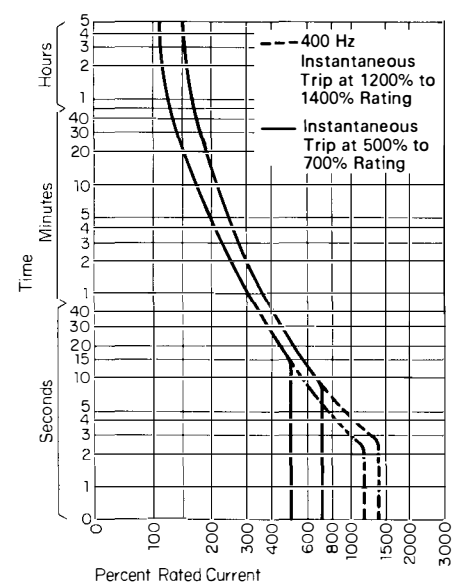
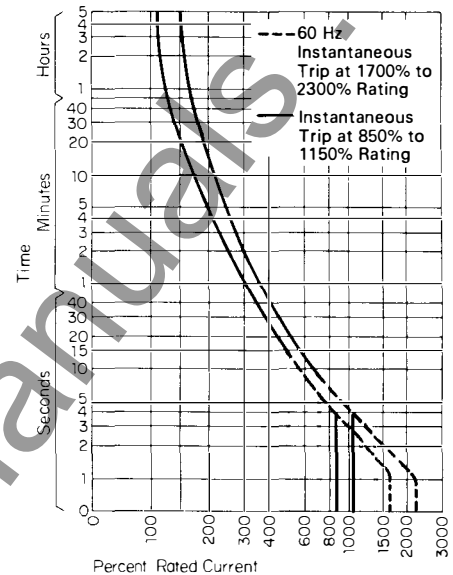
Operating Characteristics
Trip Unit Rating 15-100 Amperes
50°C Ambient - Cold Start
400 Cycle Ac, Thermal Magnetic

Trip Unit Rating



To determine the trip unit rating to be used, when the load current and ambient are known, multiply the load current by the factor obtained from this curve for the known ambient. The result will be the ideal trip unit rating. However, since trip units are furnished only with standard ratings as per Navy spec., select the standard trip unit whose rating is equal to or one rating higher than the ideal rating.

Generator Breakers



50°C Ambient Cold Start,
"G" rating, 60 or 400 Cycle
Ac, or Dc - Thermal Magnetic



April 1991
Supersedes Technical Data 29-220,
pages 23-24, dated October 1978
Mailed to: E, C/29-200A

Types AQB-A250, NQB-A250
250 Volts Dc, 500 Volts Ac
250 Amperes Maximum, 20,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-A250 and NQB-A250 Breakers

Specification: MIL-C-17361

125-250 Amperes

500 Volts Ac and 250 Volts Dc

Two and Three-Pole

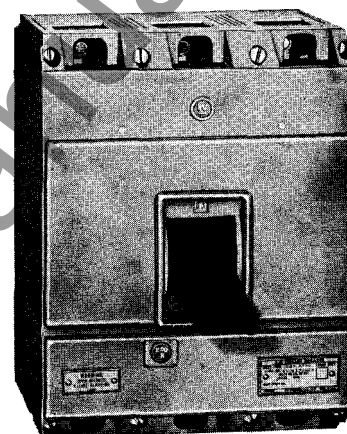
Interrupting Ratings

20,000 Amps Ac and 15,000 Amps Dc

AQB-A250 circuit breakers are used primarily to protect feeder circuits, however, those followed by "NM" in the price table have higher magnetic settings to allow for motor starting. Breakers with settings specifically for use with generators are designated "NG" in the price table.

These breakers are available with interchangeable trip units in ratings of 125, 150, 175, 225 and 250 amperes. The non-automatic NQB-A250 carries a 250 ampere rating and has copper conductors replacing the trip unit. Special generator breakers have trip units rated at 100, 160, and 250 amperes.

AQB-A250 breakers can be ordered with undervoltage release devices, auxiliary switches and shunt trip attachments complete with auxiliary switch. These attachments are also easily installed in the field.



List Prices See Price List 29-020

Cont. Ampere Rating	Inst. Trip Setting – Amps				Complete Breaker ①		Breaker Frame Only①		Trip Unit Only	
	Ac		Dc		Style Number	National Stock No.	Style Number	National Stock No.	Style Number	National Stock No.
	Low	High	Low	High						
Two-Pole 500 Volts Ac, 250 Volts Dc										
125-N	650	1300	650	1300	313C682G03	5925-01-233-6525	452D370G01	5925-01-796-4371	452D371G03	.....
125-NM	1950	3900	2250	4100	313C682G04	.....	452D370G01	5925-01-796-4371	452D371G04	.....
150-N	650	1300	650	1300	313C682G05	.....	452D370G01	5925-01-796-4371	452D371 G05	5925-00-793-6865
150-NM	1950	3900	2250	4100	313C682G06	.....	452D370G01	5925-01-796-4371	452D371 G06	.....
175-N	650	1300	650	1300	313C682G07	.....	452D370G01	5925-01-796-4371	452D371 G07	5925-00-175-5058
175-NM	1950	3900	2250	4100	313C682G08	.....	452D370G01	5925-01-796-4371	452D371 G08	.....
225-N	650	1300	650	1300	313C682G09	.....	452D370G01	5925-01-796-4371	452D371 G09	5925-00-064-7834
225-NM	1500	3000	1770	3550	313C682G10	.....	452D370G01	5925-01-796-4371	452D371 G10	.....
250-N	650	1300	650	1300	313C682G11	.....	452D370G01	5925-01-796-4371	452D371 G11	.....
250-NM	1700	3400	1850	3800	313C682G12	.....	452D370G01	5925-01-796-4371	452D371 G12	.....
250②	Non-Auto	Non-Auto	Non-Auto	Non-Auto	313C682G31	.....	452D370G03	.....	29B2710G05	.....
Two Pole 500 Volts Ac, 250 Volts Dc Generator Circuit Breaker Applications										
100-NG	1175	2350	.....	.....	313C682G13	.....	452D370G01	5925-01-796-4371	452D371G13	.....
160-NG	1950	3900	.....	.....	313C682G14	.....	452D370G01	5925-01-796-4371	452D371G14	.....
250-NG	.....	.....	650	1300	313C682G15	.....	452D370G01	5925-01-796-4371	452D371G15	.....
Three-Pole 500 Volts Ac, 250 Volts Dc										
125-N	650	1300	650	1300	313C682G18	5925-00-248-1425	452D370G02	5925-00-789-3718	452D371G18	5925-00-795-4958
125-NM	1950	3900	2250	4100	313C682G19	5925-01-031-9909	452D370G02	5925-00-789-3718	452D371G19	5925-00-839-0289
150-N	650	1300	650	1300	313C682G20	5925-01-229-4448	452D370G02	5925-00-789-3718	452D371 G20	5925-00-795-4957
150-NM	1950	3900	2250	4100	313C682G21	.....	452D370G02	5925-00-789-3718	452D371 G21	5925-00-839-0290
175-N	650	1300	650	1300	313C682G22	5925-01-235-0718	452D370G02	5925-00-789-3718	452D371 G22	5925-00-796-4439
175-NM	1950	3900	2250	4100	313C682G23	5925-01-192-3985	452D370G02	5925-00-789-3718	452D371 G23	.....
225-N	650	1300	650	1300	313C682G24	5925-01-173-2587	452D370G02	5925-00-789-3718	452D371 G24	5925-00-839-0291
225-NM	1500	3000	1770	3550	313C682G25	5925-01-210-5267	452D370G02	5925-00-789-3718	452D371G25	5925-00-839-0292
250-N	630	1300	650	1300	313C682G26	.....	452D370G02	5925-00-789-3718	452D371 G26	5925-00-839-0293
250-NM	1700	3400	1850	3800	313C682G27	5925-01-272-3805	452D370G02	5925-00-789-3718	452D371 G27	5925-00-690-7568
250②	Non-Auto	Non-Auto	Non-Auto	Non-Auto	313C682G36	.....	452D370G04	5925-00-831-8801	29B2710G06	5925-00-831-8800
Three-Pole 500 Volts Ac, 250 Volts Dc Generator Circuit Breaker Applications										
100-NG	1175	2350	.....	.....	313C682G28	5925-01-080-2226	452D370G02	5925-00-789-3718	452D371G28	5925-00-852-7809
160-NG	1950	3900	.....	.....	313C682G29	5925-01-104-4625	452D370G02	5925-00-789-3718	452D371G29	5925-00-795-4956
250-NG	.....	.....	650	1300	313C682G30	.....	452D370G02	5925-00-789-3718	452D371 G30	.....

Note: Breakers with ratings other than those given on this page are considered as special and full description data must be provided.

① Styles listed include slip-type connectors for rear connections. Order front terminal connectors separately if required; see page 30. No additional charges for front connectors ordered with breakers or frames.

② Type NQB-A250 non-automatic.



AQB-A250 and NQB-A250 Breakers, Continued
List Prices See Price List 29-020

Cont. Ampere Rating	Instantaneous Trip Setting in Amperes ^①		Complete Breaker^②		Breaker Frame Only^②		Trip Unit Only	
	Low	High	Style Number	National Stock No.	Style Number	National Stock No.	Style Number	National Stock No.
400 Cycle, Two-Pole, 500 Volts Ac								
125-NH	910	1560	315C574G03	.....	452D370G01	5925-00-796-4371	457D446G03	.....
150-NH	910	1560	315C574G05	.....	452D370G01	5925-00-796-4371	457D446G05	.....
175-NH	910	1560	315C574G07	.....	452D370G01	5925-00-796-4371	457D446G07	.....
225-NH	910	1560	315C574G09	.....	452D370G01	5925-00-796-4371	457D446G09	.....
250-NH	910	1560	315C574G11	.....	452D370G01	5925-00-796-4371	457D446G11	.....
400 Cycle, Two-Pole, 500 Volts Ac Generator Circuit Breaker Applications								
100-NGH	2020	3420	315C574G13	.....	452D370G01	5925-00-796-4371	457D446G13	.....
160-NGH	2020	3420	315C574G14	.....	452D370G01	5925-00-796-4371	457D446G14	5925-00-758-6227
250-NGH	2520	4200	315C574G15	.....	452D370G01	5925-00-796-4371	457D446G15	.....
400 Cycle, Three-Pole, 500 Volts Ac								
125-NH	910	1560	315C574G18	.....	452D370G02	5925-00-789-3718	457D446G18	5925-00-803-5491
150-NH	910	1560	315C574G20	5925-01-075-8931	452D370G02	5925-00-789-3718	457D446G20	5925-00-803-5488
175-NH	910	1560	315C574G22	5925-01-100-4027	452D370G02	5925-00-789-3718	457D446G22	5925-00-899-9904
225-NH	910	1560	315C574G24	5925-01-193-6055	452D370G02	5925-00-789-3718	457D446G24	5925-01-193-6056
250-NH	910	1560	315C574G26	.....	452D370G02	5925-00-789-3718	457D446G26	5925-01-149-4269
400 Cycle, Three-Pole, 500 Volts Ac Generator Circuit Breaker Applications								
100-NGH	2020	3420	315C574G28	.....	452D370G02	5925-00-789-3718	457D446G28	5925-00-238-5198
160-NGH	2020	3420	315C574G29	.....	452D370G02	5925-00-789-3718	457D446G29	5925-00-803-5489
250-NGH	2520	4200	315C574G30	.....	452D370G02	5925-00-789-3718	457D446G30	.....

Switchboard Mounting

Complete breakers and frames include mounting hardware. Female slip connectors are mounted in breaker base to plug onto stud projections of terminal mounting block assemblies. Order one mounting block assembly for each end of breaker.

Description	Style Number	National Stock No.
One Stud Assembly complete with 4 nuts	1631 443	.....
Terminal Mtg. Block (No Studs)	313C681G01	.....
Mounting Block and Stud Set (3 Studs)	313C680G02	.....
	(Net Weight – 2½ Lbs.)	

Front Connected Breakers

For connections made at front terminals, pressure-type lugs required. If specified on same order, connectors furnished no charge. One connector per terminal. Select below.

Cable Range	Amps	Description	Style Number	National Stock No.
N40-N75	125	Solderless Connector	20B3055H14	.....
N100-N125	150-175		20B3055H15	.....
N150-N200	250		20B3055H16	.....

**Kit to Convert AQB Frame to NQB
Breaker**

Poles	Style Number	National Stock No.	Net Weight
3	29B2710G06	.....	½ Lb.

① For 400 cycle breakers with higher instantaneous trip ratings, refer to Westinghouse.

② Styles listed include slip-type connectors for rear connections. Order front terminal connectors separately if required. No additional charges for front connectors ordered with breakers or frames.

Westinghouse Electric Corporation
Distribution and Control Business Unit
Electrical Components Division
Pittsburgh, Pennsylvania, U.S.A. 15220



April 1991
Supersedes Technical Data 29-220,
pages 25-26, dated October 1978
Mailed to: E, C/29-200A

Types AQB-A250, NQB-A250
250 Volts Dc, 500 Volts Ac
250 Amperes Maximum, 20,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-A250 and NQB-A250 Breakers, Continued

Additions

Handle Lock: If required, order style 1720101. One furnished no charge per 10 breakers ordered, when requested. Net wt., .15 lb.

Mechanical Interlock: If mechanical interlock (switchboard use) is desired for a pair of breakers, order by description. (Not submitted for Navy approval.)

Auxiliary Switch: If required, style 452D379G02, national stock number 5930-00-732-8401. Internally mounted switch is used to open or close control circuits as breaker operates and is provided with "A" and "B" contacts. "A" contact is normally closed when breaker is closed and open when breaker is open; "B" is normally open when breaker is closed and closed with breaker open. It has the following rating at given voltages: 15 amp-125, 250 or 460 volts Ac; ½ amp-125 volts Dc; ¼ amp-250 volts Dc. Net weight, .17 lb.

Fungus - Moisture - Resistant Treatments: (JAN-T-152; JAN-C-173 or MIL-V-173): If specified, contact Westinghouse. External parts are coated; trip units are not treated.

Technical Manual - NAVSHIPS No. 362-2164: This booklet per MIL-M-15071. When required, order BVR-TM-379A.

Shunt Trip: Shunt trip attachments for tripping the breaker electrically from a remote point are listed in table below. Shunt trips have momentary rating only and for protection must be connected in series with auxiliary switch. Auxiliary Switch (style 452D379G02) is included in shunt trip number shown below. Do not order separately. Net weight, .70 lb.

Nominal Voltage	Voltage Range	Style Number	National Stock No.
28 V Dc 115 V Ac	24- 32 90-130	452D377G05	5925-00-831-8808
120 V Dc 450 V Ac	90-130 360-500	452D377G07	5925-01-007-5836

Undervoltage Device: Automatically trips breaker when line voltage drops below 40 to 60% of normal. After undervoltage coil has dropped out and tripped breaker on reduced voltage, it automatically resets by breaker action. (If undervoltage coil is energized to 80% of normal). Select device below. Net weight, 1.12 lbs.

Nominal Voltage	Voltage Range	Pickup and Seal Volts (Minimum)	Dropcut Voltage	Style Number	National Stock Number
450 Ac, 60 Cycle	360-500	360	290 Max. 45 Min.	452D837G01	5925-00-920-3099
250 Dc	175-355	150	25 Min.	452D837G02	.....
33 Dc	30- 36	22	5 Min.	452D837G03	5950-00-790-4869

Individual Reproductions: When required, reproduction of master drawings, outline drawings and certification sheets can be ordered as follows:

Item	Description
1	Full size photolithographic tracing of master drawing on vellum
2	Outline and drilling plan on vellum
3	Certification data on vellum
4	Reproductions of items 1, 2, or 3

Drawings Available: Master drawing 900-J-376; front and rear connected breaker outline, drilling and wiring diagram 452-D-834.

Ordering Information: Page 4

Net Weight, Lbs.

AQB Complete, 3-Pole A250	20.50
NQB Complete, 3-Pole N250	17.50
3-Pole AQB, NQB Frame	17.00
AQB Trip Unit, 3-Pole	3.50



Figure 1: Dimensions of the front panel of the 1000 watt, 120 volt, 60 cycle, 1 phase, 1 pole, 1 throw switch. The diagram shows a rectangular panel with various mounting holes and a central switch mechanism. Dimensions are given in inches and fractions. Key features include: a top mounting rail with four holes (center-to-center $4 \frac{1}{8}$ inches, outer holes $8 \frac{1}{4}$ inches apart); a central switch mechanism labeled "C of Breaker" with a handle; a bottom mounting rail with four holes (center-to-center $4 \frac{7}{8}$ inches, outer holes $8 \frac{7}{8}$ inches apart); and a "Warning Nameplate" on the left. Dimensions for the panel's height and width are also provided.

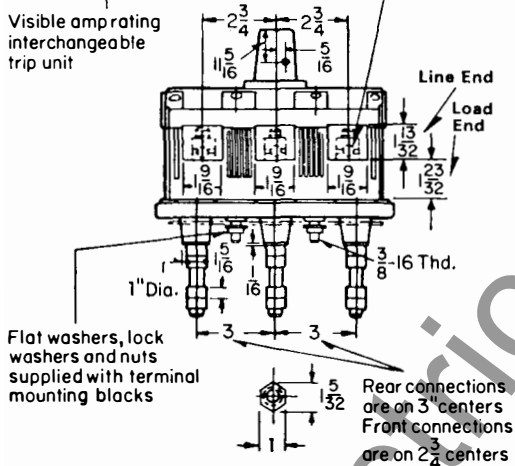
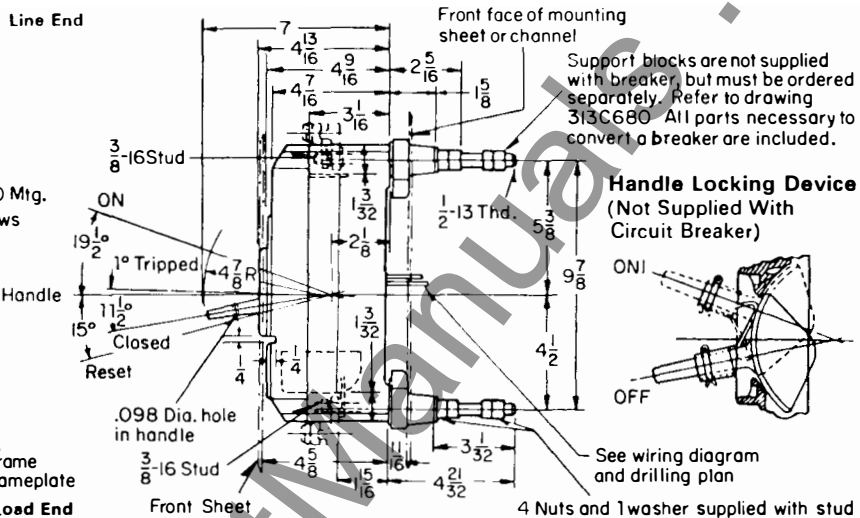


Diagram illustrating the layout of a switchboard breaker support, showing dimensions and labels:

- Top of mtg. block**
- Top of breaker**
- Recommend min distance between**
- Line End**
- Left hand side of breaker**
- Left hand side of breaker**
- Bottom of mtg. block**
- Bottom of breaker**
- Load End**

Dimensions (inches):

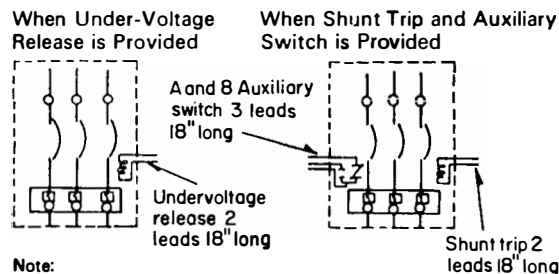
- 7 1/16 Dia. 4 holes
- 9 1/16
- 9 1/8
- 13 1/16
- 5 1/4
- 8 3/8
- 4 3/16
- 9 7/8
- 1 1/8
- 1 1/2
- 3
- 3 1/16
- 6
- 13 1/16
- 3/8 Dia. 6 holes

Other labels:

- Q of Breaker**
- Diameter 2 holes for undervoltage release shunt trip or auxiliary switch leads. Hole to be drilled in switchboard breaker support.**

Diagram showing the dimensions for the mounting of a breaker on a panel. The diagram includes labels for 'Line End', 'Left hand side of breaker', 'Bottom of breaker', 'Load End', 'Top of breaker', 'Top breaker stud', and 'Megger test'. Dimensions are given in inches: 2 1/4, 3, 1 1/2, 2 5/8, 3/8 Dia. 6 holes, 7 1/8, 9/16, 3, 6, 5/16 Dia. 3 holes for megger test, 1/4 R, and 2 3/16.

Style Number	Cable Range MCM		A	B	C
	Max	Min			
20B3055H14	75	50	12 ¹ / ₁₆	6 ³ / ₃₂	5 ⁹ / ₃₂
20B3055H15	125	100	13	6 ¹ / ₁₆	6 ¹ / ₈
20B3055H16	200	150	13 ¹ / ₁₆	7 ¹ / ₃₂	6 ¹ / ₃₂



Note: The auxiliary switch must be used with each shunt trip. Connect one side of shunt trip in series with "A" contact (Closed when breaker is closed) of auxiliary switch when connecting to power supply.



April 1991

Supersedes Technical Data 29-220,
pages 27-28, dated October 1978

Mailed to: E, C/29-200A

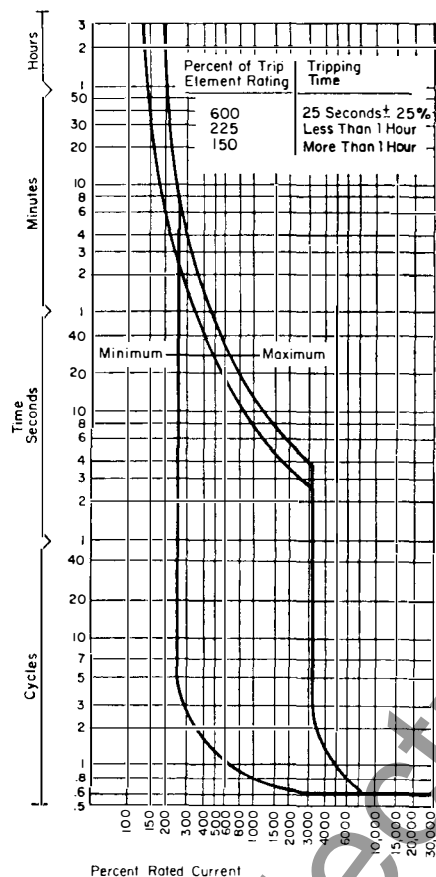
Types AQB-A250, NQB-A250

250 Volts Dc, 500 Volts Ac

250 Amperes Maximum, 20,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

Characteristic Curves AQB-A250



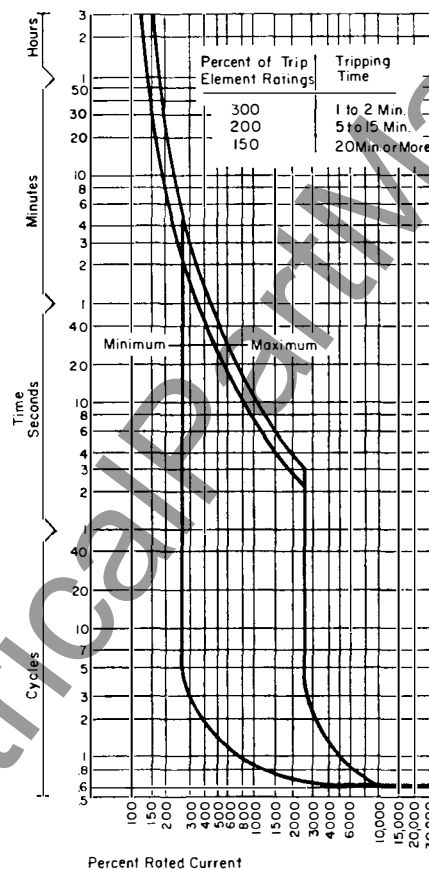
Operating Characteristics

Trip Unit Rating 125-250 Amperes
50°C Ambient – Cold Start, 60 Cycle,
Ac or Dc

Specification MIL-C-17361

This specification covers all thermal-magnetic AQB breakers. It requires that they carry 150% of current ratings for at least one hour and that thermal elements initiate tripping at 225% rated current within one hour and at 600% in 25 seconds plus or minus 25%. The instantaneous magnetic settings for each continuous ratings are based on intended applications. (Thermal tripping tests are conducted with all poles in series in 50°C ambient; each pole is tested individually to check magnetic settings.)

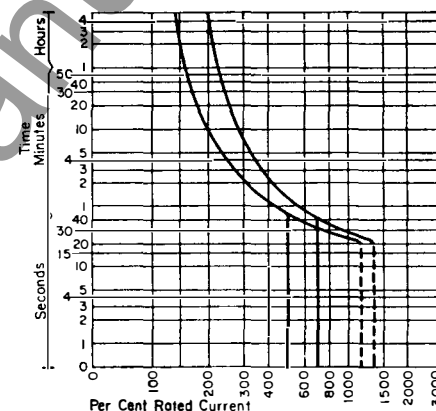
AQB-A250 Generator Breaker



Operating Characteristics

Trip Units, Types 100NGH, 160NGH, 250NGH, 100NG, 160NG and 250NG for use with generator circuit breakers 50°C ambient – Cold Start Ac or Dc

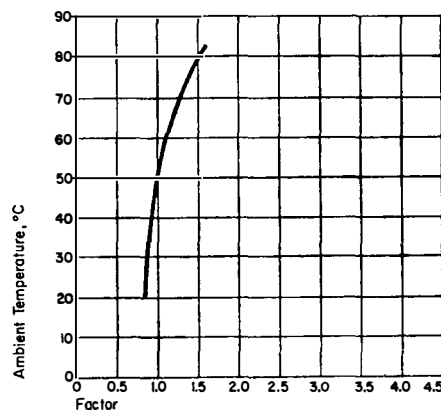
400 Cycle Breakers



Operating Characteristics

Trip Unit Rating 125-250 Amperes
50°C Ambient – Cold Start
400 Cycle Ac

Trip Unit Rating



To determine the trip unit rating to be used, when the load current and ambient are known, multiply the load current by the factor obtained from this curve for the known ambient. The result will be the ideal trip unit rating. However, since trip units are furnished only with standard ratings as per Navy spec., select the standard trip unit whose rating is equal to or one rating higher than the ideal rating.



Westinghouse Electric Corporation
Distribution and Control Business Unit
Electrical Components Division
Pittsburgh, Pennsylvania, U.S.A. 15220



April 1991
Supersedes Technical Data 29-220,
pages 33-34, dated October 1978
Mailed to: E, C/29-200A

Type AQB-LF100, 100 Amperes Maximum,
Type AQB-LF250, 250 Amperes Maximum,
500 Volts Ac, 100,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-LF100 and AQB-LF250 Breakers

Application

AQB-LF100 and AQB-LF250 circuit breakers are for use in low voltage distribution systems where available fault current exceed the interrupting ratings of standard molded case breakers but does not exceed 100,000 amperes.

Like standard Navy breakers, they are designed for use in switchboards, load centers and panelboards.

AQB-LF circuit breakers are available in three-pole design and for rear connection only.

Note: AQB-LF100 breakers are sold for replacement only. They are no longer on Navy Qualified Product List.

Description

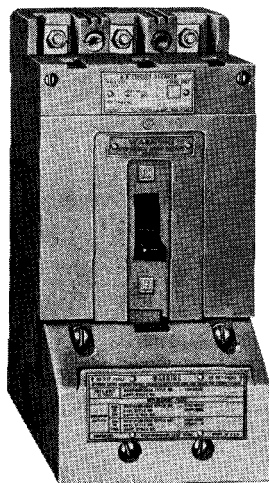
These breakers are essentially standard Navy circuit breakers incorporating current limiting fuses in one compact device. The fuses are mounted in a removable molded housing which plugs into and becomes an integral part of the breaker. Fuses are easily replaced from the front simply by loosening four screws and pulling out the fuse housing.

An interlock prevents the breaker being closed if any of the three fuses are blown and the fuse housing is so designed that all three fuses must be unblown before the housing can be mounted in its correct position on the breaker. Removal of the fuse housing automatically opens breaker and provides visual assurance that the circuit is disconnected.

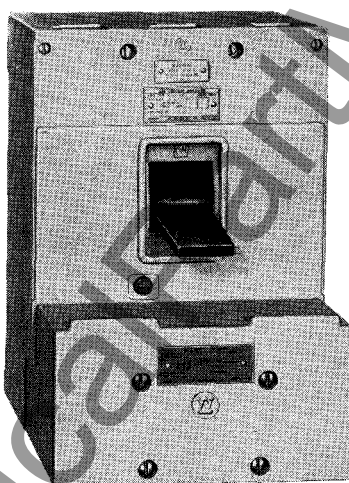
Operation

The thermal magnetic trip unit of the standard breaker provides protection on overloads and short circuits below a predetermined value without affecting the fuses. However, these specially coordinated fuses assume the fault clearing duty on high magnitude short circuits and extend the interrupting capacity to 100,000 amperes.

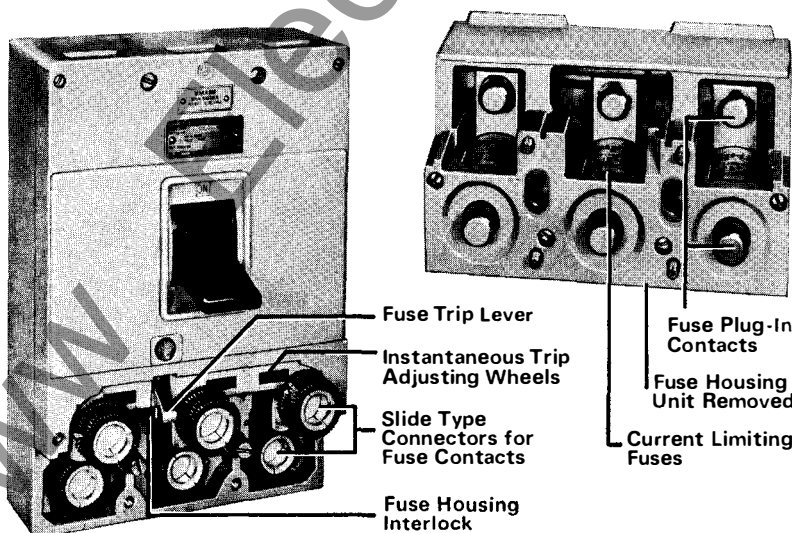
The common trip feature of the circuit breaker is retained so that all poles open when any fuse blows. Fast acting current limiting fuses clear short circuits in less than one-half cycle. Consequently, peak let-through currents are greatly reduced and bus-supporting members or current carrying parts do not have to be designed to meet maximum peak current.



AQB-LF100 fused Navy circuit breaker



AQB-LF250 fused Navy circuit breaker



AQB-LF100 Fused Breaker Specification: MIL-C-17361
15-100 Amps, 500 Volts Ac, 60 Cycles, Three-Pole, Interrupting Rating: 100,000 Amperes

Note: AQB-LF100 breakers are sold for replacement only. They are no longer on Navy Qualified Product List.

AQB-LF100 breakers are designed for the same application as the AQB-A100 (non-fused) circuit breaker except that they may be applied on circuits where fault currents up to 100,000 amps are available. Breakers designated by the suffix "DF" in the table have settings designed for the protection of feeder circuits and those followed by "D" have higher magnetic settings to allow for motor starting.

List Prices See Price List 29-020

Cont. Amp. Rating	Instantaneous Trip Setting in Amps		Breaker Complete		Breaker Frame ^①		Trip Unit		Fuses	
			Style Number ^②		Style Number	National Stock No.	Style Number	National Stock No.	Style Number ^②	Quant. Req.
	Low	High								
Three-Pole 500 Volts Ac										
15-DF	90	105	452D391G16		452D390G02	5925-00-617-8312	452D385G13	5925-00-849-8481	313C743H02	3
15-D	180	210	452D391G17		452D390G02	5925-00-617-8312	452D384G13	5925-00-655-1156	313C743H02	3
25-DF	180	210	452D391G18		452D390G02	5925-00-617-8312	452D385G15	5925-00-655-1157	313C743H02	3
25-D	300	350	452D391G19		452D390G02	5925-00-617-8312	452D384G15	5925-00-655-1158	313C743H02	3
50-DF	300	350	452D391G20		452D390G02	5925-00-617-8312	452D385G17	5925-00-655-1159	313C743H03	3
50-D	600	700	452D391G21		452D390G02	5925-00-617-8312	452D384G17	5925-00-655-1160	313C743H03	3
75-DF	450	525	452D391G22		452D390G02	5925-00-617-8312	452D385G20	5925-00-655-1161	313C743H03	3
75-D	900	1050	452D391G23		452D390G02	5925-00-617-8312	452D384G20	5925-00-655-1162	313C743H03	3
100-DF	600	700	452D391G24		452D390G02	5925-00-617-8312	452D385G23	5925-00-655-1163	313C743H03	3
100-D	1200	1400	452D391G25		452D390G02	5925-00-617-8312	452D384G23	5925-00-655-1164	313C743H03	3

① Breaker frame consists of frame with its fuse housing unit and slip type connectors for back connection, but does not include trip unit, fuses or mounting blocks. Order these separately, trip units and fuses from table above and mounting blocks from listings below.

② National stock number not assigned.

Switchboard Mounting

Breaker frame includes mounting hardware. Female slip connectors are mounted on the rear for plugging onto stud projections of terminal mounting block assemblies. Order one for each end of the breaker.

Description	Style Number	National Stock No.
One Stud Assembly Complete with 4 Nuts	1631 442	5940-00-501-9120
Terminal Mounting Block (No Studs)	1764 240	.....
Mounting Block and Stud Set (3 Studs)	301P272G01	.....

Additions

Individual Reproductions: When required, reproductions of master drawings, outline drawings and certification sheets can be ordered as follows:

Item	Description
1	Full size photolithographic tracing of master drawing on vellum
2	Outline and drilling plan on vellum
3	Certification data on vellum
4	Reproduction of items 1, 2 or 3

Drawings Available: Master drawing 900J377; outline drilling plan and wiring diagram: 451D711.

Handle Lock (For Shipboard Maintenance Use Only): Order style number 1614 485.

Fungus-Moisture-Resistant Treatments (JAN-T-152; JAN-C-173 or MIL-V-173): If specified, contact Westinghouse. External parts are coated; trip units are not treated.

Technical Manual: NAVSHIPS number 362-2166. This booklet per MIL-M-15071. When required, order BVR-TM-380.

Fuse Housing Unit (No Fuses)

Style Number	National Stock No.
313C742G01	6605-00-799-3521

Net Weight – Lbs.

AQB Breaker Complete 3-Pole	13.62
AQB Breaker Frame Only Complete with Fuse Unit Assembly	
Without Fuses	9.68
Trip Unit 3-Pole	2.62
Fuse Unit Assembly Without Fuses	1.62
One Mounting Block with 3 Studs	1.62
Current Limiting Fuse	.45
Circuit Breaker Handle	
Locking Device	.25



April 1991
Supersedes Technical Data 29-220,
pages 35-36, dated October 1978
Mailed to: E, C/29-200A

Type AQB-LF100, 100 Amperes Maximum
Type AQB-LF250, 250 Amperes Maximum
500 Volts Ac, 100,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-LF250 Fused Breaker Specification: MIL-C-17361

**125-250 Amps • 500 Volts Ac,
60 Cycles • Three-Pole
Interrupting Rating: 100,000 Amperes**

These fused breakers are designed for applications similar to those for AQB-A250 (non-fused). However, because of their current limiting fuses, they can be applied

on circuits with available fault currents up to 100,000 amps. Only three-pole breakers are available.

Undervoltage release devices, shunt trips and/or auxiliary switches are available for the AQB-LF250 and can be easily installed in the field.

Those breakers identified by the suffix "LM" in the price table have higher magnetic settings for motor starting while those carrying the suffix "L" are set for the protection of feeder circuits.

List Prices See Price List 29-020

Cont. Amp. Rating	Instan- taneous Trip Setting in Amps	Breaker Complete		Breaker Frame ^①		Trip Unit		Fuses	
		Style Number		Style Number	National Stock No.	Style Number	National Stock No.	Style Number ^②	Quant. Req.
Three-Pole 500 Volts Ac (Refer to Westinghouse for Two-Pole Styles and Prices)									
125-L	650 1300	313C748G18		452D820G02	5925-00-617-8313	452D821G18	5925-00-655-1165	313C743H04	3
125-LM	1500 3000	313C748G19		452D820G02	5925-00-617-8313	452D821G19	5925-00-655-1166	313C743H04	3
150-L	650 1300	313C748G20		452D820G02	5925-00-617-8313	452D821G20	5925-00-655-1167	313C743H04	3
150-LM	1500 3000	313C748G21		452D820G02	5925-00-617-8313	452D821G21	5925-00-655-1168	313C743H04	3
175-L	650 1300	313C748G22		452D820G02	5925-00-617-8313	452D821G22	5925-00-655-1169	313C743H04	3
175-LM	1500 3000	313C748G23		452D820G02	5925-00-617-8313	452D821G23	5925-00-655-1170	313C743H04	3
225-L	650 1300	313C748G24		452D820G02	5925-00-617-8313	452D821G24	5925-00-655-1171	313C743H04	3
225-LM	1500 3000	313C748G25		452D820G02	5925-00-617-8313	452D821G25	5925-00-655-1172	313C743H04	3
250-L	650 1300	313C748G26		452D820G02	5925-00-617-8313	452D821G26	5925-00-655-1174	313C743H04	3
250-LM	1500 3000	313C748G27		452D820G02	5925-00-617-8313	452D821G27	5925-00-655-1173	313C743H04	3
		Net Wt. 32.00 Lbs.		Net Wt. 24.50 Lbs.		Net Wt. 3.00 Lbs.		Net Wt. 1.50 Lbs.	

① Breaker frame consists of frame with its fuse housing unit and slip type connector for back connection, but does not include trip unit, fuses or mounting blocks. Order these separately, trip units from table above and mounting blocks from listings below.

② National stock number H5925-00-624-3049.

Switchboard Mounting

Breaker frame includes mounting hardware. Female slip connectors are mounted on the rear for plugging onto stud projections of terminal mounting block assemblies. Order one for each end of breaker.

Description	Style Number	National Stock No.
One Stud Assembly Complete with 4 Nuts Terminal Mounting Block (No Studs) Mounting Block and Stud Set (3 Studs)③	1631 443 313C681G01 313C680G02	5940-00-501-9119

③ Net Weight 3.00 Lbs.

Additions

Individual Reproductions: When required, reproductions of master drawings, outline drawings, and certification sheets can be ordered at the following prices:

Item	Description
1	Full size photolithographic tracing of master drawing on vellum
2	Outline and drilling plan on vellum
3	Certification data on vellum
4	Reproduction of items 1, 2 or 3

Drawings Available: Master drawing 900-J-379; breaker outline, drilling and wiring diagram 451D250.

Handle Lock (For shipboard maintenance use only): Order style number 1720 101. Net weight .10 lbs.

Auxiliary Switch: For description see AQB-A250 breaker, page 31. Style number 452D379G02 same as for AQB-A250. Net weight .17 lbs.

Shunt Trip Attachment: To order refer to AQB-A250 breaker on page 31. Style numbers and net prices are same as those for AQB-A250. Net weight .70 lbs.

Undervoltage Device: To order, refer to AQB-A250 breaker on page 31. Style numbers and net prices are same as those for AQB-A250. Net weight 1.12 lbs.

Technical Manual: NAVSHIPS number 362-2165. This booklet per MIL-M-15071. When required, order BVR-TM-381.

Fuse Housing Unit (No Fuses)

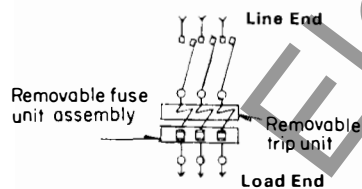
Style Number	National Stock No.	Net Weight
452D832G01		4.50 Lbs.

Ordering Information: See page 4.

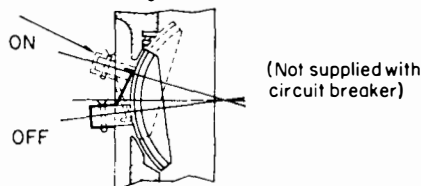
Net Weights: See listings in tables and additions.

[illegible]

Wiring as Shown is for a 3 Pole
Breaker For 2 Pole Breaker Omit
Middle Pole



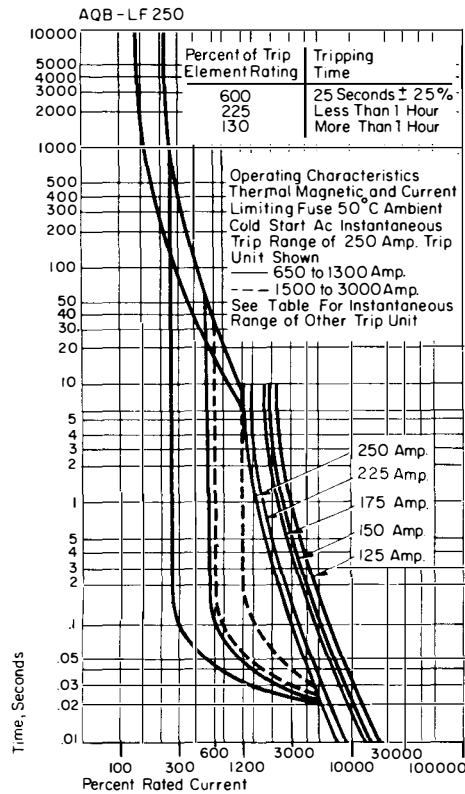
Reverse position of lock to prevent breaker from opening



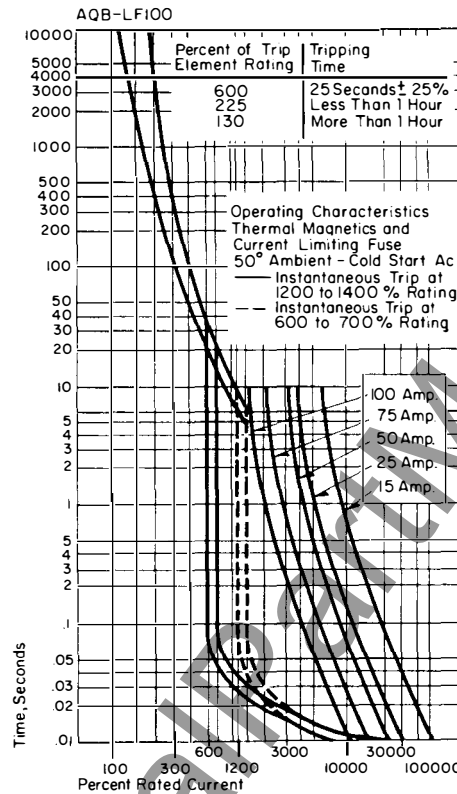
AQB Breaker with Over-Current, Short Circuit Trip and Fuses



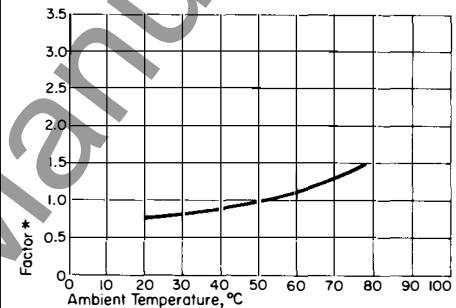
Characteristic Tripping Curves AQB-LF250 Breakers



AQB-LF100 Breakers



To determine the trip unit rating to be used, when the load current and ambient are known, multiply the load current by the factor obtained from the curve below for the known ambient. The result will be the ideal trip unit rating. However, since trip units are furnished only with standard ratings as per Navy spec., select the standard unit trip whose rating is equal to or one rating higher than the ideal rating.

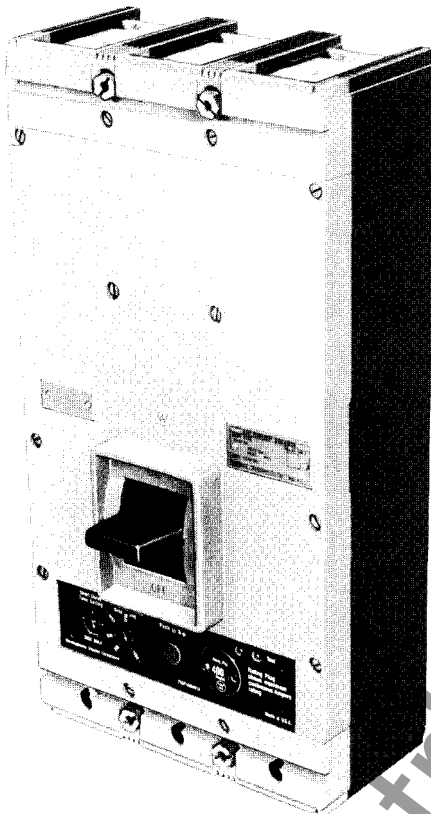




April 1991
New Information
Mailed to: E, C/29-200A

Types AQB-L400QF, AQB-L400QM;
150,000 Amperes I.C. and
AQB-LL400QS; 100,000 Amperes I.C.
250-400 Amperes; 500 Volts 60 Hz Ac

AB DE-ION® Circuit Breakers for Shipboard Use



Description

The Navy Type AQB-L400QF, AQB-L400QM, and AQB-LL400QS molded case circuit breakers are 500 Vac maximum rated devices with electronic trip units rated at 400 amperes maximum continuous current at 60 Hz. The circuit breakers are assembled as 3-pole units which may be used as 2- or 3-pole devices.

The circuit breakers are designed to MIL-C-17361 and meet the requirements of Class HI-shock, MIL-S-901. The circuit breaker electronic trip unit has adjustable short delay time and pick-up trip settings which can be readily changed at the operator level to meet the shipboard system trip requirements. Four interchangeable rating-plugs are available to select the continuous current rating of 250, 300, 350 or 400 amperes. Also provided is a non-adjustable inverse time delay tripping action for overload conditions, and instantaneous tripping for protection against short circuit conditions that exceed the preset short delay pick-up setting. In open air at 50°C, the circuit breaker will carry continuously a current equal to the ampere rating of the installed rating plug. The calibration of the trip unit is insensitive to ambient temperatures over a range of -20°C to +70°C.

Operation

The AQB-L400QF, AQB-L400QM, and AQB-LL400QS current limiting circuit breakers (without the need for current limiting fuses) are designed to provide circuit protection for low voltage distribution systems. The circuit breakers will disconnect a load from an electrical supply when the handle is operated, when an overcurrent or short cir-

AQB-L400QF, AQB-L400QM and AQB-LL400QS current limiting circuit breakers are designed for installation in switchboards for protection of generators and feeders and branch circuits with available fault currents of 150,000 amperes maximum.



Motor Operator Mounted on Circuit Breaker

cuit condition develops, or when the push-to-trip button in the trip unit is manually pressed. A complete breaker consists of a breaker, rating plug plus mounting base and is available with numerous attachments such as electrical operator, shunt trip, undervoltage release and auxiliary switches to perform varied auxiliary functions.

The circuit breaker has a spring-loaded independent over-toggle operating mechanism that provides quick-make quick-break trip free operation.

The operating mechanism also provides the electro-mechanical means to open the contacts when trip conditions occur. When current is flowing through the contacts of the circuit breaker, the positions of the lower contact arms and the moving contact arms induce opposing magnetic fields. The resulting opposing forces along the magnetic flux lines cause rapid contact blow-apart under high current fault conditions. The AQB-L400QF and AQB-L400QM circuit breakers have slot motors for each moving contact arm to intensify the magnetic field and further increase the blow-apart effect.

AQB-L400QF, AQB-L400QM and AQB-LL400QS Current Limiting Navy Circuit Breakers

250-400 Amperes, 500 Volts Ac, 60 Hz 3 Pole Only, 50°C Ambient

Continuous Current Ratings:

250A 350A
300A 400A

Current Interruption Ratings:

AQB-L400QF 150,000 Amperes
AQB-L400QM 150,000 Amperes
AQB-LL400QS 100,000 Amperes

Protective Functions:

Short Delay Pick-up (Adjustable)

AQB-L400QF 650-1500 Amps
AQB-L400QM 1700-3200 Amps
AQB-LL400QS 3600-5800 Amps

Long Delay Pick-up (Minimum Thermal Trip) (Fixed)

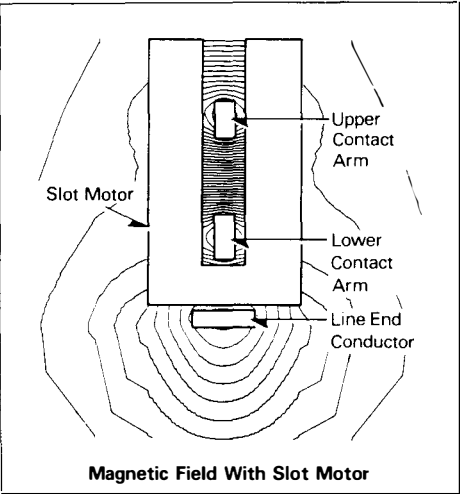
131% to 156% (All Ratings)

Instantaneous Pick-up (Fixed)

AQB-L400QF 2850 Amps
AQB-L400QM 3280 Amps
AQB-LL400QS 6300 Amps



This enables these circuit breakers to have an interrupting rating of 150 kA compared with the AQB-LL400QS rating of 100 kA.



A push-to-trip button is provided to manually trip the circuit breaker. When the button is pressed, a plunger rotates the latch lever causing the circuit breaker to trip.

All trip units are built into the circuit breaker frames and use electronic sensing elements. The Type AQB-L400QF, AQB-L400QM, and AQB-LL400QS Seltronic[™] trip units provide protection functions. All trip units are supplied electrically from current sensors mounted on the main conductors in the circuit breaker base. A field-installed rating plug determines the continuous ampere rating of the trip unit. An electrical interlock causes the circuit breaker to trip at current levels of 75% or more if the rating plug is not installed. Under fault conditions, the trip unit will initiate a trip signal and energize the flux shunt trip. When the flux shunt trip operates, a plunger extends and rotates the trip lever. As the trip lever rotates, the latch lever rotates which unlatches the trigger and the circuit breaker trips.

Overload Trip The trip unit initiates an ultimate trip of the circuit breaker within one hour for an overload of 131% to 156%, and in less time for higher overloads.

Short Delay Trip For short circuit conditions that exceed the short delay pick-up setting but not the instantaneous (override) pick-up,

the trip unit initiates a trip after the selected short delay time setting.

Instantaneous Trip For short circuit conditions that exceed the instantaneous (override) pick-up value, but not the current-limiting threshold (Figures 2-3 through 2-14) the trip unit initiates a trip with no intentional delay.

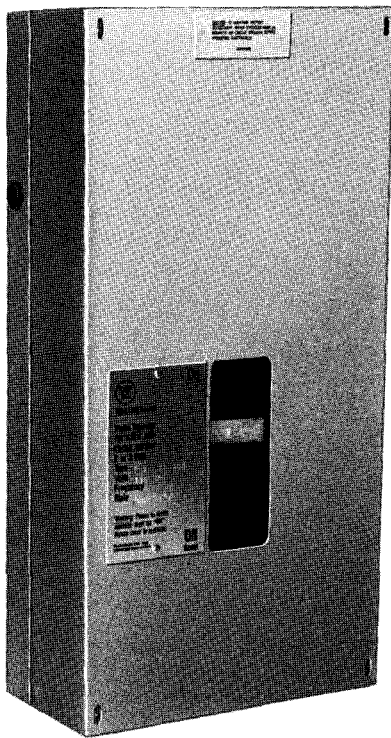
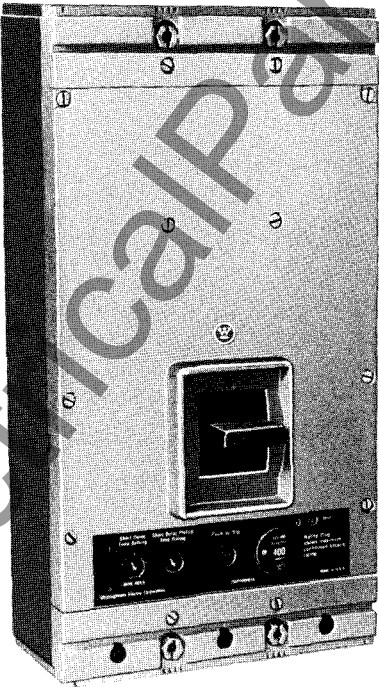
List Prices See Price List 29-020

Type Breaker	Westinghouse Style Number
Circuit Breaker, Navy Type (Supplied with male plug-in adapters installed for rear connection)	
AQB-LL400QS Circuit Breaker	1230C83G01
AQB-L400QF Circuit Breaker	1230C83G02
AQB-L400QM Circuit Breaker	1230C83G03
Rating Plug	
250Q Rating Plug, 250 Amps	1230C84G01
300Q Rating Plug, 300 Amps	1230C84G02
350Q Rating Plug, 350 Amps	1230C84G03
400Q Rating Plug, 400 Amps	1230C84G04

Motor Operator

The motor operator is designed to remotely switch a circuit breaker to its ON, OFF and relatch positions. The relatch function will occur automatically after a circuit breaker trip operation. The motor operator is self-contained and assembled in its own mounting frame which mounts on the front of the circuit breaker. When the ON or OFF remote control button is pressed, current flows to the electric motor which turns a ball bearing and screw assembly driving the carrier and roller assembly. Two rollers fit over the circuit breaker handle and move with the handle through its range of movement. Limit switches control the travel of the carrier assembly. A terminal block is provided in the mounting frame for control connections.

Type	Westinghouse Style Number
Motor Operator 115 V Ac	1234C53G01
Motor Operator 450/115 V Ac	1234C53G03



Circuit Breakers, Navy Type, AQB-L400QF, AQB-L400QM, and AQB-LL400QS and Motor Operator

Westinghouse Electric Corporation
Distribution and Control Business Unit
Electrical Components Division
Pittsburgh, Pennsylvania, U.S.A. 15220



April 1991
New Information
Mailed to: E, C/29-200A

Types AQB-L400QF, AQB-L400QM;
150,000 Amperes I.C. and
AQB-LL400QS; 100,000 Amperes I.C.
250-400 Amperes; 500 Volts 60 Hz Ac

AB DE-ION® Circuit Breakers for Naval Shipboard Use

Mounting Block

Type	Westinghouse Style Number
Plug-in Mounting Block, Rear Connected, Complete (Required one per load or line end)	1230C81G01
Mounting Block, Molded Base Only (For mounting a front connected circuit breaker, or as a replacement part)	1230C81G05
Male Slip Connectors (Replacement part, three per kit)	1230C81G04
Front Connected Terminal (Required three per line or load end)	504C497G01

Auxiliary Switches

Type	Westinghouse Style Number
Auxiliary Switch 1a/1b 115-450 V Ac 2a/2b 115-450 V Ac 1a/1b 120 V Dc 2a/2b 120 V Dc 1a/1b 115-450 V Ac and 1a/1b 120 V Dc Combination	1220C86G01 1220C86G02 1220C86G05 1220C86G06 1220C86G07

Shunt Trip

Type	Westinghouse Style Number
Shunt Trip (Left-Pole only) (Includes built-in cutoff switch) 115 V Ac/28 to 120 V Dc 450 V Ac Only	1220C86G03 1220C86G04
Combination Shunt Trip and 1a/1b Auxiliary Switch (Left-Pole Only)	
115 V Ac/28-120 V Dc Shunt Trip and 115-450 V Ac Auxiliary Switch	1220C86G08
115 V Ac/28-120 V Dc Shunt Trip and 120 V Dc Auxiliary Switch	1220C86G09
450 V Ac Shunt Trip and 115-450 V Ac Auxiliary Switch	1220C86G10
450 V Ac Shunt Trip and 120 V Dc Auxiliary Switch	1220C86G11

Undervoltage Release (Left-Pole Only)

UVR and Circuit Breaker must be ordered as an integral unit

Type	Westinghouse Style Number
AQB-L400QF with 115 V Ac Undervoltage Release Mechanism	1230C83G15
AQB-L400QF with 450 V Ac* Undervoltage Release Mechanism	1230C83G16
AQB-L400QF with 120 V Dc Undervoltage Release Mechanism	1230C83G17
AQB-L400QF with 250 V Dc Undervoltage Release Mechanism	1230C83G18
AQB-L400QM with 115 V Ac Undervoltage Release Mechanism	1230C83G19
AQB-L400QM with 450 V Ac* Undervoltage Release Mechanism	1230C83G20
AQB-L400QM with 120 V Dc Undervoltage Release Mechanism	1230C83G21
AQB-L400QM with 250 V Dc Undervoltage Release Mechanism	1230C83G22
AQB-L400QS with 115 V Ac Undervoltage Release Mechanism	1230C83G11
AQB-L400QS with 450 V Ac* Undervoltage Release Mechanism	1230C83G12
AQB-L400QS with 120 V Dc Undervoltage Release Mechanism	1230C83G13
AQB-L400QS with 250 V Dc Undervoltage Release Mechanism	1230C83G14

*Using externally-mounted step-down transformer supplied

Switchboard Mounting

Breaker frame includes mounting hardware. Stud projections are mounted on the rear of the breaker for plugging into female slip connectors of terminal mounting block assemblies.

Handle Lock (For shipboard maintenance use only) order style number 1720101.

Fungus – Moisture – Resistance Treatments: (JAN-T-152; JAN-C-173; MIL-V-173) If specified contact Westinghouse. External parts are coated.

Technical Manual: When required order 1240C33H01.

Portable Test Kit – Can be used to functionally test the breaker for overload and short circuit, while breaker is mounted. When required order catalog number STK2.

Individual Reproduction: When required reproduction of outline drawings and certification sheets can be ordered as follows:

Item	Description
1	Outline drawing and drilling plan on vellum
2	Certification data on vellum
3	Reproduction of items 1 and 2

Repair Parts:

Net Weight:

Item	Weight
Circuit Breaker	30 lbs.
Motor Operator	22 lbs.
Mounting Block	10 lbs.
Front Connected Terminals (Set of Three)	1 lb.-10¼ ozs.
Portable Test Kit	12 lb.-14¼ ozs.





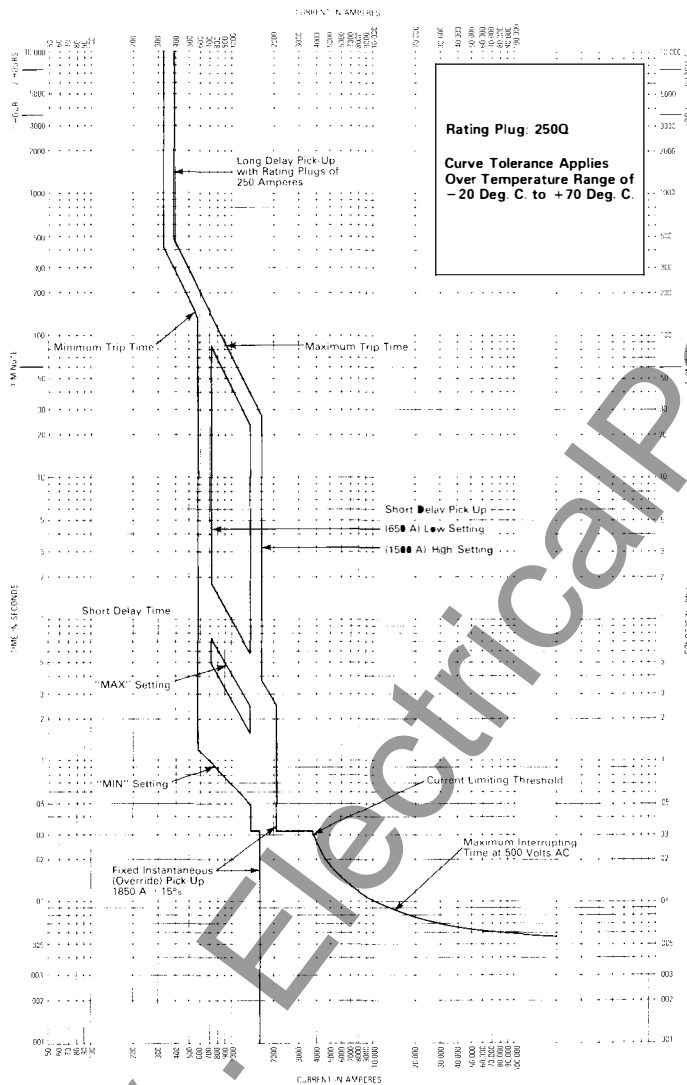
April 1991
New Information
Mailed to: E, C/29-200A

Types AQB-L400QF, AQB-L400QM;
150,000 Amperes I.C. and
AQB-LL400QS; 100,000 Amperes I.C.
250-400 Amperes; 500 Volts 60 Hz Ac

AB DE-ION® Circuit Breakers for Naval Shipboard Use



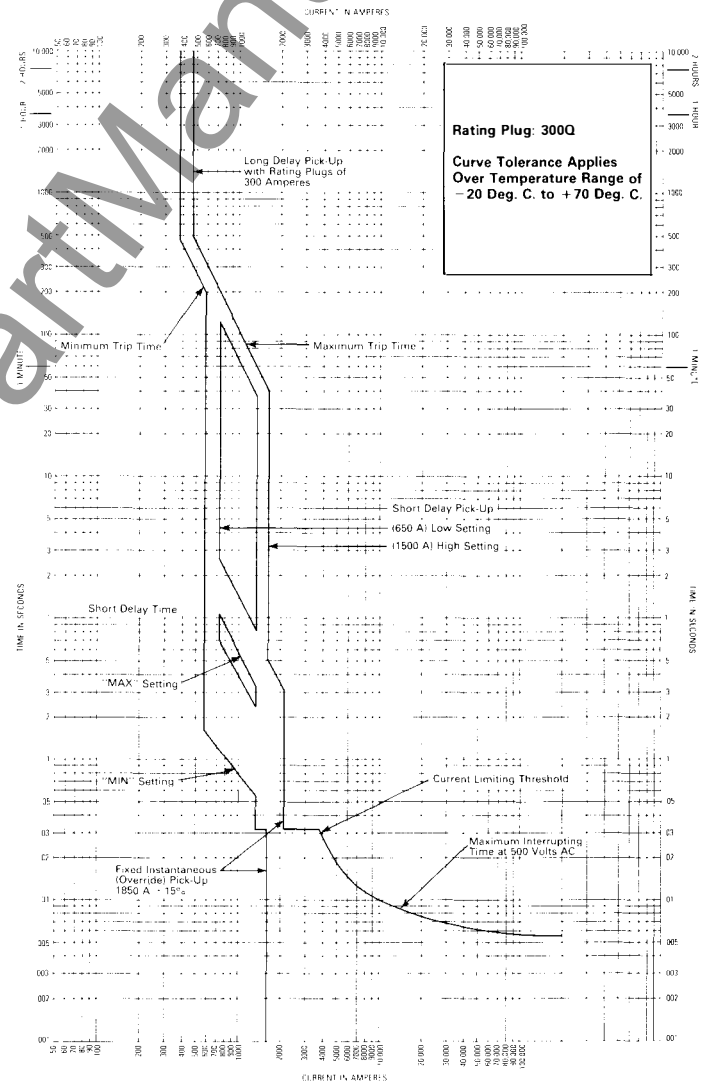
Navy Type AQB-L400QF Circuit Breaker



Time-Current Curves for AQB-LL400QS Circuit Breaker with 250 Ampere Rating Plug



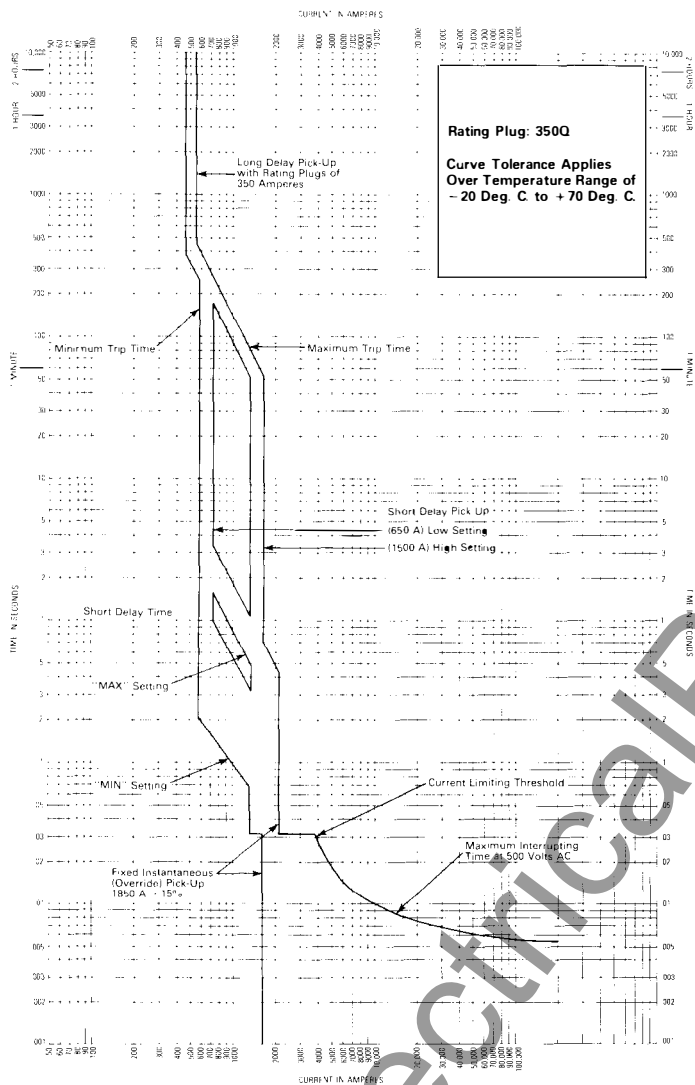
Navy Type AQB-L400QF Circuit Breaker



Time-Current Curves for AQB-LL400QS Circuit Breaker with 300 Ampere Rating Plug



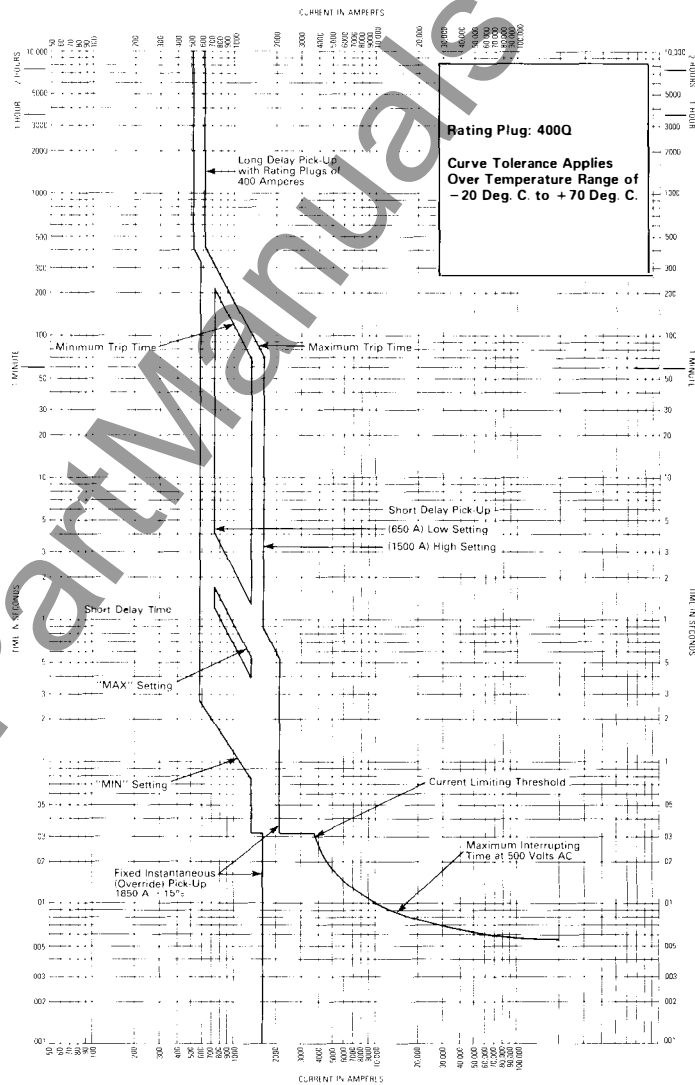
Navy Type AQB-L400QF Circuit Breaker



Time-Current Curves for AQB-LL400QS Circuit Breaker with 350 Ampere Rating Plug



Navy Type AQB-L400QF Circuit Breaker



Time-Current Curves for AQB-LL400QS Circuit Breaker with 400 Ampere Rating Plug

Westinghouse Electric Corporation
Distribution and Control Business Unit
Electrical Components Division
Pittsburgh, Pennsylvania, U.S.A. 15220



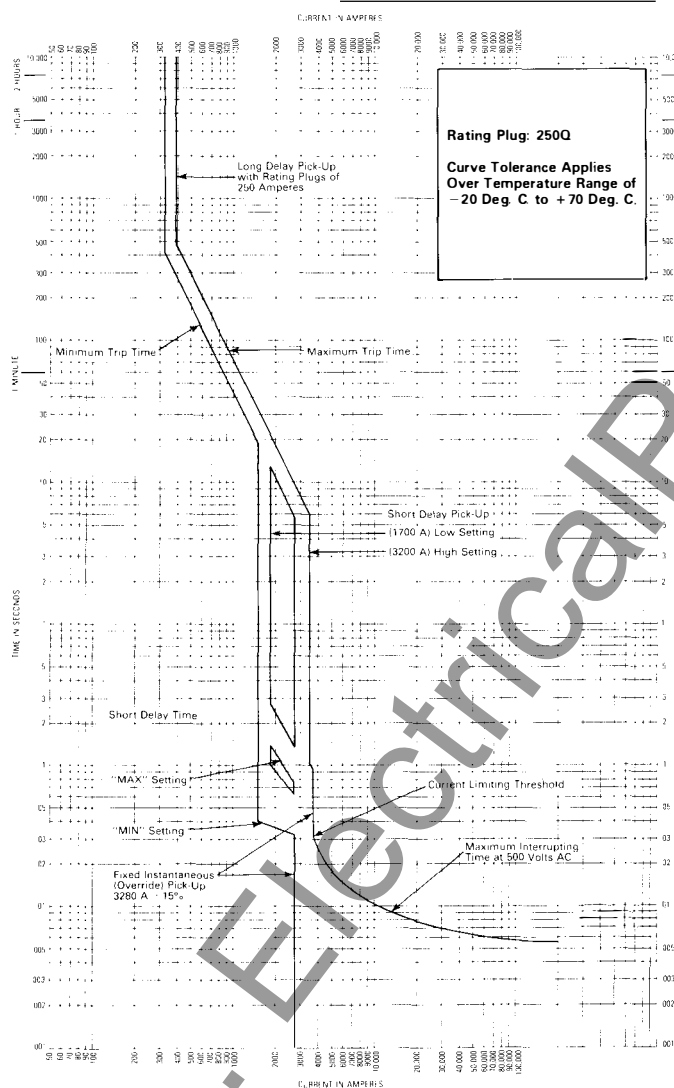
April 1991
New Information
Mailed to: E, C/29-200A

Types AQB-L400QF, AQB-L400QM;
150,000 Amperes I.C. and
AQB-LL400QS; 100,000 Amperes I.C.
250-400 Amperes; 500 Volts 60 Hz Ac

AB DE-ION® Circuit Breakers for Naval Shipboard Use



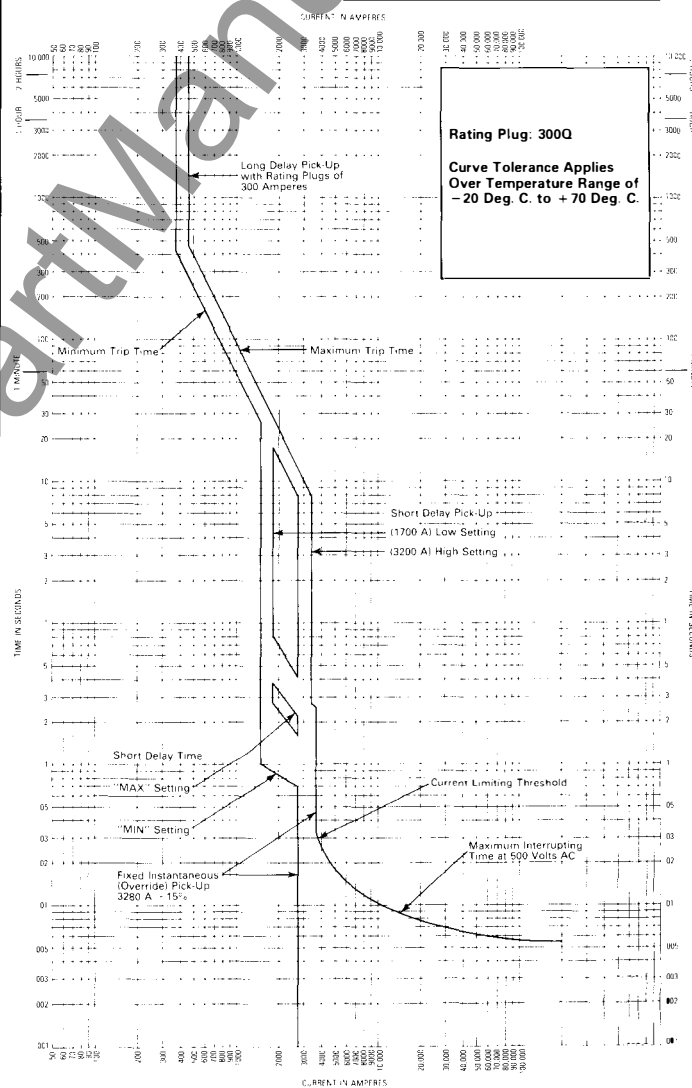
Navy Type AQB-L400QM Circuit Breaker



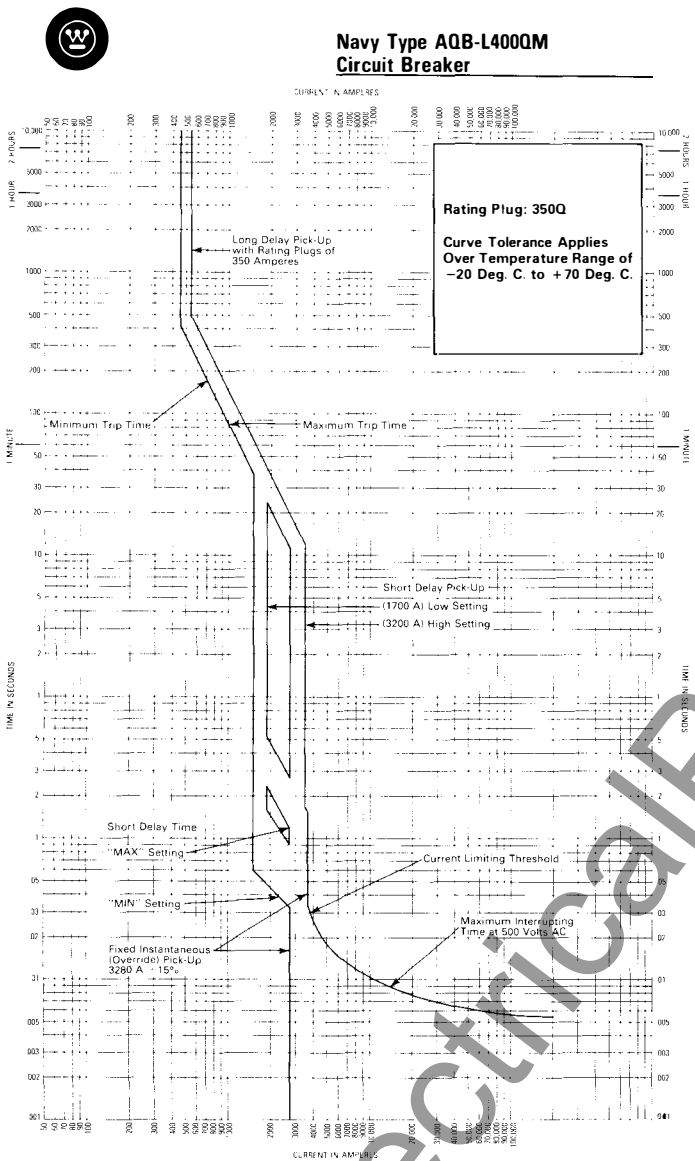
Time-Current Curves for AQB-L400QF Circuit Breaker with 250 Ampere Rating Plug



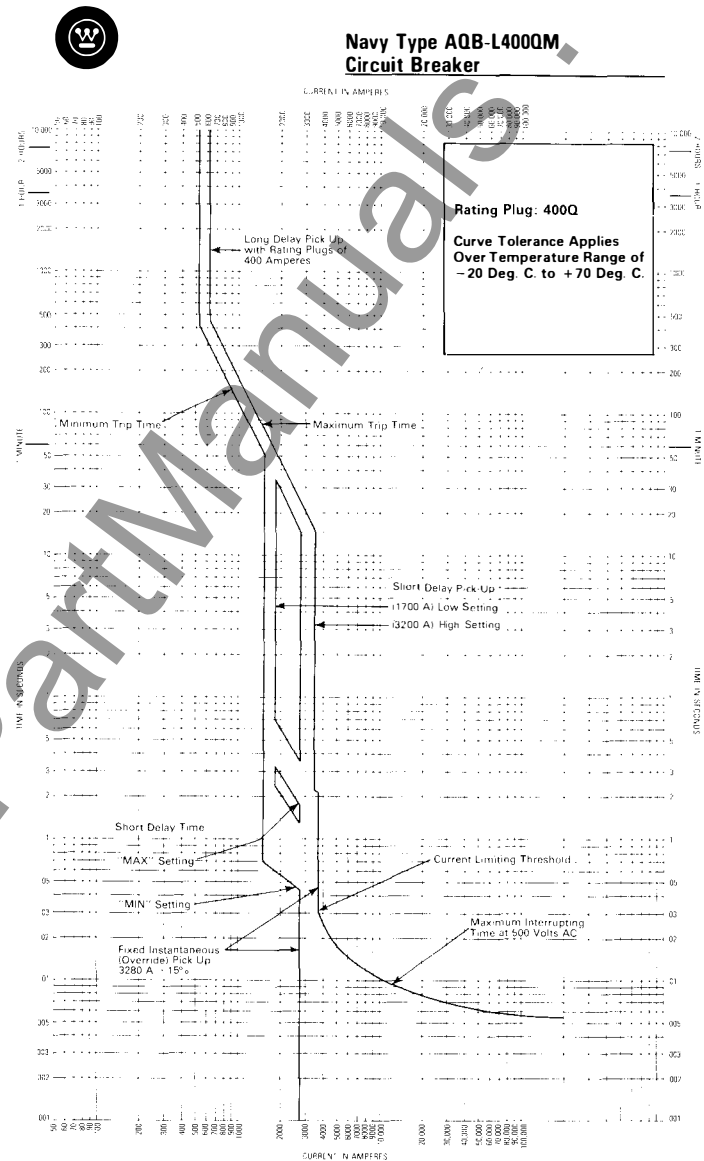
Navy Type AQB-L400QM Circuit Breaker



Time-Current Curves for AQB-L400QF Circuit Breaker with 300 Ampere Rating Plug



Time-Current Curves for AQB-L400QM Circuit Breaker with 350 Ampere Rating Plug



Time-Current Curves for AQB-L400QM Circuit Breaker with 400 Ampere Rating Plug



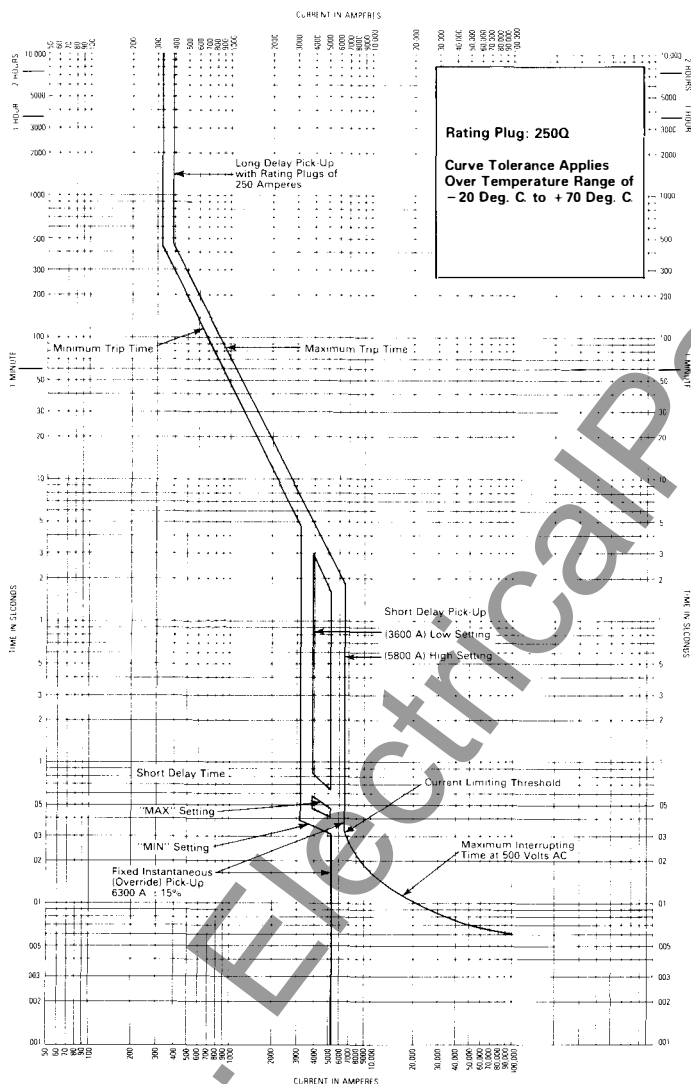
April 1991
New Information
Mailed to: E, C/29-200A

Types AQB-L400, AQB-LL400
500 Volts Ac
400 Amperes Maximum, 150,000,
100,000 Amperes I.C., Respectively

AB DE-ION® Circuit Breakers for Naval Shipboard Use



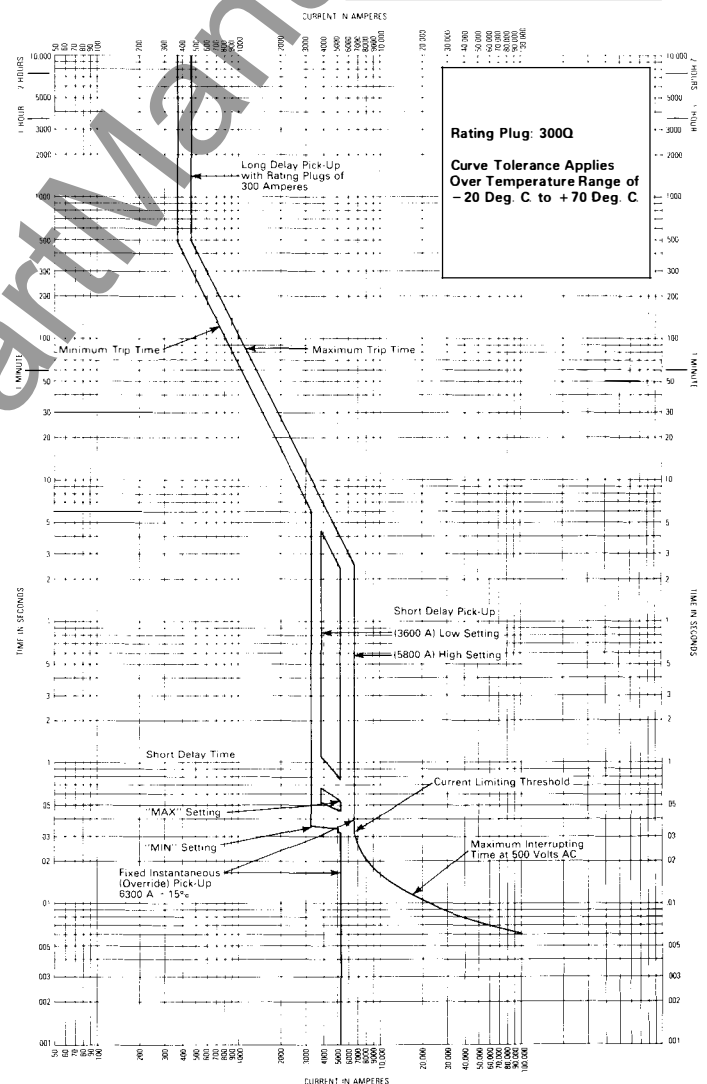
Navy Type AQB-L400QS Circuit Breaker



Time-Current Curves for AQB-L400QM Circuit Breaker with 250 Ampere Rating Plug



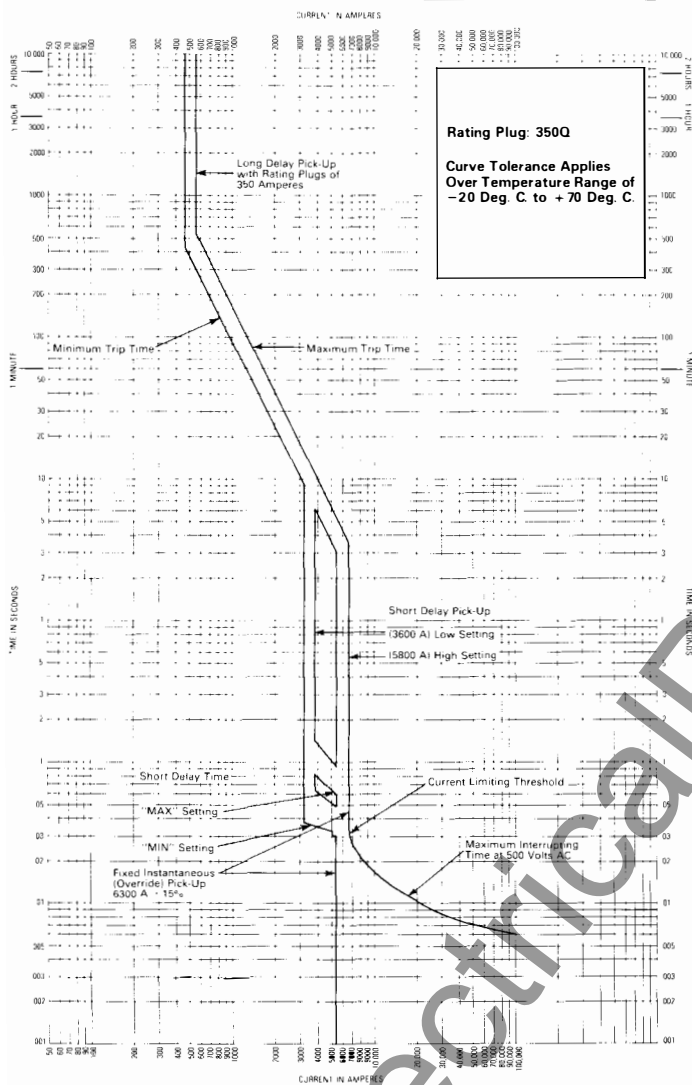
Navy Type AQB-L400QS Circuit Breaker



Time-Current Curves for AQB-L400QM Circuit Breaker with 300 Ampere Rating Plug



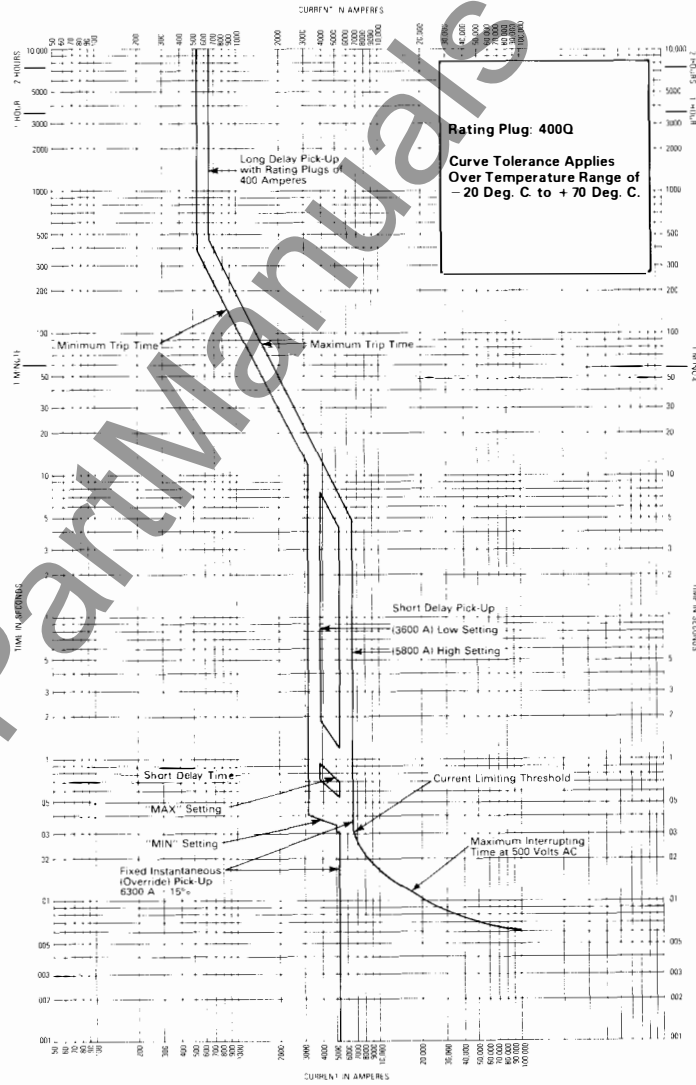
Navy Type AQB-L400QS Circuit Breaker



Time-Current Curves for AQB-L400QF Circuit Breaker with 350 Ampere Rating Plug



Navy Type AQB-L400QS Circuit Breaker



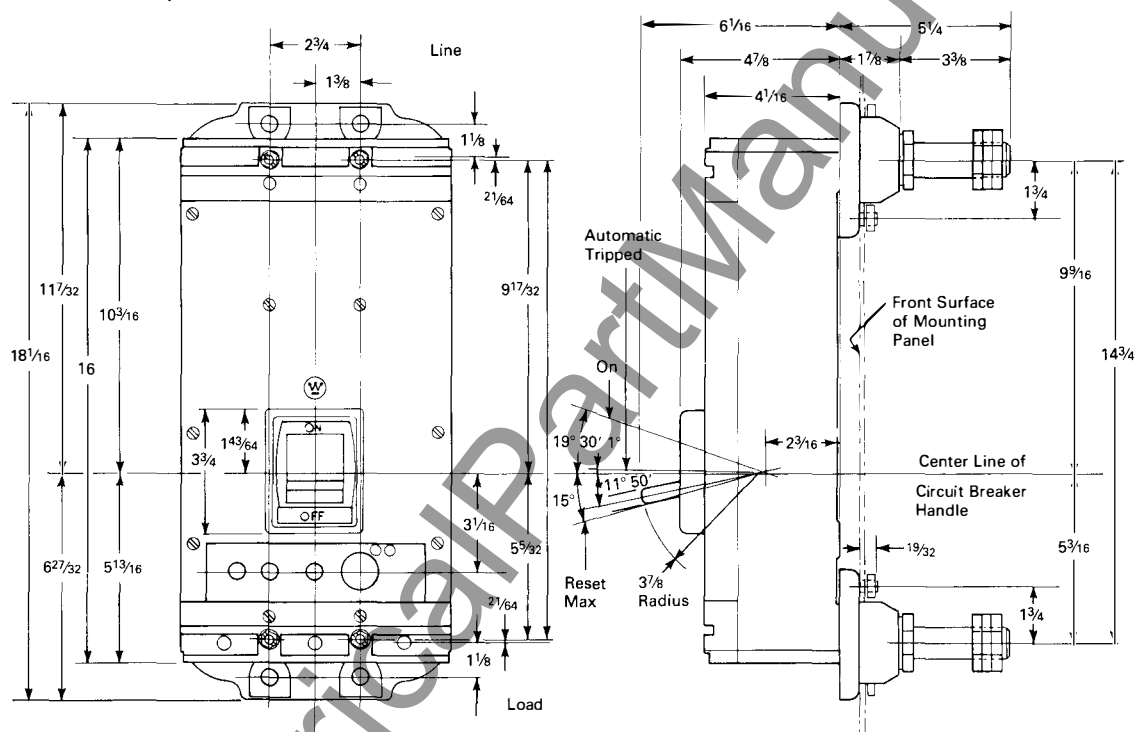
Time-Current Curves for AQB-L400QF Circuit Breaker with 400 Ampere Rating Plug

April 1991
New Information
Mailed to: E, C/29-200A

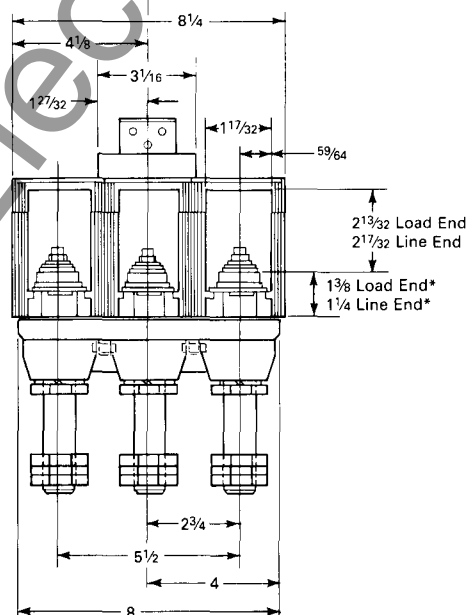
Types AQB-L400, AQB-LL400
500 Volts Ac
400 Amperes Maximum, 150,000,
100,000 Amperes I.C., Respectively

AB DE-ION® Circuit Breakers for Naval Shipboard Use

Outline Dimension AQB-L400, AQB-LL400



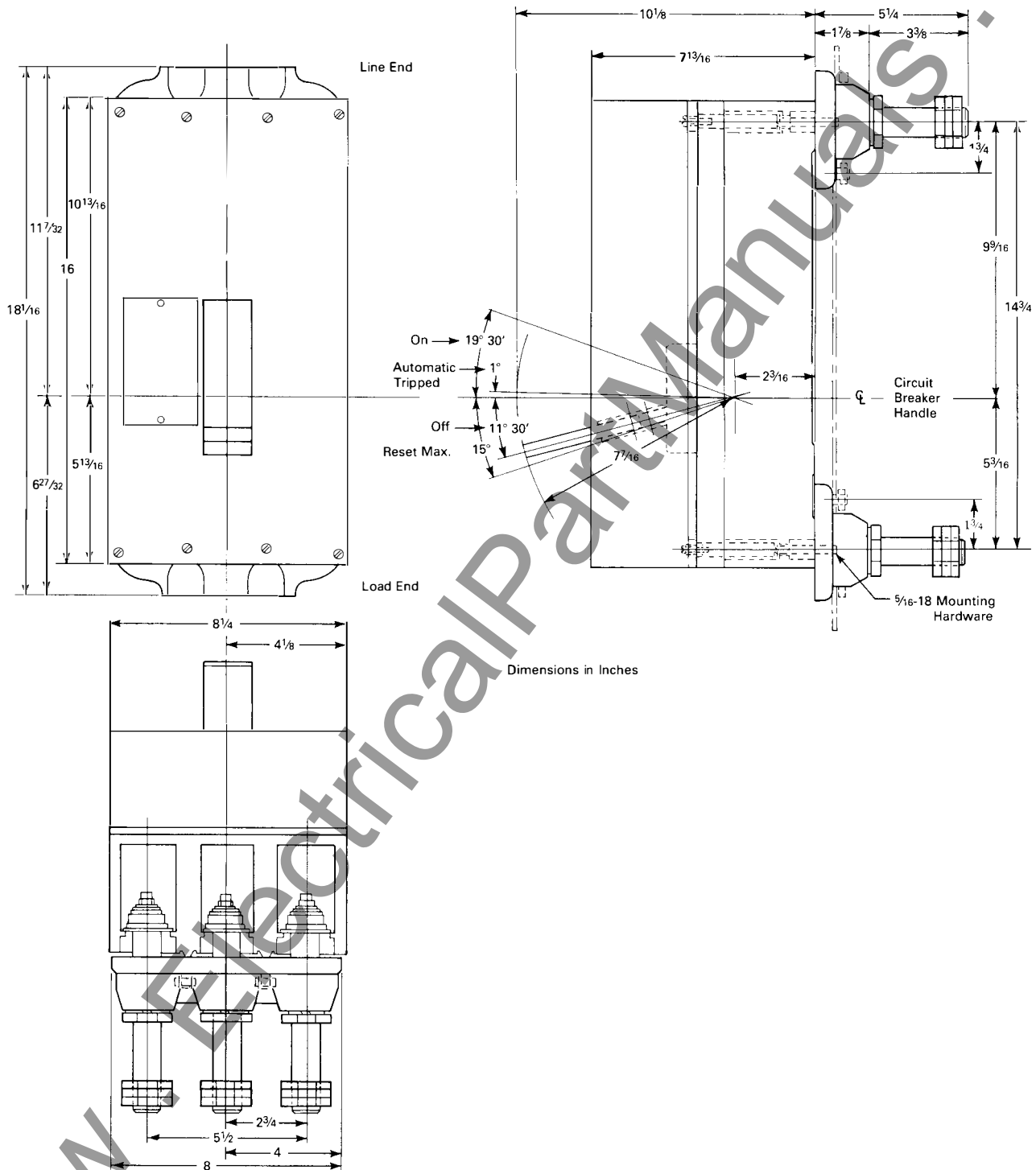
Dimensions in Inches



*Conductor Height for Front Connection



Outline AQB-L400, AQB-LL400 with Motor Operator



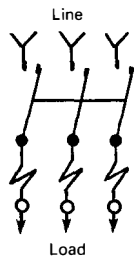


April 1991
New Information
Mailed to: E, C/29-200A

Types AQB-L400, AQB-LL400
500 Volts Ac
400 Amperes Maximum, 150,000,
100,000 Amperes I.C., Respectively

AB DE-ION® Circuit Breakers for Naval Shipboard Use

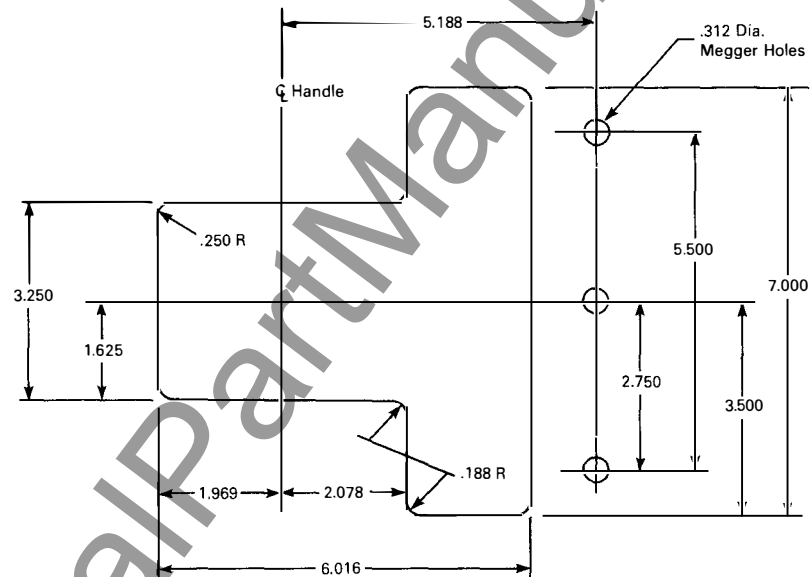
Wiring Diagrams



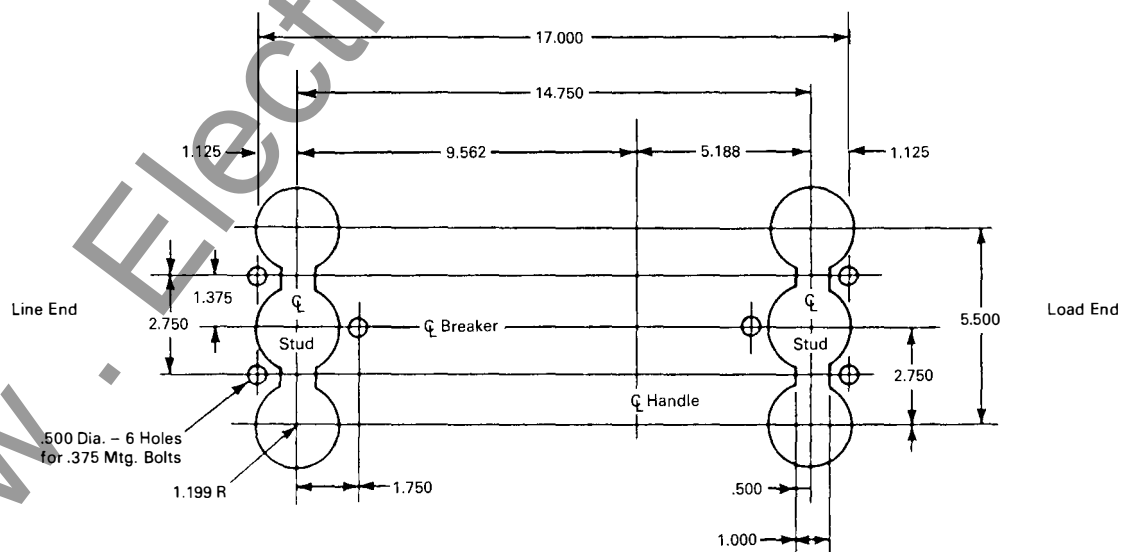
AQB Breaker
With Overcurrent and
Short Circuit Trip
Protection

For 2 Pole Breakers
Use Two Outside Poles

Front Sheet Template



Drilling Plan for Mounting Panel



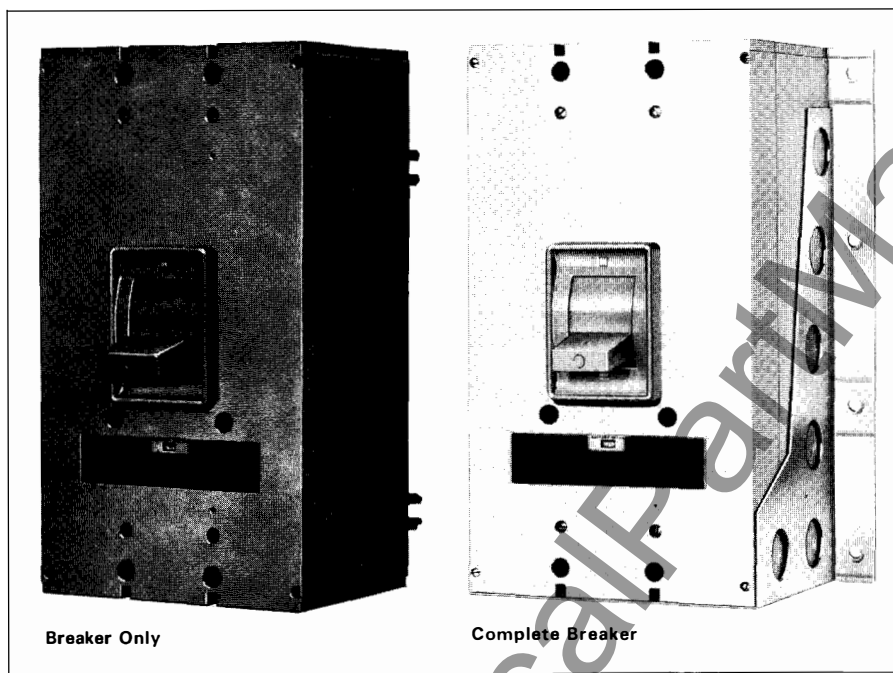




April 1991
Supersedes Technical Data 29-220,
pages 39-40, dated August 1981 and
Supplement to Technical Data 29-220,
page .01, dated May 14, 1979
Mailed to: E, C/29-200A

Types AQB-A1601, NQB-A1601
500-1600 Amperes; 500 Volts, 60 Hz Ac,
75,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use



AQB-A1601 and NQB-A1601
Navy Breakers

Note: AQB-A1601 are sold for replace-
ment only. They are no longer on the
Navy Qualified Products List.

500-1600 Amperes, 500 Volts A-c, 60
Cycles Only, 3-Pole, 50°C Ambient
Interrupting Rating: 75,000 Amps. A-c
(Without Delayed Instantaneous)
50,000 Amps. A-c (With Delayed
Instantaneous)

Specification: MIL-C-17361

Class: Hi Shock MIL-S-901

Vibration: MIL-STD-167

Material and Workmanship: MIL-E-917

AQB-A1601 circuit breakers are designed
for installation in switchboards for protec-
tion of generators and feeder and branch
circuits.

A complete breaker consists of a breaker plus
mounting base and is available with numer-
ous attachments such as electrical operator,
shunt trip, undervoltage release and auxiliary
switches to perform varied auxiliary func-
tions.

Trip units for these breakers have an adjust-
able instantaneous trip and are listed with
and without delayed instantaneous trip for
system coordination.

NQB-A1601 Breakers have a continuous
rating of 1600 amperes. They are used only
as disconnects since they do not have an
automatic trip device.

Note: Breakers with ratings other than those
listed above are considered as special and
full descriptive data must be provided.

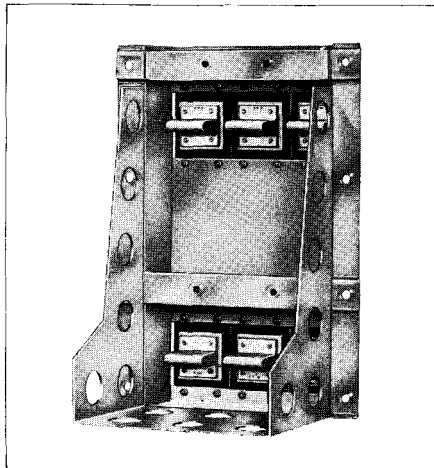
400 cycle breakers are not available.

List Prices See Price List 29-020 3 Pole, 500 Volts, 60 Cycles A-c

Type	Continuous Ampere Rating	Instantaneous Trip Setting A-c Amperes		Breaker Only, consists of:		Trip Unit Style Number	National Stock Number
		Low	High	Frame (Includes Stabs) Style Number	National Stock Number		
Without Delayed Instantaneous Trip							
AQB 600X	2000	6000		372D522G02	5925-01-105-4401	372D523G01	.....
AQB 600XM	4000	12000		372D522G02	5925-01-105-4401	372D523G03	.....
AQB 800X	2000	6000		372D522G02	5925-01-105-4401	372D523G07	.....
AQB 1000X	2000	6000		372D522G02	5925-01-105-4401	372D524G03	.....
AQB 1200X	2000	6000		372D522G02	5925-01-105-4401	372D524G05	.....
AQB 1400X	4000	12000		372D522G02	5925-01-105-4401	372D524G07	.....
AQB 1600X	4000	12000		372D522G02	5925-01-105-4401	372D524G09	5925-00-406-6131
NQB 1600	.....	.....		372D522G02	5925-01-105-4401	372D524G10	.....
With Delayed Instantaneous Trip (XT1 – Min. Time Delay .0417 – .0458 Sec.)							
AQB 500XT1	2000	6000		372D522G02	5925-01-105-4401	374D211G01	.....
AQB 800XT1	2000	6000		372D522G02	5925-01-105-4401	374D211G07	.....
AQB 1000XT1	2000	6000		372D522G02	5925-01-105-4401	374D212G03	.....
AQB 1200XT1	2000	6000		372D522G02	5925-01-105-4401	374D212G05	5925-00-102-6086
AQB 1600XT1	4000	12000		372D522G02	5925-01-105-4401	374D212G09	5925-00-727-7574
With Delayed Instantaneous Trip (XT2 – Max. Time Delay .0708 – .0750 Sec.)							
AQB 500XT2	2000	6000		372D522G02	5925-01-105-4401	374D221G01	.....
AQB 800XT2	2000	6000		372D522G02	5925-01-105-4401	374D221G07	.....
AQB 1200XT2	2000	6000		372D522G02	5925-01-105-4401	374D222G05	5925-00-727-7555
AQB 1600XT2	4000	12000		372D522G02	5925-01-105-4401	374D222G09	5925-00-103-4248



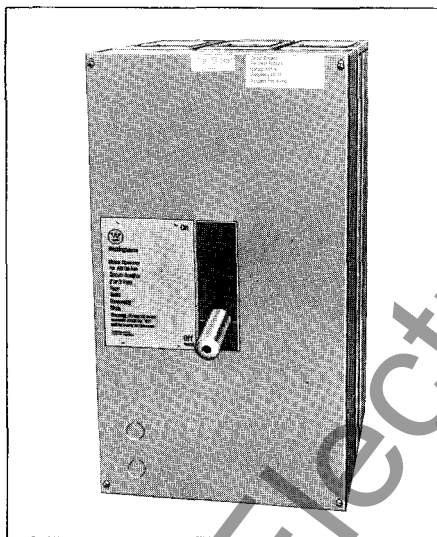
Mounting Base^①



For switchboard mounting. Includes back connectors for switchboard bus and male stabs to engage breaker. Matching stabs are supplied with breaker frame.

Style Number: 373D307G02

Electrical Operator^①



Mounts to front of breaker for remote operation. 450 volt Ac rating utilizes a transformer in conjunction with a 120 volt motor. If automatic reset is desired, order the circuit breaker with optional Automatic Reset Switch (See Optional Additions)

Rating	Style Number	National Stock Number
120 V A-c	1371D38G06	None
450 V A-c	1371D38G08	Assigned

Optional Additions^①

Shunt Trip^②: Mounts in right pole only. Has momentary rating only; coil leads must be wired in series with 1A contact of auxiliary switch.

Undervoltage Release^②: Mounts in right pole only.

Auxiliary Switch: Mounts in left pole only. 4 contacts, any combination of A's and B's, (supplied as 2A and 2B unless specified) 8 contacts, any combination of A's and B's, (supplied as 4A and 4B unless specified)

Automatic Reset Switch

For use with motor operator when an automatic reset function is required. Factory installed only.

Cable Connector: Mounts to bus connector for cable connection. Each lug accepts four cables, 600 MCM max. 1 lug required per bus connector.

Style Number: 505C706G03

Fungus, Moisture Resistant Treatment:

(JAN-C-173 or MIL-V-173): If specified, contact Westinghouse. External parts are coated; trip units are not treated.

Drawings

Master plan: 900J442

Sheet 1 of 4: Breaker Only and Wiring diagrams

Sheet 2 of 4: Trip Unit, Curves and Attachments

Sheet 3 of 4: Mounting Base and Cable Connectors

Sheet 4 of 4: Motor Operator

Individual Reproductions: When required, reproductions of sheets 1 thru 4 of master plan 900J442 can be ordered as follows:

Type Reproduction

Vellum
Prints (Paper)

Technical Manual: NAVSHIPS No. 0962-014-5000. This booklet per MIL-M-15071. When required, order BVR-TM-576.

Dimensions: Pages 53, 54, 55.

Characteristic Curves: Pages 56, 57.

^① Can be field mounted.

^② Breaker can be supplied with either shunt trip or undervoltage release, but not both.

Net Weights

Description	Weight, Lbs.
Breaker Only	
AQB	151
NQB	148
Breaker Frame (AQB and NQB)	128
Trip Unit	
AQB	23
NQB	20
Mounting Base Only	75
Electrical Operator, 115 Volt	27
Electrical Operator, 450 Volt	35
Shunt Trip	$\frac{3}{4}$
Undervoltage Release	1 $\frac{1}{4}$
Auxiliary Switch	1 $\frac{1}{4}$
Cable Connector	3

Ordering Information

When ordering Westinghouse Navy circuit breakers consult the check list below to make sure you have provided correct information. You should specify:

1. Quantity, Westinghouse style number and National stock number of:

- Breaker frame and trip unit.
- Mounting base.
- Spare breakers or trip units. (Usually one required for each ten units or fraction thereof of each current rating.)
- Instruction books.

2. Shipment

Specify transportation means, method of packaging and preservation and required shipping date.

3. Drawings

Specify quantity of outline or master plan drawings required.

4. Inspection

Indicate whether Government Source inspection is required at factory prior to shipment.



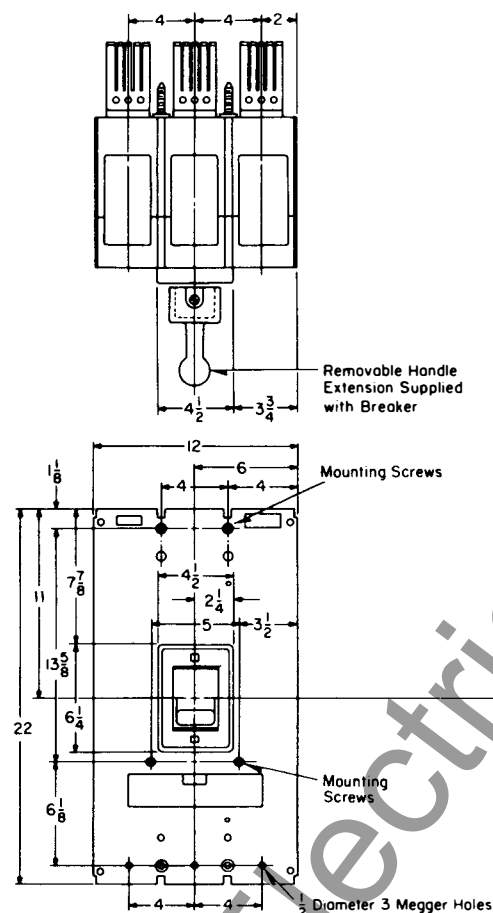
April 1991
Supersedes Technical Data 29-220,
pages 41-42, dated October 1978
Mailed to: E, C/29-200A

Types AQB-A1601, NQB-A1601
500-1600 Amperes; 500 Volts, 60 Hz. Ac.
75,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB and NQB Circuit Breaker Frame Outline Dimensions

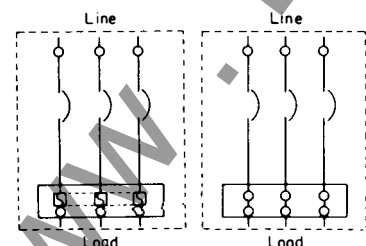
NQB—Same except for trip unit nameplate.



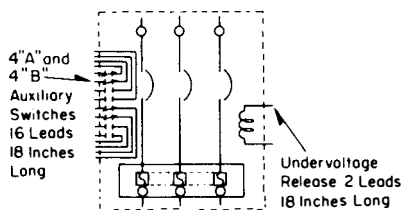
Wiring Diagrams

AQB

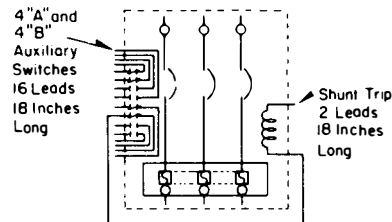
NQB



When undervoltage release and auxiliary switches are provided



When shunt trip and auxiliary switch are provided



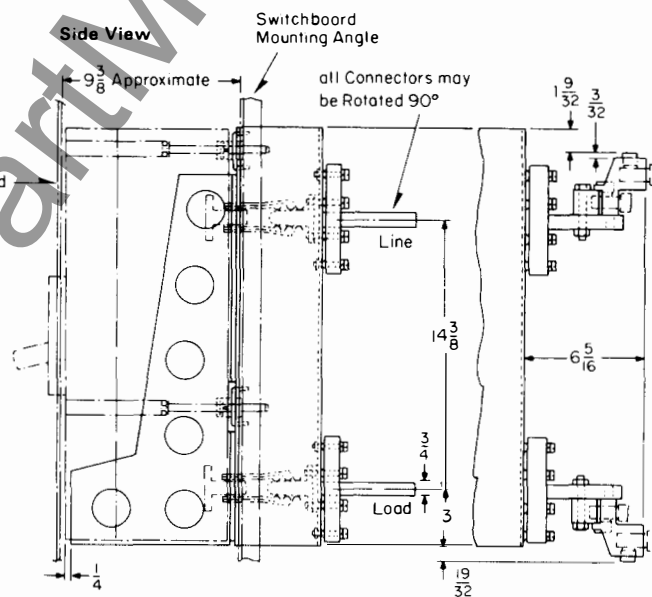
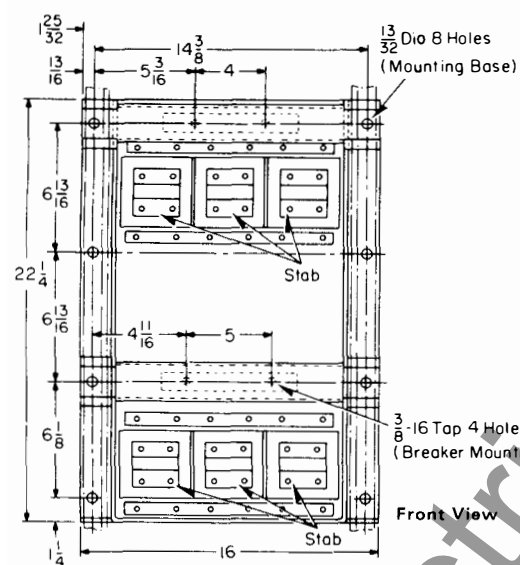
Note: The auxiliary switch must be used with each shunt trip. Connect one side of shunt trip in series with "A" contact (closed when breaker is closed) of auxiliary switch when connecting to power supply.

Top View

Switchboard Mounting Angle

Switchboard Back Panel

Dimensions: $2\frac{1}{2}$, $\frac{3}{4}$, 4, 1, 3, $\frac{1}{2}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{7}{16}$ Dia, $\frac{1}{16}$, $\frac{5}{8}$, $\frac{1}{4}$, $13\frac{5}{8}$, 9, $25\frac{5}{32}$, $12\frac{7}{16}$.



Technical drawing of the front view of a rectangular mounting base. The drawing shows a rectangular plate with a central rectangular hole. The outer dimensions are 14 $\frac{3}{8}$ inches in width and 22 $\frac{1}{2}$ inches in height. The inner dimensions of the central hole are 7 $\frac{3}{16}$ inches in width and 12 $\frac{7}{8}$ inches in height. The thickness of the plate is $\frac{1}{8}$ inch. The distance from the top edge to the top edge of the hole is 6 $\frac{13}{16}$ inches. The distance from the bottom edge to the bottom edge of the hole is 6 $\frac{1}{8}$ inches. The distance from the left edge to the left edge of the hole is 6 $\frac{1}{16}$ inches. The distance from the right edge to the right edge of the hole is 6 $\frac{1}{16}$ inches. There are four mounting holes, one in each corner. The diameter of each hole is $\frac{13}{32}$ inch. The outline of the mounting base is indicated by a dashed line.

The diagram shows a cross-section of a 150 kV busbar. Key dimensions and features include:

- Top End of Breaker:** Indicated by an arrow pointing to the top edge.
- Radius:** Indicated by an arrow pointing to the rounded corner of the busbar.
- 3 Holes for Megger Test:** Indicated by an arrow pointing to three small circles at the bottom.
- Dimensions:**
 - Top horizontal segments: $3\frac{21}{32}$, $4\frac{11}{16}$, and $2\frac{11}{32}$.
 - Right vertical segments: $7\frac{25}{32}$, $6\frac{7}{16}$, and $6\frac{21}{32}$.
 - Bottom horizontal segments: 4 and 8 .
 - Bottom vertical segment: $\frac{5}{16}$ (labeled as "Test Diameter").
- Center of Breaker:** Indicated by a vertical line passing through the center.

With cable connectors style 505C706G03
lug capacity—four 600 MCM cables per lug

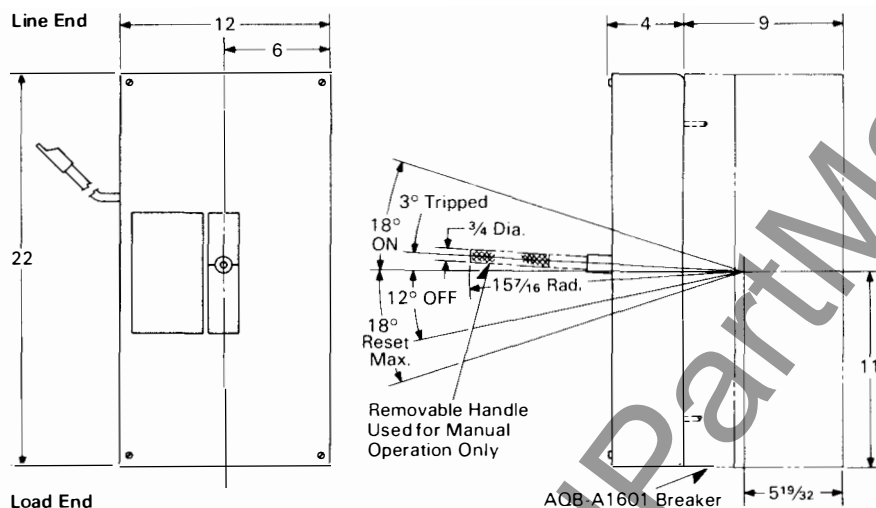


April 1991
Supersedes Technical Data 29-220,
pages 43-44, dated August 1981
Mailed to: E, C/29-200A

Types AQB-A1601, NQB-A1601
500-1600 Amperes; 500 Volts, 60 Hz. Ac,
75,000 Amperes I.C.

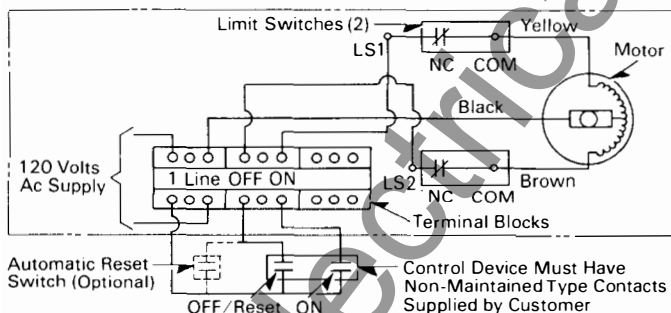
AB DE-ION® Circuit Breakers for Naval Shipboard Use

Electrical Operator Outline (Dimensions in Inches)

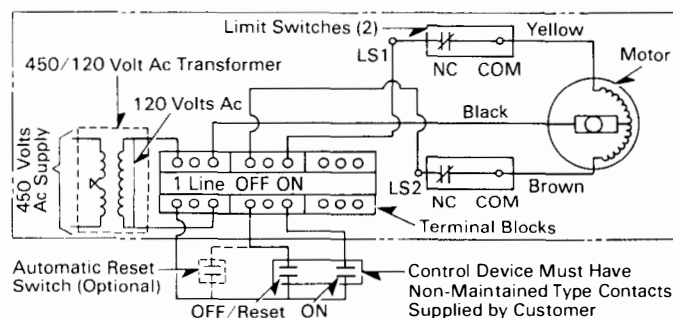


Wiring Diagrams

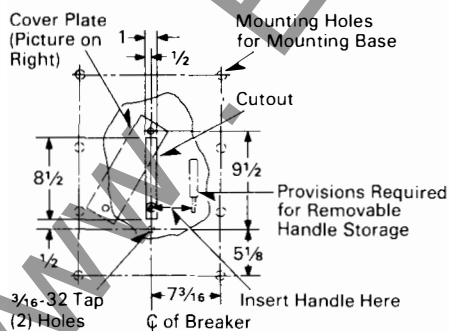
For 120 Volt Ac Electrical Operator



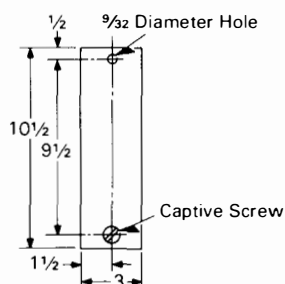
For 450 Volt Ac Electrical Operator



Switchboard Door Cutout For Electrically Operated Breaker



Gasketed Cover For Switchboard Door Cutout (Gasket Cemented to Cover)



Electrical Operator

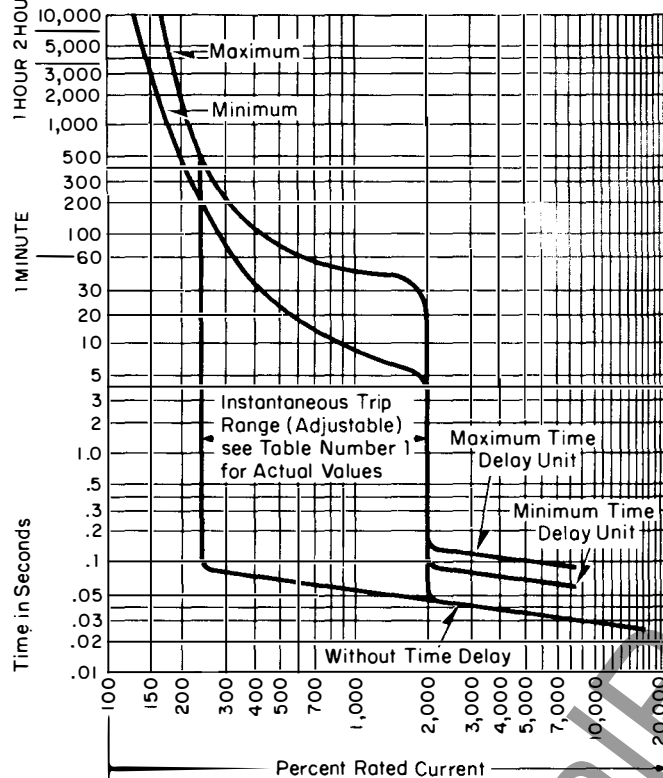
Nominal Voltage	Voltage Range	Style Number
120 Volts Ac	90-130	1371D38G01
450 Volts Ac ①	360-500	1371D38G03

① A Transformer is Provided in The Operator Frame.



Characteristic Curves

AQB-A160I Standard Breaker



Percent of Trip
Element Rating

Tripping Time

600	20 to 60 seconds
225	Less than 1 hour
150	1 hour or more

Operating Characteristics

Trip unit rating 500-1600 amperes 50°C ambient. Cold start.
60 cycles.

Expanded Time Delay Curve

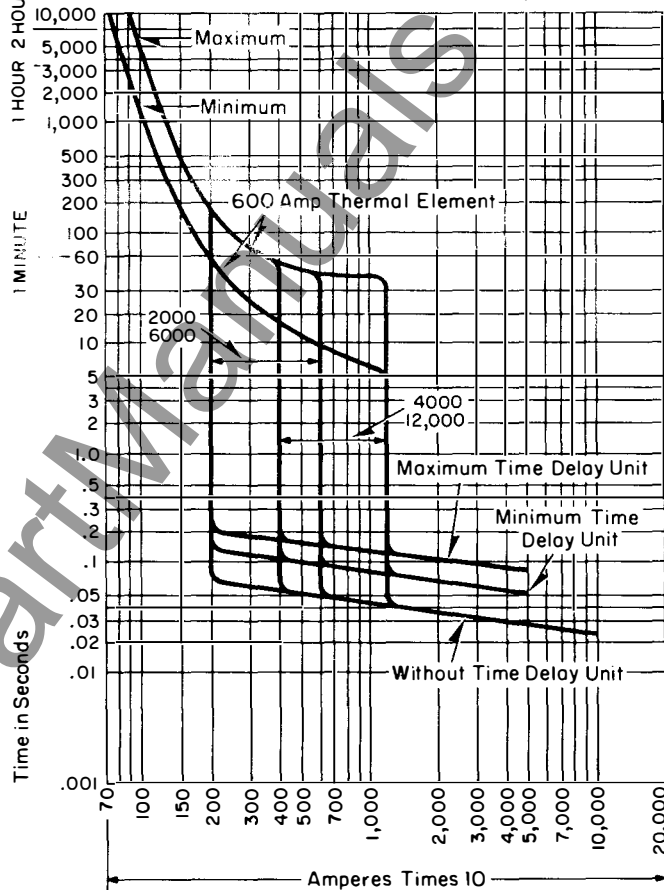


Table 1 Instantaneous Trip Setting in Amperes $\pm 10\%$

Amperes Rating	Low	2	3	4	High
500XT1	2000	3600	4000	4800	6000
500XT2	2000	3600	4000	4800	6000
600X	2000	3600	4000	4800	6000
600XM	4000	7500	8000	10000	12000
800X	2000	3600	4000	4800	6000
800XT1	2000	3600	4000	4800	6000
800XT2	2000	3600	4000	4800	6000
1000X	2000	3600	4000	4800	6000
1000XT1	2000	3600	4000	4800	6000
1200X	2000	3600	4000	4800	6000
1200XT1	2000	3600	4000	4800	6000
1200XT2	2000	3600	4000	4800	6000
1400X	4000	7500	8000	10000	12000
1600X	4000	7500	8000	10000	12000
1600XT1	4000	7500	8000	10000	12000
1600XT2	4000	7500	8000	10000	12000

Reproduced From Drawing 900J442 Sheet 2 of 4

Westinghouse Electric Corporation
Distribution and Control Business Unit
Electrical Components Division
Pittsburgh, Pennsylvania, U.S.A. 15220

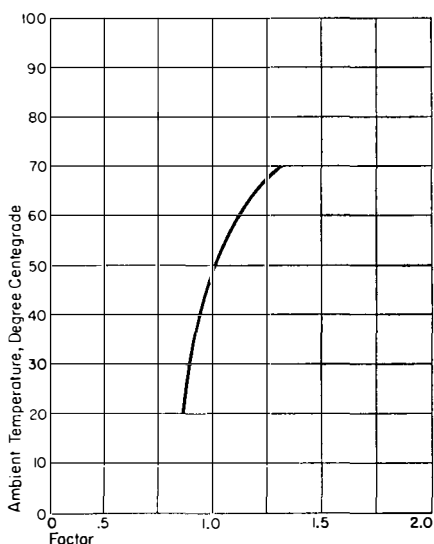


April 1991
Supersedes Technical Data 29-220,
pages 45-46, dated October 1978
Mailed to: E, C/29-200A

Types AQB-A1601, NQB-A1601
500-1600 Amperes; 500 Volts, 60 Hz. Ac.,
75,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

Characteristic Curves, Continued Derating Curve



Reproduced From Drawing 900J442 Sheet 2 of 4

Factor for change in current rating of circuit breaker with change in ambient temperature.

Application

1. Known Conditions: (A) Ambient
(B) Load Current

To determine the trip unit rating to be used when the load current and ambient are known, multiply the load current by the factor obtained from this curve for the known ambient. The result will be the ideal trip unit rating, however, since trip units are furnished with only the standard ratings as per Navy Specs, select the standard trip unit whose rating is equal to or one rating higher than the ideal rating.

2. Known Conditions: (A) Ambient
(B) Trip Unit Rating

To determine the load current on which a trip unit may be used when ambient is known, divide the trip unit rating by the factor obtained from this curve for the known ambient. The result will be the max. load current on which the trip unit should be used.





July 1991
Supersedes Technical Data 29-220,
pages 29-30, dated April 1991
Mailed to: E, D, C/29-200A

Types AQB-A250, NQB-A250
250 Volts Dc, 500 Volts Ac
250 Amperes Maximum, 20,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-A250 and NQB-A250 Breakers

Specification: MIL-C-17361

125-250 Amperes

500 Volts Ac and 250 Volts Dc

Two and Three-Pole

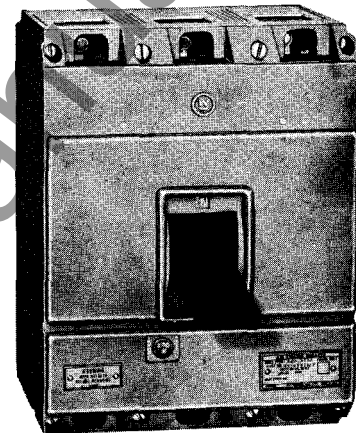
Interrupting Ratings

20,000 Amps Ac and 15,000 Amps Dc

AQB-A250 circuit breakers are used primarily to protect feeder circuits, however, those followed by "NM" in the price table have higher magnetic settings to allow for motor starting. Breakers with settings specifically for use with generators are designated "NG" in the price table.

These breakers are available with interchangeable trip units in ratings of 125, 150, 175, 225 and 250 amperes. The non-automatic NQB-A250 carries a 250 ampere rating and has copper conductors replacing the trip unit. Special generator breakers have trip units rated at 100, 160, and 250 amperes.

AQB-A250 breakers can be ordered with undervoltage release devices, auxiliary switches and shunt trip attachments complete with auxiliary switch. These attachments are also easily installed in the field.



List Prices See Price List 29-020

Cont. Ampere Rating	Inst. Trip Setting – Amps				Complete Breaker ^①		Breaker Frame Only ^①		Trip Unit Only	
	Ac		Dc		Style Number	National Stock No.	Style Number	National Stock No.	Style Number	National Stock No.
	Low	High	Low	High						
Two-Pole 500 Volts Ac, 250 Volts Dc										
125-N	650	1300	650	1300	313C682G03	5925-01-233-6525	452D370G01	5925-00-796-4371	452D371G03	.....
125-NM	1950	3900	2250	4100	313C682G04	.....	452D370G01	5925-00-796-4371	452D371G04	.....
150-N	650	1300	650	1300	313C682G05	.....	452D370G01	5925-00-796-4371	452D371G05	5925-00-793-6865
150-NM	1950	3900	2250	4100	313C682G06	.....	452D370G01	5925-00-796-4371	452D371G06	.....
175-N	650	1300	650	1300	313C682G07	.....	452D370G01	5925-00-796-4371	452D371G07	5925-00-175-5058
175-NM	1950	3900	2250	4100	313C682G08	.....	452D370G01	5925-00-796-4371	452D371G08	.....
225-N	650	1300	650	1300	313C682G09	.....	452D370G01	5925-00-796-4371	452D371G09	5925-00-064-7834
225-NM	1500	3000	1770	3550	313C682G10	.....	452D370G01	5925-00-796-4371	452D371G10	.....
250-N	650	1300	650	1300	313C682G11	.....	452D370G01	5925-00-796-4371	452D371G11	.....
250-NM	1700	3400	1850	3800	313C682G12	.....	452D370G01	5925-00-796-4371	452D371G12	.....
250 ^②	Non-Auto	Non-Auto	Non-Auto	Non-Auto	313C682G31	.....	452D370G03	.....	29B2710G05	.....
Two Pole 500 Volts Ac, 250 Volts Dc Generator Circuit Breaker Applications										
100-NG	1175	2350	.....	.....	313C682G13	.....	452D370G01	5925-00-796-4371	452D371G13	.....
160-NG	1950	3900	.....	.....	313C682G14	.....	452D370G01	5925-00-796-4371	452D371G14	.....
250-NG	.....	.....	650	1300	313C682G15	.....	452D370G01	5925-00-796-4371	452D371G15	.....
Three-Pole 500 Volts Ac, 250 Volts Dc										
125-N	650	1300	650	1300	313C682G18	5925-00-248-1425	452D370G02	5925-00-789-3718	452D371G18	5925-00-795-4958
125-NM	1950	3900	2250	4100	313C682G19	5925-01-031-9909	452D370G02	5925-00-789-3718	452D371G19	5925-00-839-0289
150-N	650	1300	650	1300	313C682G20	5925-01-229-4448	452D370G02	5925-00-789-3718	452D371G20	5925-00-795-4957
150-NM	1950	3900	2250	4100	313C682G21	.....	452D370G02	5925-00-789-3718	452D371G21	5925-00-839-0290
175-N	650	1300	650	1300	313C682G22	5925-01-235-0710	452D370G02	5925-00-789-3718	452D371G22	5925-00-796-4439
175-NM	1950	3900	2250	4100	313C682G23	5925-01-192-3985	452D370G02	5925-00-789-3718	452D371G23	.....
225-N	650	1300	650	1300	313C682G24	5925-01-173-2587	452D370G02	5925-00-789-3718	452D371G24	5925-00-839-0291
225-NM	1500	3000	1770	3550	313C682G25	5925-01-210-5267	452D370G02	5925-00-789-3718	452D371G25	5925-00-839-0292
250-N	650	1300	650	1300	313C682G26	.....	452D370G02	5925-00-789-3718	452D371G26	5925-00-839-0293
250-NM	1700	3400	1850	3800	313C682G27	5925-01-272-3805	452D370G02	5925-00-789-3718	452D371G27	5925-00-690-7568
250 ^②	Non-Auto	Non-Auto	Non-Auto	Non-Auto	313C682G36	.....	452D370G04	5925-00-831-8801	29B2710G06	5925-00-831-8800
Three-Pole 500 Volts Ac, 250 Volts Dc Generator Circuit Breaker Applications										
100-NG	1175	2350	.....	.....	313C682G28	5925-01-080-2226	452D370G02	5925-00-789-3718	452D371G28	5925-00-852-7809
160-NG	1950	3900	.....	.....	313C682G29	5925-01-104-4625	452D370G02	5925-00-789-3718	452D371G29	5925-00-795-4956
250-NG	.....	.....	650	1300	313C682G30	.....	452D370G02	5925-00-789-3718	452D371G30	.....

Note: Breakers with ratings other than those given on this page are considered as special and full description data must be provided.

^① Styles listed include slip-type connectors for rear connections. Order front terminal connectors separately if required; see page 30. No additional charges for front connectors ordered with breakers or frames.

^② Type NQB-A250 non-automatic.



AQB-A250 and NQB-A250 Breakers, Continued

List Prices See Price List 29-020

Cont. Ampere Rating	Instantaneous Trip Setting in Amperes ^①		Complete Breaker ^②		Breaker Frame Only ^②		Trip Unit Only	
	Low	High	Style Number	National Stock No.	Style Number	National Stock No.	Style Number	National Stock No.
400 Cycle, Two-Pole, 500 Volts Ac								
125-NH	910	1560	315C574G03	.....	452D370G01	5925-00-796-4371	457D446G03	.....
150-NH	910	1560	315C574G05	.....	452D370G01	5925-00-796-4371	457D446G05	.....
175-NH	910	1560	315C574G07	.....	452D370G01	5925-00-796-4371	457D446G07	.....
225-NH	910	1560	315C574G09	.....	452D370G01	5925-00-796-4371	457D446G09	.....
250-NH	910	1560	315C574G11	.....	452D370G01	5925-00-796-4371	457D446G11	.....
400 Cycle, Two-Pole, 500 Volts Ac Generator Circuit Breaker Applications								
100-NGH	2020	3420	315C574G13	.....	452D370G01	5925-00-796-4371	457D446G13	.....
160-NGH	2020	3420	315C574G14	.....	452D370G01	5925-00-796-4371	457D446G14	5925-00-758-6227
250-NGH	2520	4200	315C574G15	.....	452D370G01	5925-00-796-4371	457D446G15	.....
400 Cycle, Three-Pole, 500 Volts Ac								
125-NH	910	1560	315C574G18	.....	452D370G02	5925-00-789-3718	457D446G18	5925-00-803-5491
150-NH	910	1560	315C574G20	5925-01-075-8931	452D370G02	5925-00-789-3718	457D446G20	5925-00-803-5488
175-NH	910	1560	315C574G22	5925-01-100-4027	452D370G02	5925-00-789-3718	457D446G22	5925-00-899-9904
225-NH	910	1560	315C574G24	5925-01-193-6055	452D370G02	5925-00-789-3718	457D446G24	5925-01-193-6056
250-NH	910	1560	315C574G26	.....	452D370G02	5925-00-789-3718	457D446G26	5925-01-149-4269
400 Cycle, Three-Pole, 500 Volts Ac Generator Circuit Breaker Applications								
100-NGH	2020	3420	315C574G28	.....	452D370G02	5925-00-789-3718	457D446G28	5925-00-238-5198
160-NGH	2020	3420	315C574G29	.....	452D370G02	5925-00-789-3718	457D446G29	5925-00-803-5489
250-NGH	2520	4200	315C574G30	.....	452D370G02	5925-00-789-3718	457D446G30	.....

Switchboard Mounting

Complete breakers and frames include mounting hardware. Female slip connectors are mounted in breaker base to plug onto stud projections of terminal mounting block assemblies. Order one mounting block assembly for each end of breaker.

Description	Style Number	National Stock No.
One Stud Assembly complete with 4 nuts	1631 443	.....
Terminal Mtg. Block (No Studs)	313C681G01	.....
Mounting Block and Stud Set (3 Studs)	313C680G02	.....
	(Net Weight - 2½ Lbs.)	.....

Front Connected Breakers

For connections made at front terminals, pressure-type lugs required. If specified on same order, connectors furnished no charge. One connector per terminal. Select below.

Cable Range	Amps	Description	Style Number	National Stock No.
N40-N75	125	Solderless Connector	20B3055H14	.....
N100-N125	150-175		20B3055H15	.....
N150-N200	250		20B3055H16	.....

**Kit to Convert AQB Frame to NQB
Breaker**

Poles	Style Number	National Stock No.	Net Weight
3	29B2710G06	.....	½ Lb.

① For 400 cycle breakers with higher instantaneous trip ratings, refer to Westinghouse.

② Styles listed include slip-type connectors for rear connections. Order front terminal connectors separately if required. No additional charges for front connectors ordered with breakers or frames.

Westinghouse Electric Corporation
Distribution and Control Business Unit
Electrical Components Division
Pittsburgh, Pennsylvania, U.S.A. 15220



July 1991

Supersedes Technical Data 29-220,
pages 31-32, dated April 1991

Mailed to: E, D, C/29-200A

Types AQB-A250, NQB-A250

250 Volts Dc, 500 Volts Ac

250 Amperes Maximum, 20,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-A250 and NQB-A250 Breakers, Continued

Additions

Handle Lock: If required, order style 1720101. One furnished no charge per 10 breakers ordered, when requested. Net wt., .15 lb.

Mechanical Interlock: If mechanical interlock (switchboard use) is desired for a pair of breakers, order by description. (Not submitted for Navy approval.)

Auxiliary Switch: The most commonly used, when required, is style 452D379G02, national stock number 5930-00-732-8401. Internally mounted switch is used to open or close control circuits as breaker operates and is provided with "A" and "B" contacts. "A" contact is normally closed when breaker is closed and open when breaker is open; "B" is normally open when breaker is closed and closed with breaker open. It has the following rating at given voltages: 15 amp - 125, 250 or 460 volts Ac; ½ amp-125 volts Dc; ¼ amp-250 volts Dc. Net weight, .17 lb.

Contact Westinghouse for other ratings or types of mounting.

Fungus - Moisture - Resistant Treatments: (JAN-T-152; JAN-C-173 or MIL-V-173): If specified, contact Westinghouse. External parts are coated; trip units are not treated.

Technical Manual - NAVSHIPS No. 362-2164: This booklet per MIL-M-15071. When required, order BVR-TM-379A.

Shunt Trip: Shunt trip attachments for tripping the breaker electrically from a remote point are listed in table below. Shunt trips have momentary rating only and for protection must be connected in series with auxiliary switch. An Auxiliary Switch is included in the shunt trip numbers shown below. Do not order separately. Net weight, .70 lb.

Nominal Voltage	Voltage Range	Style Number	National Stock No.
28 V Dc 115 V Ac	24- 32 90-130	452D377G05	5925-00-831-8808
120 V Dc 450 V Ac	90-130 360-500	452D377G07	5925-01-007-5836

Undervoltage Device: Automatically trips breaker when line voltage drops below 40 to 60% of normal. After undervoltage coil has dropped out and tripped breaker on reduced voltage, it automatically resets by breaker action. (If undervoltage coil is energized to 80% of normal). Select device below. Net weight, 1.12 lbs.

Nominal Voltage	Voltage Range	Pickup and Seal Volts (Minimum)	Dropcut Voltage	Style Number	National Stock Number
450 Ac, 60 Cycle	360-500	360	290 Max. 45 Min.	452D837G01	5925-00-920-3099
250 Dc	175-355	150	25 Min.	452D837G02	.....
33 Dc	30- 36	22	5 Min.	452D837G03	5950-00-790-4869

Individual Reproductions: When required, reproduction of master drawings, outline drawings and certification sheets can be ordered as follows:

Item	Description
1	Full size photolith tracing of master drawing on vellum
2	Outline and drilling plan on vellum
3	Certification data on vellum
4	Reproductions of items 1, 2, or 3

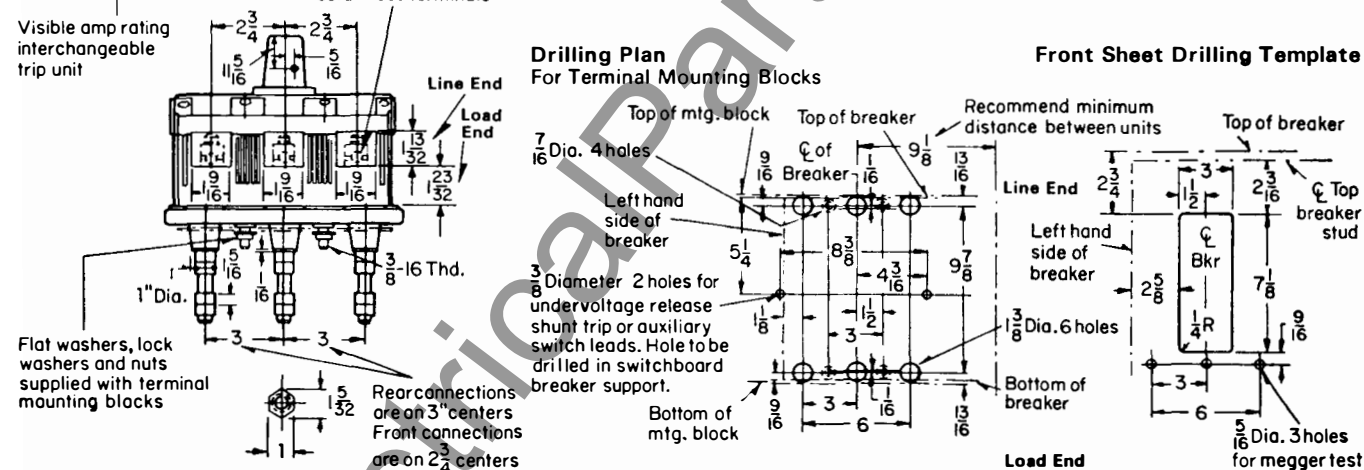
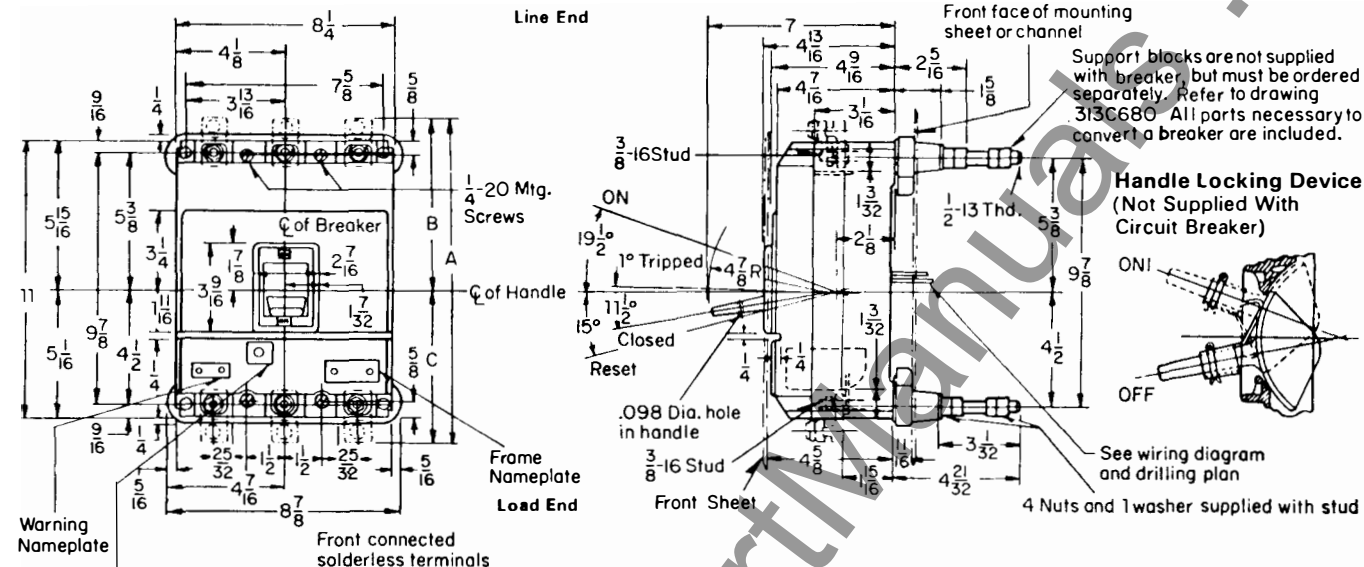
Drawings Available: Master drawing 900-J-376; front and rear connected breaker outline, drilling and wiring diagram 452-D-834.

Ordering Information: Page 4

Net Weight, Lbs.

AQB Complete, 3-Pole A250	20.50
NQB Complete, 3-Pole N250	17.50
3-Pole AQB, NQB Frame	17.00
AQB Trip Unit, 3-Pole	3.50

Outline Dimensions AQB-A250 Breaker

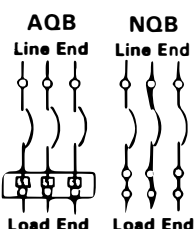


Front Connected Solderless Terminals Identification

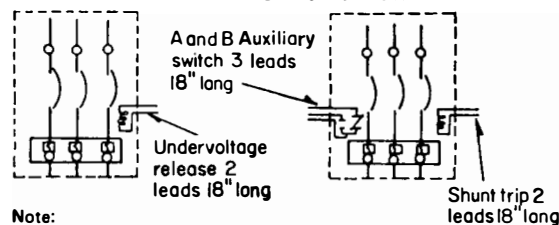
Style Number	Cable Range A MCM		B	C
	Max	Min		
20B3055H14	75	50	12 1/16"	6 7/32"
20B3055H15	125	100	13	6 1/16"
20B3055H16	200	150	13 3/16"	6 7/32"

Front Connected Terminals are not Supplied with Circuit Breaker

Wiring Diagrams



When Under-Voltage Release is Provided When Shunt Trip and Auxiliary Switch is Provided



Note: The auxiliary switch must be used with each shunt trip. Connect one side of shunt trip in series with "A" contact (Closed when breaker is closed) of auxiliary switch when connecting to power supply.



July 1991
Supersedes Technical Data 29-220,
pages 43-44, dated April 1991
Mailed to: E, D, C/29-200A

Types AQB-L400QF, AQB-L400QM;
150,000 Amperes I.C. and
AQB-LL400QS; 100,000 Amperes I.C.
250-400 Amperes; 500 Volts 60 Hz Ac

AB DE-ION® Circuit Breakers for Naval Shipboard Use

Mounting Block

Type	Westinghouse Style Number
Plug-in Mounting Block, Rear Connected, Complete (Required one per load or line end)	1230C81G01
Mounting Block, Molded Base Only (For mounting a front con- nected circuit breaker, or as a replacement part)	1230C81G05
Male Slip Connectors (Replacement part, three per kit)	1230C81G04
Front Connected Terminal (Required three per line or load end)	504C497G01

Auxiliary Switches

Type	Westinghouse Style Number
Auxiliary Switch 1a/1b 115-450 V Ac 2a/2b 115-450 V Ac 1a/1b 120 V Dc 2a/2b 120 V Dc 1a/1b 115-450 V Ac and 1a/1b 120 V Dc Combination	1220C86G01 1220C86G02 1220C86G05 1220C86G06 1220C86G07

Shunt Trip

Type	Westinghouse Style Number
Shunt Trip (Left-Pole only) (Includes built-in cutoff switch) 115 V Ac/28 to 120 V Dc 450 V Ac Only	1220C86G03 1220C86G04
Combination Shunt Trip and 1a/1b Auxiliary Switch (Left- Pole Only)	
115 V Ac/28-120 V Dc Shunt Trip and 115-450 V Ac Auxil- iary Switch	1220C86G08
115 V Ac/28-120 V Dc Shunt Trip and 120 V Dc Auxiliary Switch	1220C86G09
450 V Ac Shunt Trip and 115-450 V Ac Auxiliary Switch	1220C86G10
450 V Ac Shunt Trip and 120 V Dc Auxiliary Switch	1220C86G11

Undervoltage Release (Left-Pole Only)

UVR and Circuit Breaker must be ordered as
an integral unit

Type	Westinghouse Style Number
AQB-L400QF with 115 V Ac Undervoltage Release Mechanism	1230C83G15
AQB-L400QF with 450 V Ac* Undervoltage Release Mechanism	1230C83G16
AQB-L400QF with 120 V Dc Undervoltage Release Mechanism	1230C83G17
AQB-L400QF with 250 V Dc Undervoltage Release Mechanism	1230C83G18
AQB-L400QM with 115 V Ac Undervoltage Release Mechanism	1230C83G19
AQB-L400QM with 450 V Ac* Undervoltage Release Mechanism	1230C83G20
AQB-L400QM with 120 V Dc Undervoltage Release Mechanism	1230C83G21
AQB-L400QM with 250 V Dc Undervoltage Release Mechanism	1230C83G22
AQB-LL400QS with 115 V Ac Undervoltage Release Mechanism	1230C83G11
AQB-LL400QS with 450 V Ac* Undervoltage Release Mechanism	1230C83G12
AQB-LL400QS with 120 V Dc Undervoltage Release Mechanism	1230C83G13
AQB-LL400QS with 250 V Dc Undervoltage Release Mechanism	1230C83G14

*Using externally-mounted step-down transformer
supplied

Switchboard Mounting

Breaker frame includes mounting hardware.
Stud projections are mounted on the rear of
the breaker for plugging into female slip
connectors of terminal mounting block
assemblies.

Handle Lock (For shipboard maintenance
use only) order style number 1720101.

**Fungus - Moisture - Resistance Treat-
ments:** (JAN-T-152; JAN-C-173; MIL-V-173)
If specified contact Westinghouse. External
parts are coated.

Technical Manual: When required order
1240C33H01.

Portable Test Kit - Can be used to function-
ally test the breaker for overload and short
circuit, while breaker is mounted. When
required order catalog number STK2.

Individual Reproduction: When required
reproduction of outline drawings and certifi-
cation sheets can be ordered as follows:

Item	Description
1	Outline drawing and drilling plan on vellum
2	Certification data on vellum
3	Reproduction of items 1 and 2

Repair Parts:

Net Weight:

Item	Weight
Circuit Breaker	30 lbs.
Motor Operator	22 lbs.
Mounting Block	10 lbs.
Front Connected Terminals (Set of Three)	1 lb.-10¼ ozs.
Portable Test Kit	12 lb.-14¼ ozs.

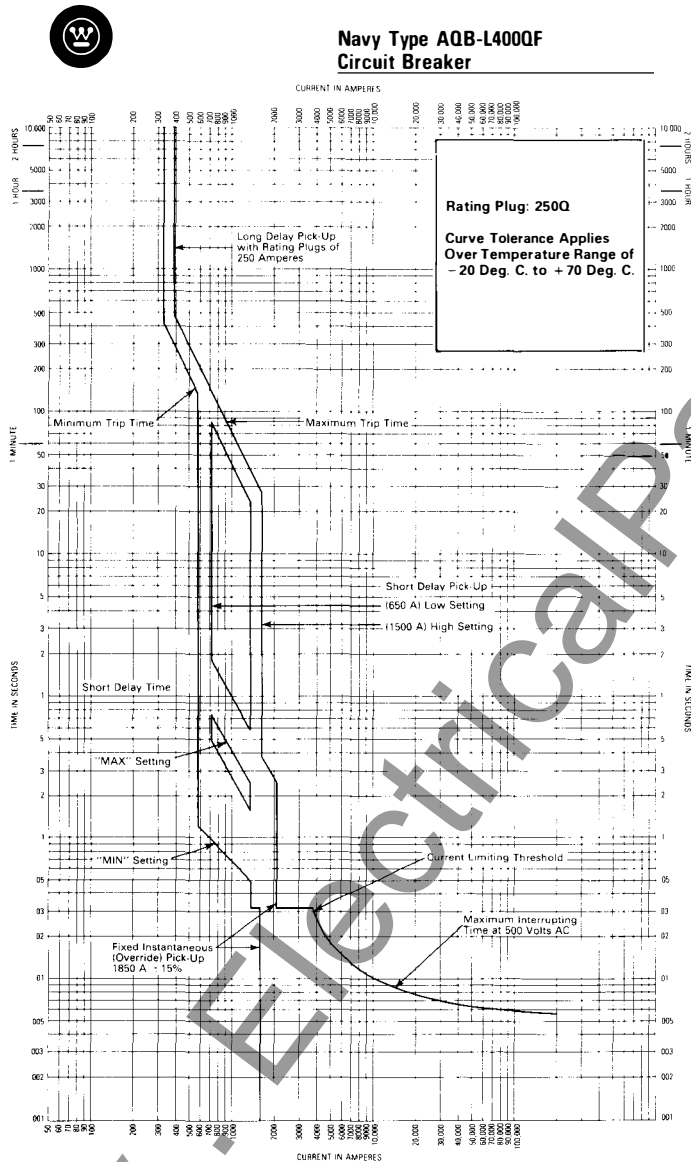




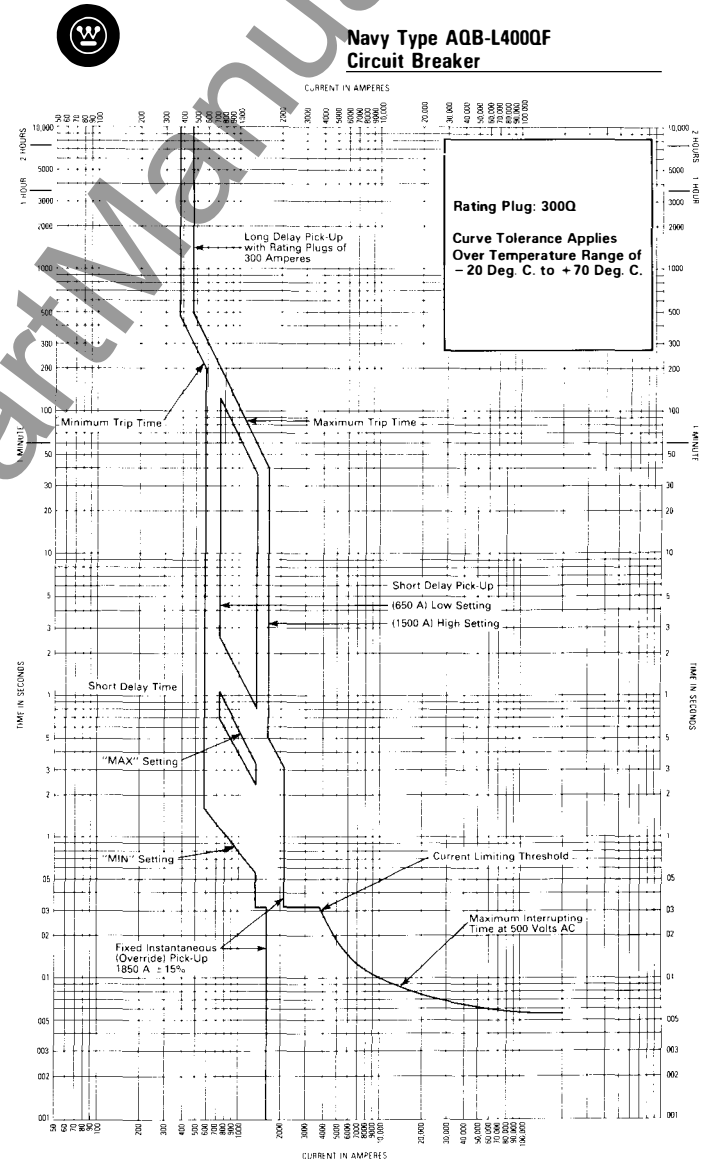
July 1991
Supersedes Technical Data 29-220,
pages 45-46, dated April 1991
Mailed to: E, D, C/29-200A

Types AQB-L400QF, AQB-L400QM;
150,000 Amperes I.C. and
AQB-LL400QS; 100,000 Amperes I.C.
250-400 Amperes; 500 Volts 60 Hz Ac

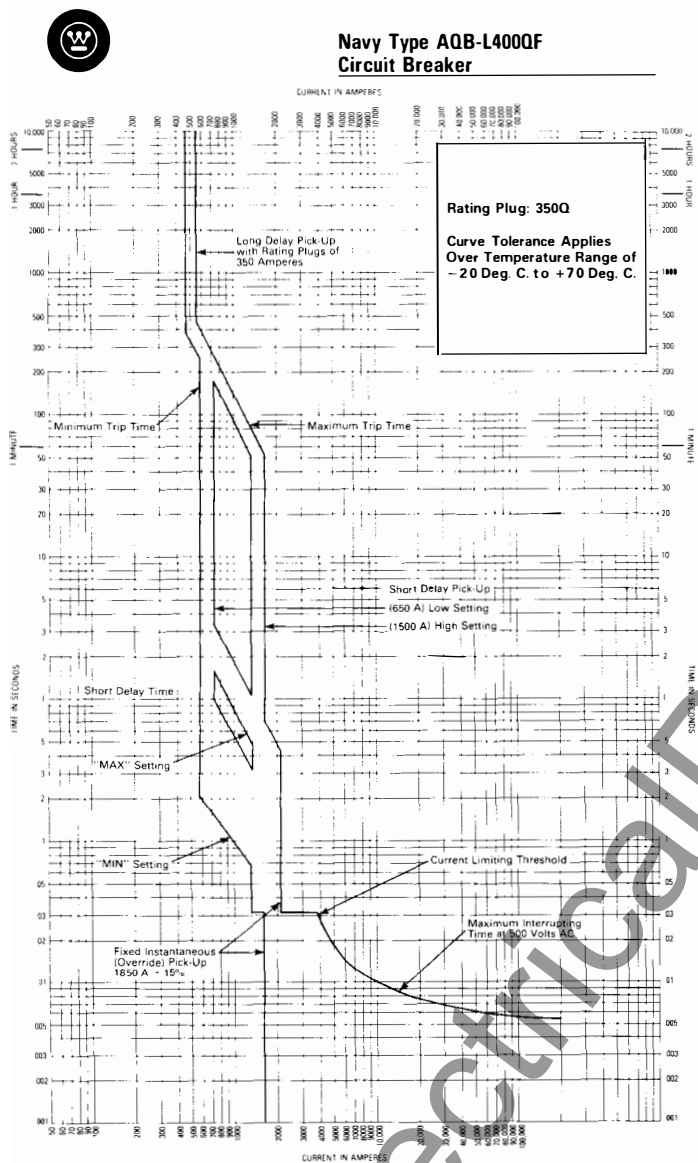
AB DE-ION® Circuit Breakers for Naval Shipboard Use



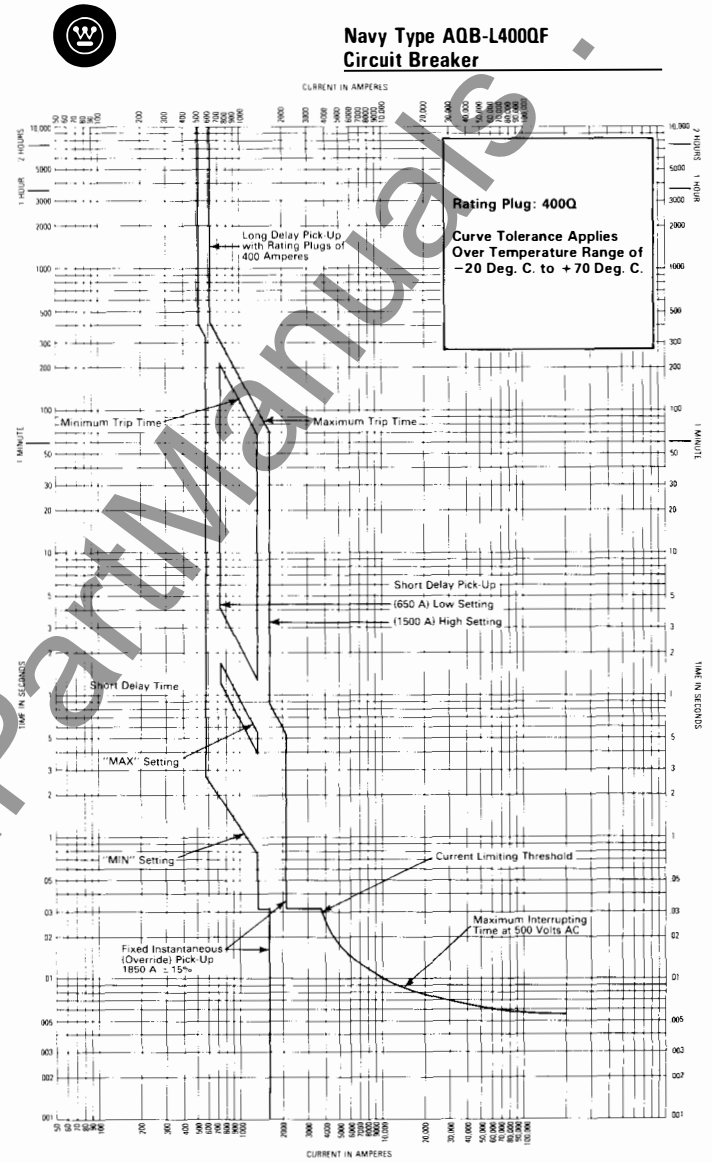
Time-Current Curves for AQB-L400QF Circuit Breaker with 250 Ampere
Rating Plug



Time-Current Curves for AQB-L400QF Circuit Breaker with 300 Ampere
Rating Plug



Time-Current Curves for AQB-L400QF Circuit Breaker with 350 Ampere Rating Plug



Time-Current Curves for AQB-L400QF Circuit Breaker with 400 Ampere Rating Plug



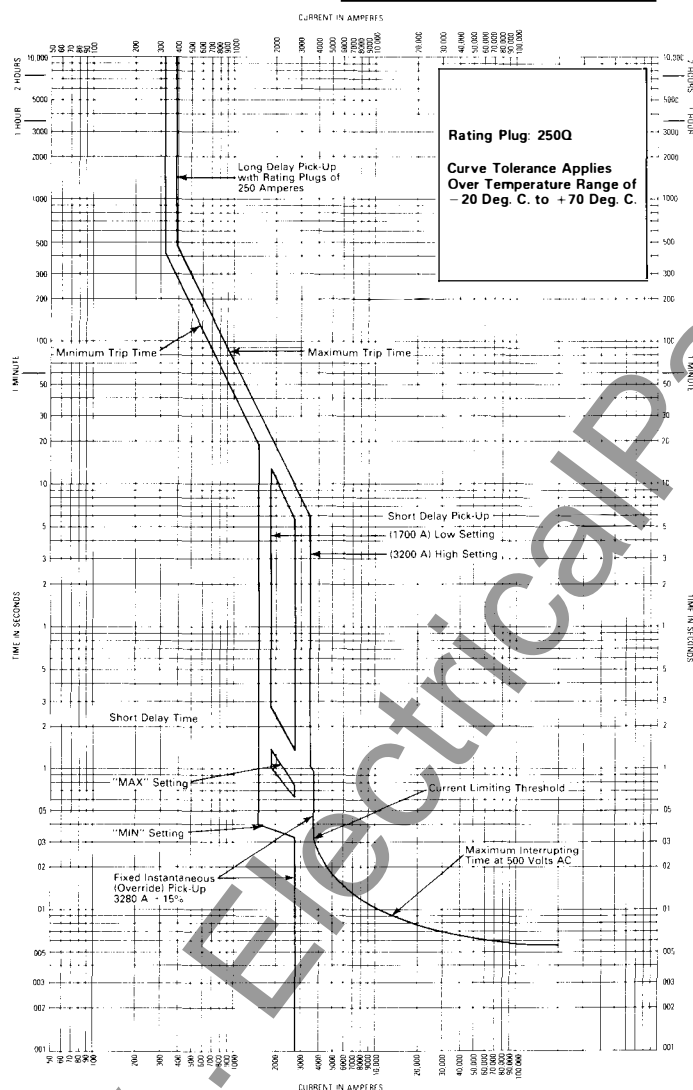
July 1991
Supersedes Technical Data 29-220,
pages 47-48, dated April 1991
Mailed to: E, D, C/29-200A

Types AQB-L400QF, AQB-L400QM;
150,000 Amperes I.C. and
AQB-LL400QS; 100,000 Amperes I.C.
250-400 Amperes; 500 Volts 60 Hz Ac

AB DE-ION® Circuit Breakers for Naval Shipboard Use



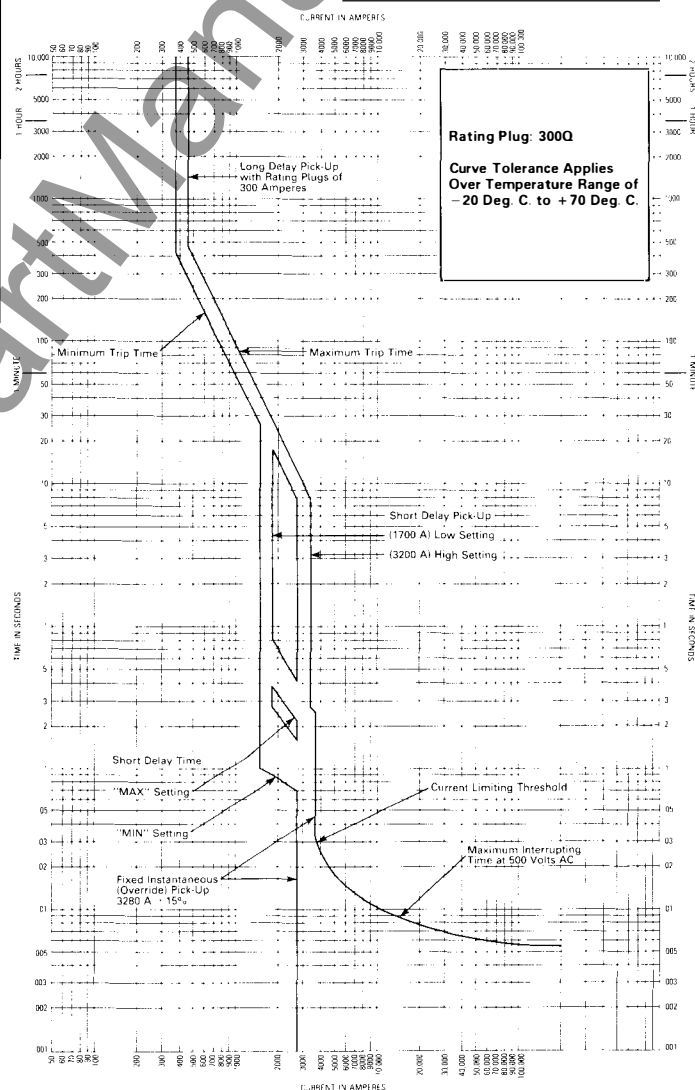
Navy Type AQB-L400QM Circuit Breaker



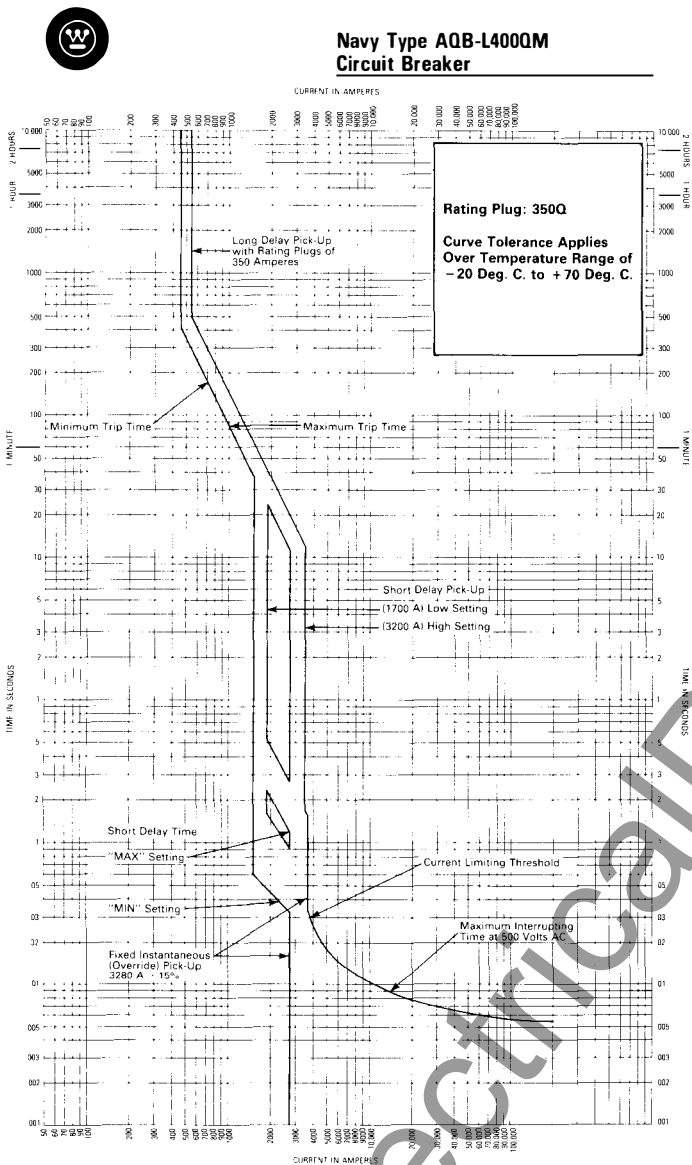
Time-Current Curves for AQB-L400QM Circuit Breaker with 250 Ampere Rating Plug



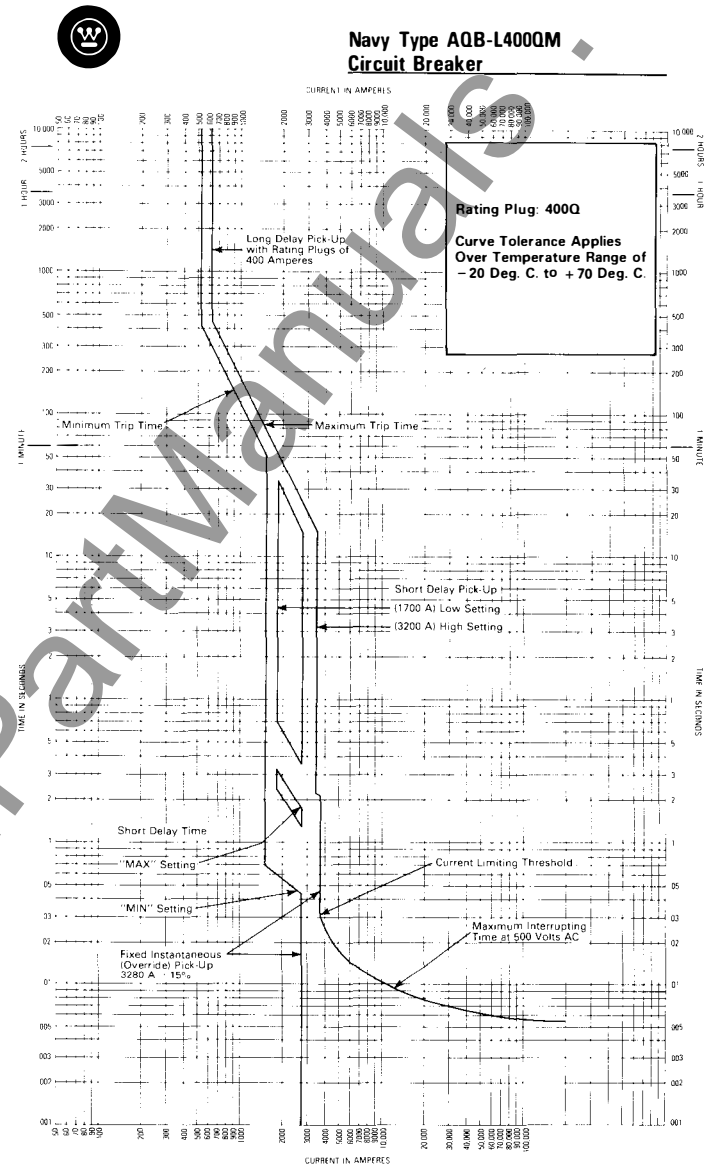
Navy Type AQB-L400QM Circuit Breaker



Time-Current Curves for AQB-L400QM Circuit Breaker with 300 Ampere Rating Plug



Time-Current Curves for AQB-L400QM Circuit Breaker with 350 Ampere Rating Plug



Time-Current Curves for AQB-L400QM Circuit Breaker with 400 Ampere Rating Plug



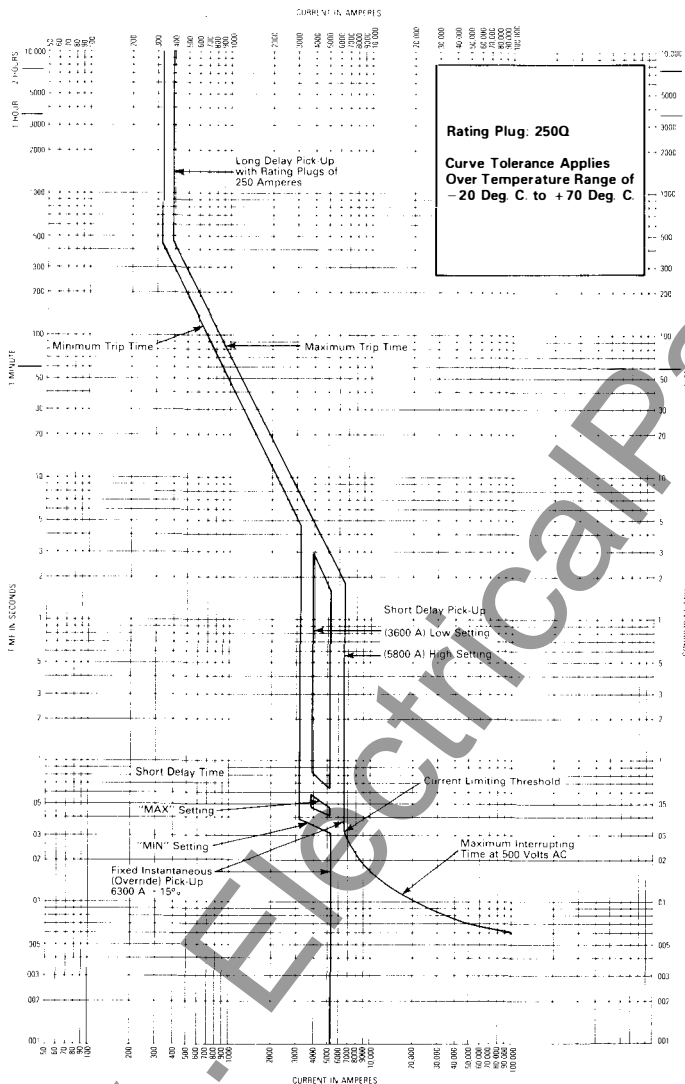
July 1991
Supersedes Technical Data 29-220,
pages 49-50, dated April 1991
Mailed to: E, D, C/29-200A

Types AQB-L400, AQB-LL400
500 Volts Ac
400 Amperes Maximum, 150,000,
100,000 Amperes I.C., Respectively

AB DE-ION® Circuit Breakers for Naval Shipboard Use



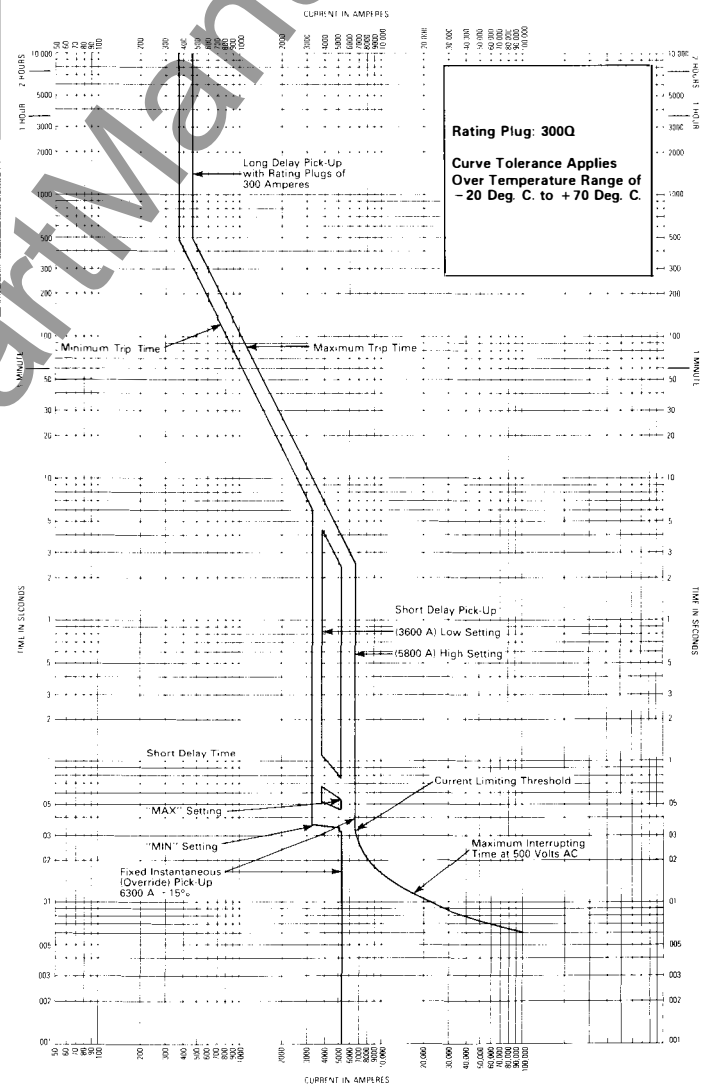
Navy Type AQB-LL400QS Circuit Breaker



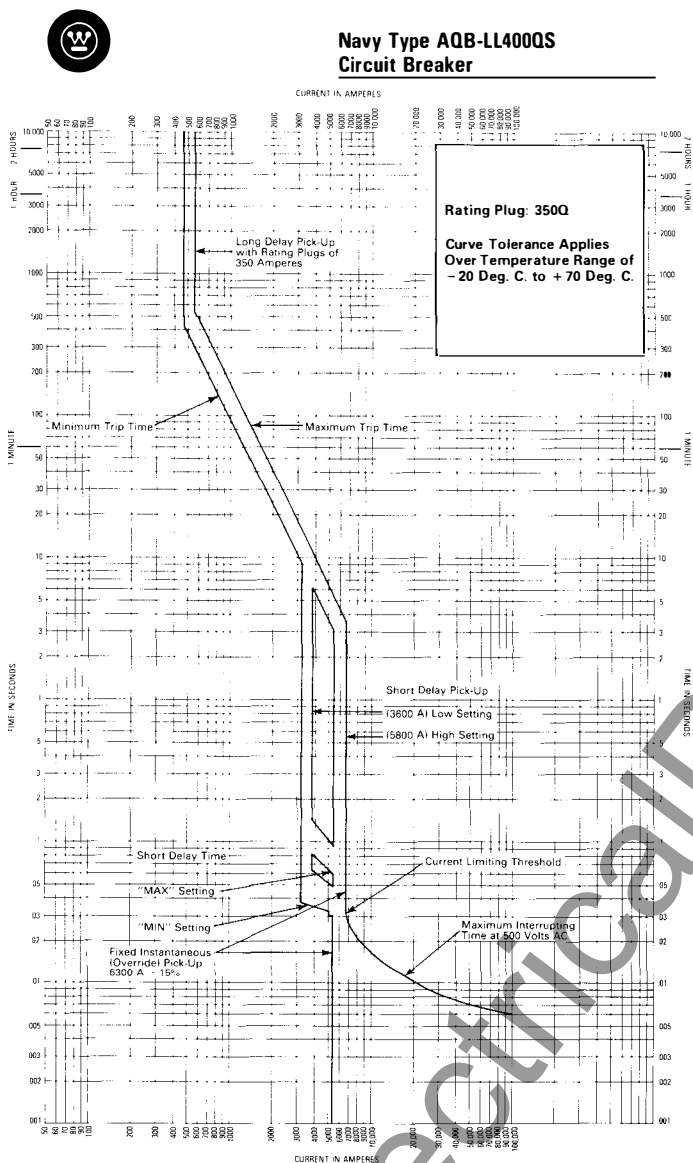
Time-Current Curves for AQB-LL400QS Circuit Breaker with 250 Ampere Rating Plug



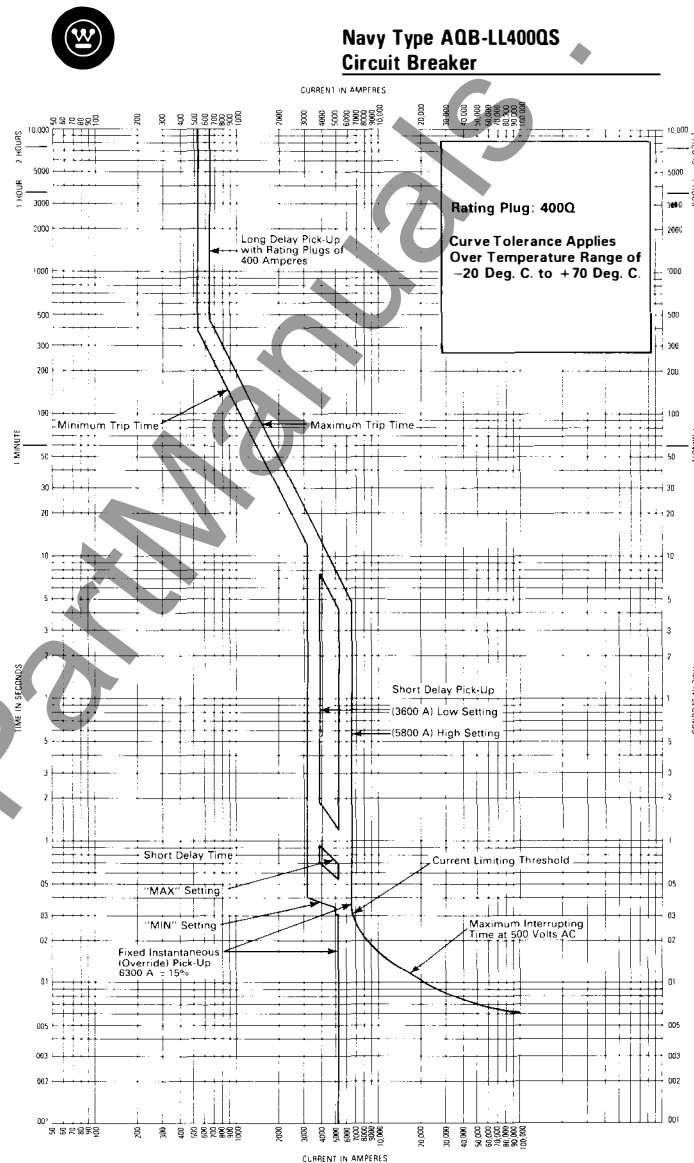
Navy Type AQB-LL400QS Circuit Breaker



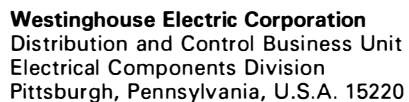
Time-Current Curves for AQB-LL400QS Circuit Breaker with 300 Ampere Rating Plug



Time-Current Curves for AQB-LL400QS Circuit Breaker with 350 Ampere Rating Plug

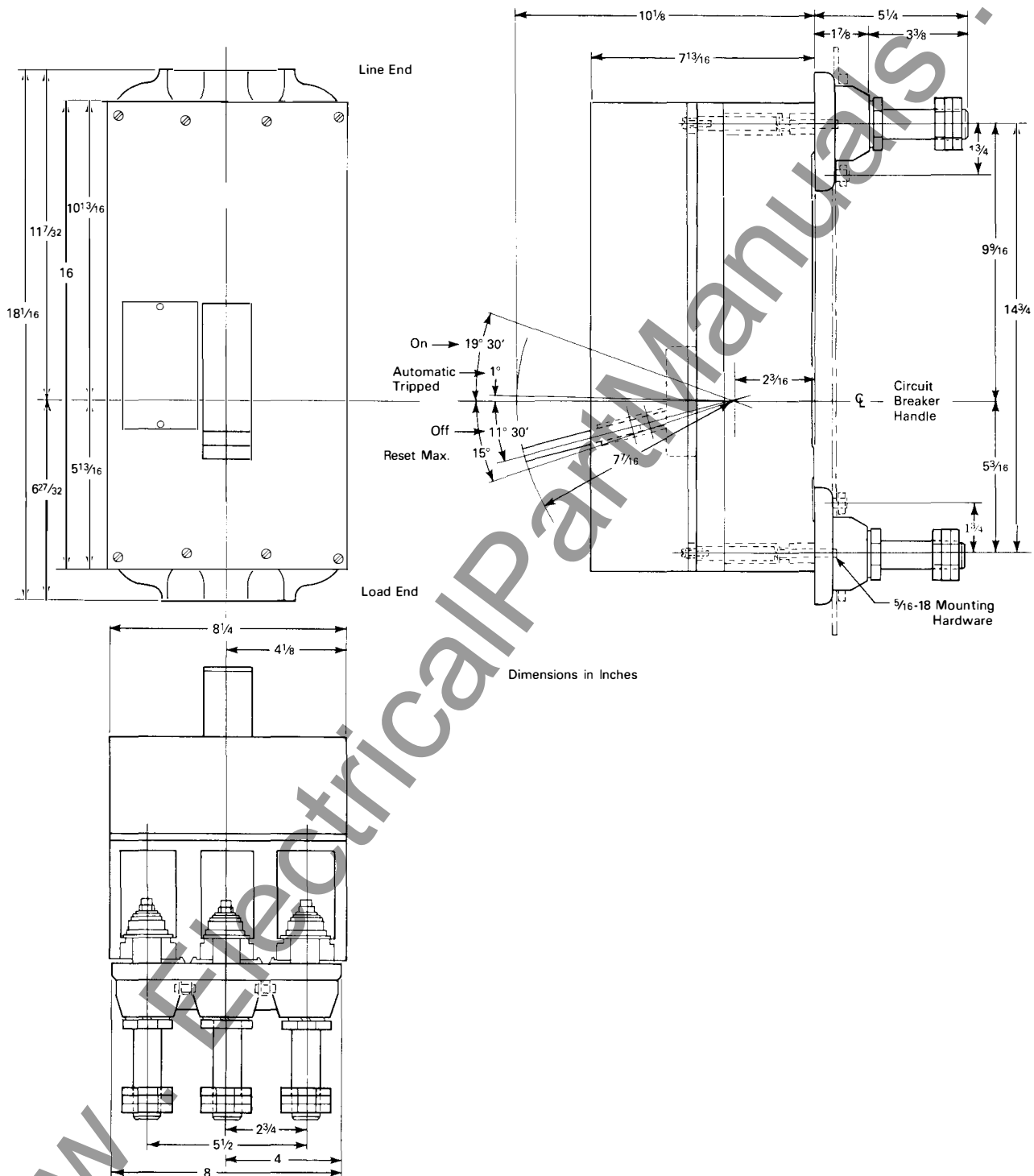


Time-Current Curves for AQB-LL400QS Circuit Breaker with 400 Ampere Rating Plug





Outline AQB-L400, AQB-LL400 with Motor Operator



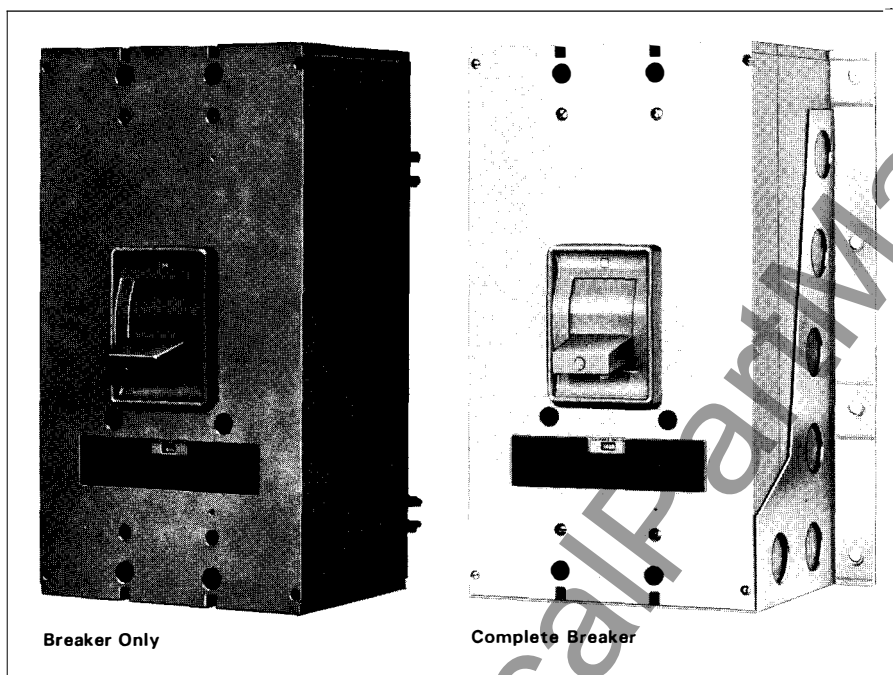
Printed in U.S.A.



July 1991
Supersedes Technical Data 29-220,
pages 55-56, dated April 1991
Mailed to: E, D, C/29-200A

Types AQB-A1601, NQB-A1601
500-1600 Amperes; 500 Volts, 60 Hz Ac,
75,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use



AQB-A1601 and NQB-A1601
Navy Breakers

Note: AQB-A1601 are sold for replacement only. They are no longer on the Navy Qualified Products List.

500-1600 Amperes, 500 Volts A-c, 60
Cycles Only, 3-Pole, 50°C Ambient
Interrupting Rating: 75,000 Amps. A-c
(Without Delayed Instantaneous)
50,000 Amps. A-c (With Delayed
Instantaneous)

Specification: MIL-C-17361

Class: Hi Shock MIL-S-901

Vibration: MIL-STD-167

Material and Workmanship: MIL-E-917

AQB-A1601 circuit breakers are designed for installation in switchboards for protection of generators and feeder and branch circuits.

A complete breaker consists of a breaker plus mounting base and is available with numerous attachments such as electrical operator, shunt trip, undervoltage release and auxiliary switches to perform varied auxiliary functions.

Trip units for these breakers have an adjustable instantaneous trip and are listed with and without delayed instantaneous trip for system coordination.

NQB-A1601 Breakers have a continuous rating of 1600 amperes. They are used only as disconnects since they do not have an automatic trip device.

Note: Breakers with ratings other than those listed above are considered as special and full descriptive data must be provided.

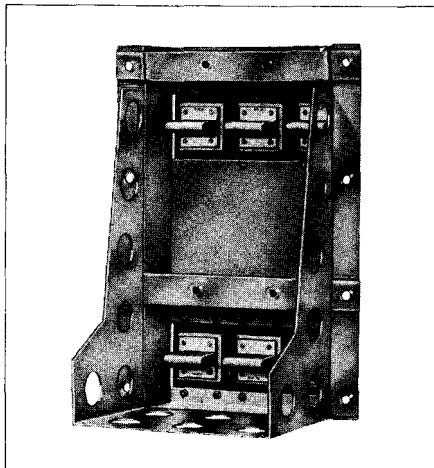
400 cycle breakers are not available.

List Prices See Price List 29-020 3 Pole, 500 Volts, 60 Cycles A-c

Type	Continuous Ampere Rating	Instantaneous Trip Setting A-c Amperes		Breaker Only, consists of:		Trip Unit Style Number	National Stock Number
		Low	High	Frame (Includes Stabs) Style Number	National Stock Number		
Without Delayed Instantaneous Trip							
AQB 600X	2000	6000		372D522G02	5925-01-105-4401	372D523G01	.....
AQB 600XM	4000	12000		372D522G02	5925-01-105-4401	372D523G03	.....
AQB 800X	2000	6000		372D522G02	5925-01-105-4401	372D523G07	.....
AQB 1000X	2000	6000		372D522G02	5925-01-105-4401	372D524G03	.....
AQB 1200X	2000	6000		372D522G02	5925-01-105-4401	372D524G05	.....
AQB 1400X	4000	12000		372D522G02	5925-01-105-4401	372D524G07	.....
AQB 1600X	4000	12000		372D522G02	5925-01-105-4401	372D524G09	5925-00-406-6131
NQB 1600	.....	.....		372D522G04	.....	372D524G10	.....
With Delayed Instantaneous Trip (XT1 – Min. Time Delay .0417 – .0458 Sec.)							
AQB 500XT1	2000	6000		372D522G02	5925-01-105-4401	374D211G01	.....
AQB 800XT1	2000	6000		372D522G02	5925-01-105-4401	374D211G07	.....
AQB 1000XT1	2000	6000		372D522G02	5925-01-105-4401	374D212G03	.....
AQB 1200XT1	2000	6000		372D522G02	5925-01-105-4401	374D212G05	5925-00-102-6086
AQB 1600XT1	4000	12000		372D522G02	5925-01-105-4401	374D212G09	5925-00-727-7574
With Delayed Instantaneous Trip (XT2 – Max. Time Delay .0708 – .0750 Sec.)							
AQB 500XT2	2000	6000		372D522G02	5925-01-105-4401	374D221G01	.....
AQB 800XT2	2000	6000		372D522G02	5925-01-105-4401	374D221G07	.....
AQB 1200XT2	2000	6000		372D522G02	5925-01-105-4401	374D222G05	5925-00-727-7555
AQB 1600XT2	4000	12000		372D522G02	5925-01-105-4401	374D222G09	5925-00-103-4248



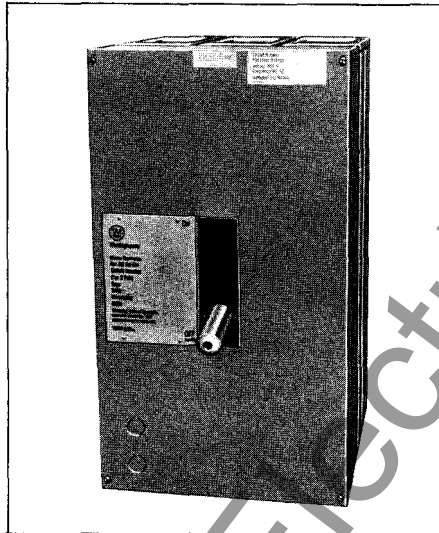
Mounting Base^①



For switchboard mounting. Includes back connectors for switchboard bus and male stabs to engage breaker. Matching stabs are supplied with breaker frame.

Style Number: 373D307G02

Electrical Operator^①



Mounts to front of breaker for remote operation. 450 volt Ac rating utilizes a transformer in conjunction with a 120 volt motor. If automatic reset is desired, order the circuit breaker with optional Automatic Reset Switch (See Optional Additions)

Rating	Style Number	National Stock Number
120 V A-c	1371D38G06	None
450 V A-c	1371D38G08	Assigned

Optional Additions^①

Shunt Trip^②: Mounts in right pole only. Has momentary rating only; coil leads must be wired in series with 1A contact of auxiliary switch.

Undervoltage Release^②: Mounts in right pole only.

Auxiliary Switch: Mounts in left pole only. 4 contacts, any combination of A's and B's, (supplied as 2A and 2B unless specified) 8 contacts, any combination of A's and B's, (supplied as 4A and 4B unless specified)

Automatic Reset Switch

For use with motor operator when an automatic reset function is required. Factory installed only.

Cable Connector: Mounts to bus connector for cable connection. Each lug accepts four cables, 600 MCM max. 1 lug required per bus connector.

Style Number: 505C706G03

Fungus, Moisture Resistant Treatment:

(JAN-C-173 or MIL-V-173): If specified, contact Westinghouse. External parts are coated; trip units are not treated.

Drawings

Master plan: 900J442

Sheet 1 of 4: Breaker Only and Wiring diagrams

Sheet 2 of 4: Trip Unit, Curves and Attachments

Sheet 3 of 4: Mounting Base and Cable Connectors

Sheet 4 of 4: Motor Operator

Individual Reproductions: When required, reproductions of sheets 1 thru 4 of master plan 900J442 can be ordered as follows:

Type Reproduction

Vellum
Prints (Paper)

Technical Manual: NAVSHIPS No. 0962-014-5000. This booklet per MIL-M-15071. When required, order BVR-TM-576.

Dimensions: Pages 57, 58, 59

Characteristic Curves: Pages 60, 61

^① Can be field mounted.

^② Breaker can be supplied with either shunt trip or undervoltage release, but not both.

Net Weights

Description	Weight, Lbs.
Breaker Only	
AQB	151
NQB	148
Breaker Frame (AQB and NQB)	128
Trip Unit	
AQB	23
NQB	20
Mounting Base Only	75
Electrical Operator, 115 Volt	27
Electrical Operator, 450 Volt	35
Shunt Trip	$\frac{3}{4}$
Undervoltage Release	1 $\frac{1}{4}$
Auxiliary Switch	1 $\frac{3}{4}$
Cable Connector	3

Ordering Information

When ordering Westinghouse Navy circuit breakers consult the check list below to make sure you have provided correct information. You should specify:

1. Quantity, Westinghouse style number and National stock number of:

- Breaker frame and trip unit.
- Mounting base.
- Spare breakers or trip units. (Usually one required for each ten units or fraction thereof of each current rating.)
- Instruction books.

2. Shipment

Specify transportation means, method of packaging and preservation and required shipping date.

3. Drawings

Specify quantity of outline or master plan drawings required.

4. Inspection

Indicate whether Government Source inspection is required at factory prior to shipment.



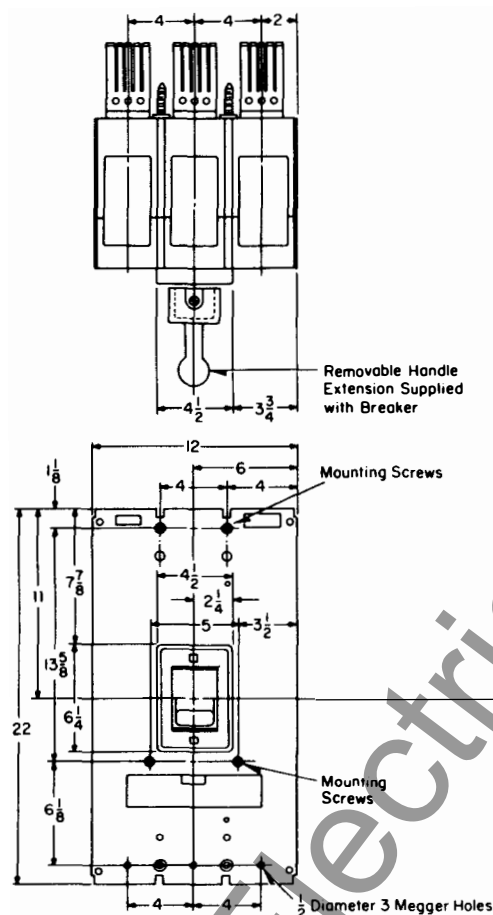
July 1991
Supersedes Technical Data 29-220,
pages 57-58, dated April 1991
Mailed to: E, D, C/29-200A

Types AQB-A1601, NQB-A1601
500-1600 Amperes; 500 Volts, 60 Hz. Ac.
75,000 Amperes I.C.

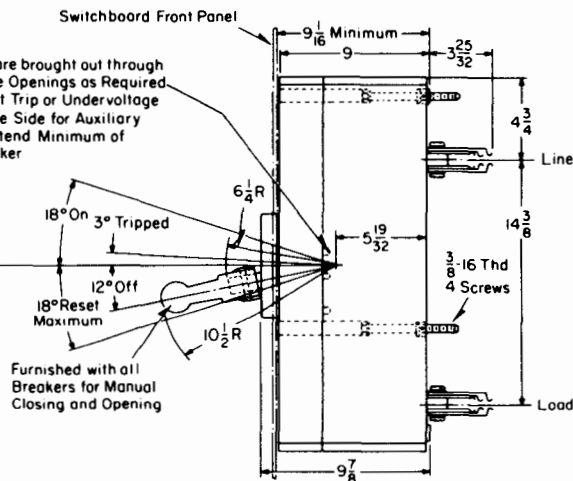
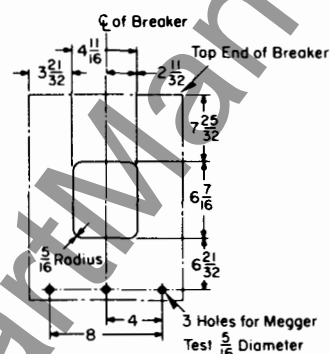
AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB and NQB Circuit Breaker Frame Outline Dimensions

NQB—Same except for trip unit nameplate.



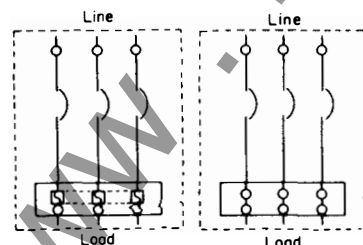
Front Panel Cutout



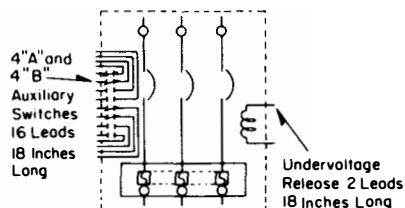
Wiring Diagrams

AQB

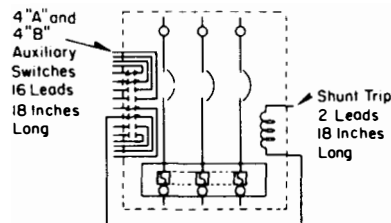
NQB



When undervoltage
release and auxiliary
switches are provided



When shunt trip and
auxiliary switch
are provided



Note: The auxiliary switch must be used with each shunt trip. Connect one side of shunt trip in series with "A" contact (closed when breaker is closed) of auxiliary switch when connecting to power supply.

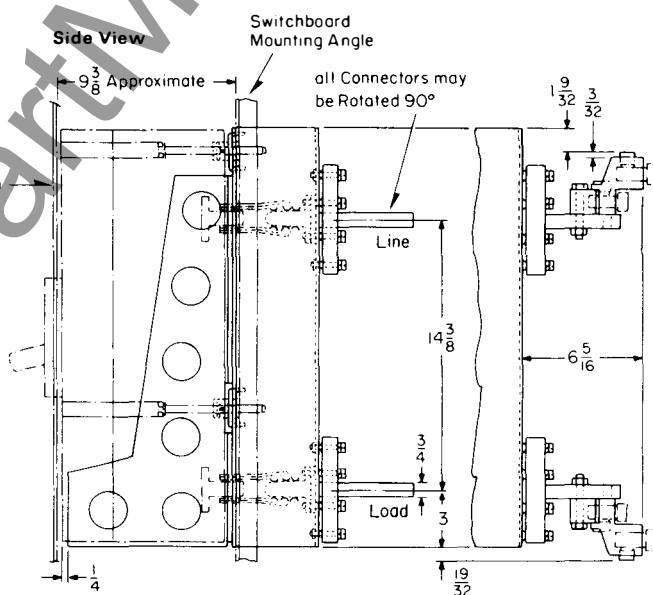
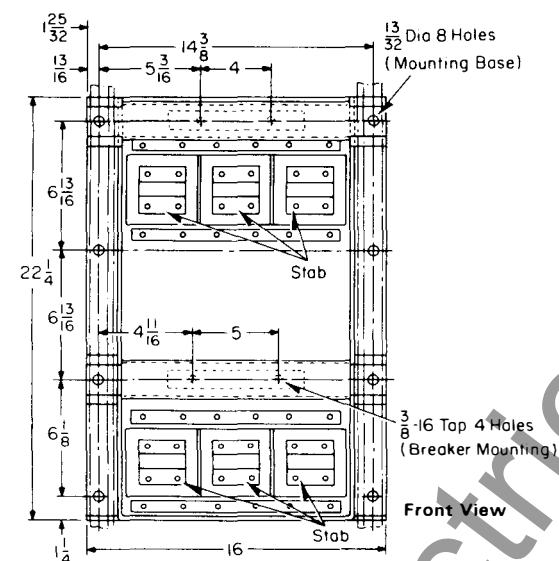
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Diagram illustrating the dimensions and components of a 1500V switchgear:

- Top End of Breaker:** Indicated by an arrow pointing to the top edge of the main enclosure.
- Radius:** Indicated by an arrow pointing to the rounded corner of the internal compartment.
- 3 Holes for Megger Test - $\frac{5}{16}$ Diameter:** Indicated by an arrow pointing to three small circular holes at the bottom of the enclosure.
- Dimensions:**
 - Overall width: 32 $\frac{1}{32}$
 - Internal width (excluding breakers): 4 $\frac{11}{16}$
 - Distance from center of breaker to right edge: 2 $\frac{11}{32}$
 - Overall height: 25 $\frac{25}{32}$
 - Internal height (excluding breakers): 6 $\frac{7}{16}$
 - Distance from bottom edge to holes: 6 $\frac{21}{32}$
 - Distance between holes: 8
 - Distance from right edge to holes: 4

With cable connectors style 505C706G03
lug capacity—four 600 MCM cables per lug



October, 1978
Supersedes Price List 29-220,
pages 1-2, dated February 17, 1969,
and Supp. page .01 dated
September 26, 1974

Mailed to: E, C/1905/PL

5 to 1600 Amperes
1500 to 100,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use



Selector Guide for Approved Navy Circuit Breakers

Breaker Type	Specification	Hi-Shock Spec	No. of Poles	Ampere Rating	Voltage Rating	Inter-rupting Rating, Amperes	Tripping Elements	Page
ALB-1	MIL-C-17588	MIL-S-901	1	5- 50	125 V Dc 125 V Ac	2,500② 5,000②	Thermal Magnetic	5
NLB-1	MIL-C-17588	MIL-S-901	1	50	125 V Dc 125 V Ac		None	5
AQB-A100	MIL-C-17361	MIL-S-901	2, 3	15- 100	250 V Dc 500 V Ac	10,000 15,000	Thermal Magnetic	11
NQB-A100	MIL-C-17361	MIL-S-901	2, 3	100	500 V Dc 250 V Ac		None	11
AQB-A101	MIL-C-17361	MIL-S-901	3	15- 100	250 V Dc 500 V Ac	10,000 15,000	Thermal Magnetic	15
NQB-A101	MIL-C-17361	MIL-S-901	3	100	500 V Ac 250 V Dc		None	15
AQB-A250	MIL-C-17361	MIL-S-901	2, 3	125- 250	250 V Dc 500 V Ac	15,000 20,000	Thermal Magnetic	23
NQB-A250	MIL-C-17361	MIL-S-901	2, 3	250	250 V Dc 500 V Ac		None	23
AQB-A600	MIL-C-17361	MIL-S-901	2, 3	250- 600	250 V Dc 500 V Ac	20,000 30,000	Thermal Magnetic	29
NQB-A600	MIL-C-17361	MIL-S-901	2, 3	600	250 V Dc 500 V Ac		None	29
AQB-LF100	MIL-C-17361	MIL-S-901	3	15- 100	500 V Ac	100,000	Thermal Magnetic Fuses	34
AQB-LF250	MIL-C-17361	MIL-S-901	3	125- 250	500 V Ac	100,000	Thermal Magnetic Fuses	35
AQB-A1601	MIL-C-17361 (Modified)	MIL-S-901	3	500-1600	500 V Ac	75,000	Thermal Magnetic Fuses	39
NQB-A1601	MIL-C-17361 (Modified)	MIL-S-901	3	1600	500 V Ac		Thermal Magnetic None	39

② A 5 ampere breaker has an interrupting rating of 1500 amperes Ac or Dc.



Description

These molded case Navy circuit breakers provide both overload protection for conductors and short circuit protection for all circuit elements such as conductors, motors and starters. They also serve as manual disconnecting means as well as circuit protectors.

All Westinghouse circuit breakers in this Technical Data meet applicable Navy specifications for "hi-shock". These manually operated breakers are rated from 5 to 1600 amperes with interrupting ratings from 1,500 to 100,000 amperes. (See "selector guide" on page one for ratings and Navy specifications.)

Design Features

Westinghouse Navy circuit breakers retain all the features of standard commercial type AB De-ion breakers listed on the next page under "standard features." Built to Navy specifications, they incorporate the following Navy requirements:

Specific Navy Features

① Shock Resistant Molded Case:

Housing consists of rear base section and cover molded of glass alkyd material. This material, identified as MAI-60 or MAI-30, has very high mechanical strength (shock and impact resistance), is both fire and moisture-resistant and provides excellent dielectric characteristics.

② **Anti-Shock Device:** Inertia weight over center pole holds trip bar in latched position under shock conditions but does not prevent thermal or magnetic trip units from functioning on overload and short circuits.

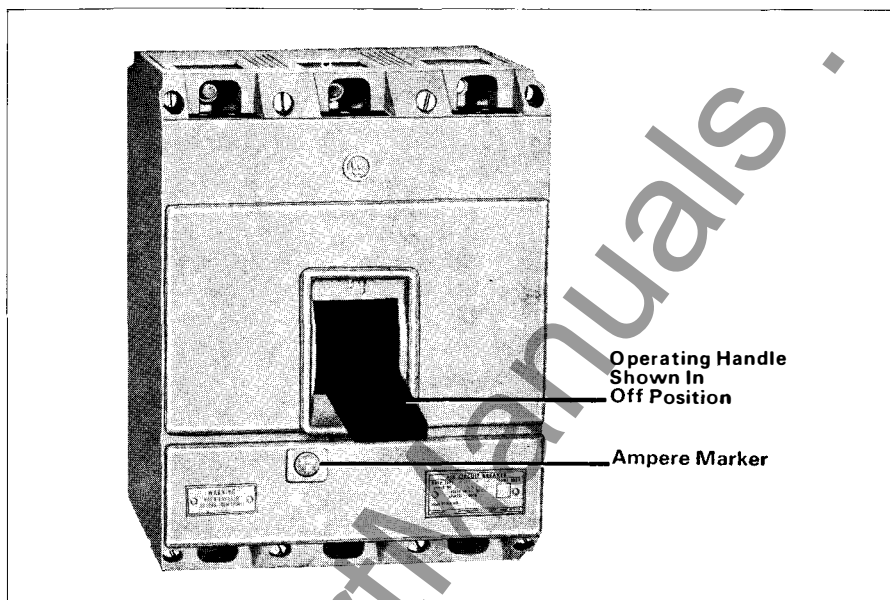
③ **Calibrated for 50°C:** All Navy breakers are calibrated for shipboard installation at 50°C ambient.

④ **Interchangeable Trip Units:** All thermal and magnetic trip units in AQB circuit breakers are encased in sealed, self-contained units that are interchangeable with other trip units of different ampere ratings within the same frame size.②

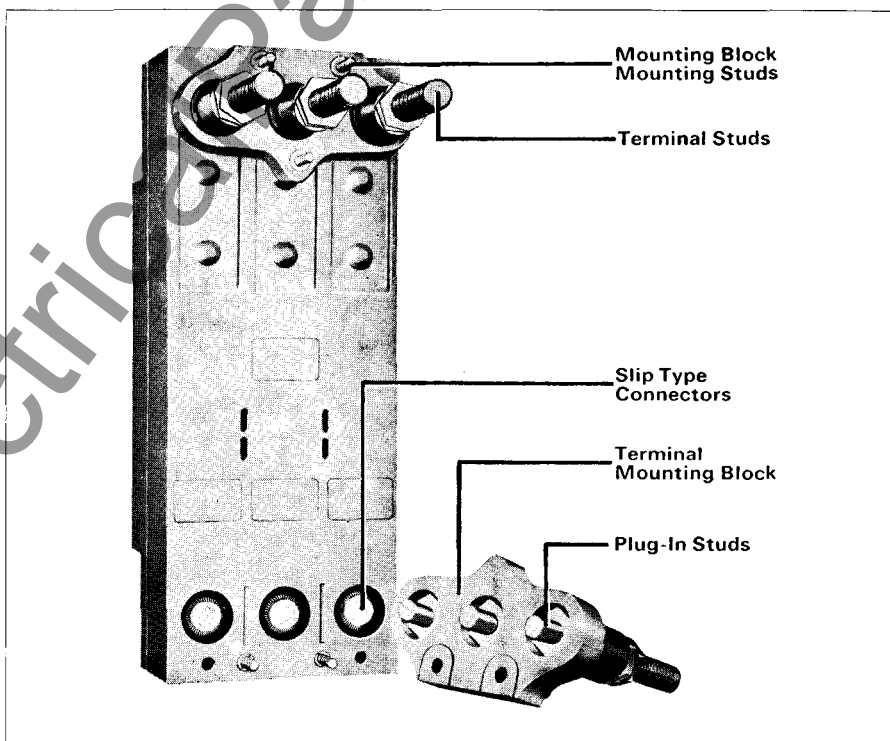
⑤ **Plug-in Connectors:** All AQB breakers are designed for easy plug-in installation. Plug-in type connectors are built into the base of the breaker for use with molded mounting blocks complete with studs. For front connection, pressure-type cable terminals are used instead of plug-in connectors.③ ALB breakers have a clamp terminal on the line end to receive panelboard bus stab projections.

② Interchangeable trip units are not available in the A101 or ALB-1.

③ All A101 breakers have plug-in connectors. Front or rear connectors determined by mounting base selected.



Front view of assembled AQB-A250 Navy circuit breaker. Note that the shock resistant, glass alkyd material (MAI-60) used for housing and cover is light gray, while standard molded case breakers are black.



Rear view of AQB-A600 breaker showing terminal blocks for switchboard mounting. (Terminal block attached at line end of breaker and removed from load end.)



October, 1978
Supersedes Price List 29-220,
pages 1-2, dated February, 1969

Mailed to: E, C/1905/PL

5 to 1600 Amperes
1500 to 100,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

Standard Features

① **Corrosion-Resistant:** All parts are specially treated to resist corrosion. Fungus-moisture resistant treatments for severe atmospheres are available as modifications.

② **Positive Position Indication:** Position of handle always indicates ON, OFF, or TRIPPED.

③ **Free Bearing Surfaces:** Dissimilar metals are used to prevent bearing wear and eliminate sticking.

④ **De-ion Arc Quenchers:** This Westinghouse development consists of a series of grid plates mounted in parallel between supports of insulating material. The slots in the steel plates are directly over the contacts and draw the arc from the moving contact up into the divided chamber where it is confined, divided, and extinguished.

⑤ **Silver Alloy Contacts:** Special silver alloy contacts prevent sticking and welding, increase contact life and insure low resistance when carrying full-rated load.

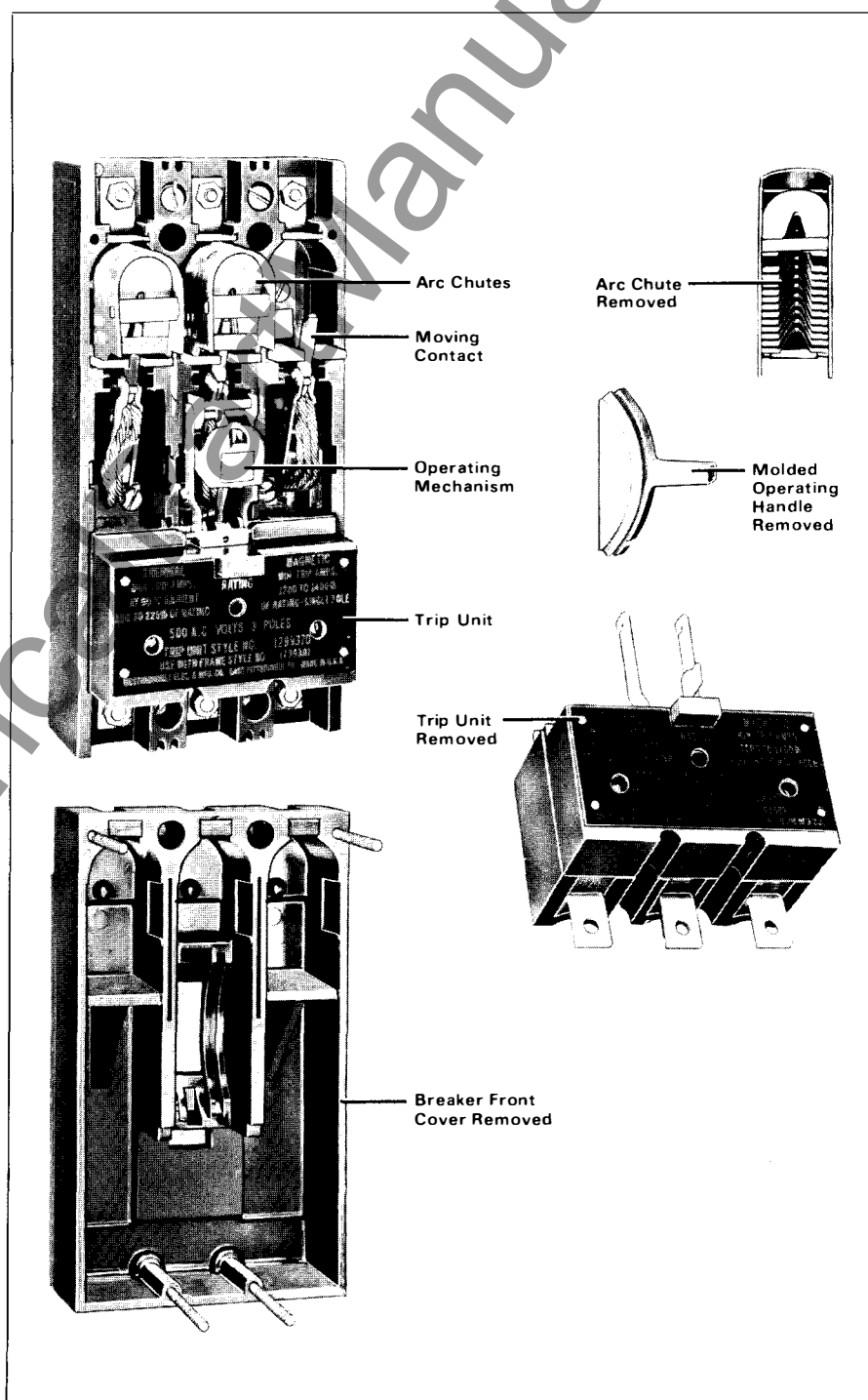
⑥ **Quick-Make, Quick-Break Over Center Toggle Mechanism:** Provides quick, positive action in opening and closing of circuits, prevents "teasing" of contacts and reduces contact wear.

⑦ **Complete Interpole Barriers:** Insure against internal flashovers when faults occur.

⑧ **Common Trip:** Two and three-pole units have insulated common trip bar that opens all poles simultaneously when an overload occurs on any one, thus eliminating possibility of single-phasing.

⑨ **Tested Accuracy:** All tripping members have ground and polished latch surfaces heat treated to prevent galling or later distortion. All parts are assembled in temperature-controlled atmosphere to assure correct calibration and perfect mating. Each breaker is thoroughly tested.

⑩ **Factory Sealed:** Smaller breakers are factory sealed to prevent tampering with calibration. Interchangeable trip units are individually sealed.



Application

Designed primarily for circuit protection, Westinghouse Navy circuit breakers are used in lighting and power panels, switchboards, distribution centers and load centers aboard ship. The photograph below illustrates the use of molded case circuit breakers in a typical Navy switchboard.



General Ordering Information

When ordering Westinghouse Navy circuit breakers, consult the check list below to make sure you have provided correct information. You should specify:

1. Quantity, Westinghouse Style Number and Federal Stock Number of:
 - a. Complete breaker or frame, trip unit, fuses (where required) and/or attachments where available.
 - b. Plug-in mounting block or front connecting cable terminals.
 - c. Spare breakers or trip units. (usually one required for each ten units or fraction thereof of each current rating.)
 - d. Instruction books.
2. Shipment:
Specify transportation means, method of packaging and preservation, and required shipping date.
3. Drawings:
Specify quantity of outline or master plan drawings required.
4. Inspection:
Indicate whether Navy inspection is required at factory prior to shipment.



Westinghouse Electric Corporation
Low Voltage Breaker Division
Beaver, Pennsylvania 15009

Technical Data
29-220

Page 5

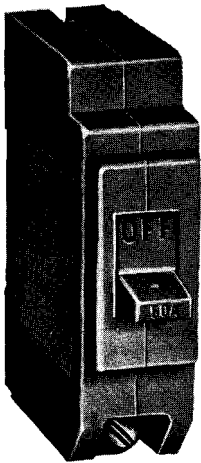
May, 1980
Supersedes Price List 29-220, pages 5-6
dated October, 1978

Mailed to: E, C/1905/PL

Types ALB-1, NLB-1, 125 Volts Ac and Dc,
50 Amperes Maximum, 5000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

ALB-1 and NLB-1 Breakers
Specification: MIL-C-17588
5-50 Amperes, 60 or 400 Cycle
125 Volts Ac or Dc Single Pole



ALB-1 Navy circuit breaker. Note clamp type stab terminal for panelboard mounting at line end and pressure type terminal for front connection at load end.

Interrupting Rating
10-50 Amp Units: 5,000 Amps Ac and 2500
Amps Dc
5 Amp Unit: 1,500 Amps Ac or Dc

High shock Navy ALB-1 circuit breakers are designed for shipboard protection of single phase Ac and Dc circuits or three-phase Ac circuits when breakers are connected by handle yokes for 2 and 3-pole operation.

The NLB-1 breaker is the non-automatic design of the ALB-1. Since the tripping element is omitted, it is used as a manual disconnect.

Non-adjustable thermal and magnetic trip elements are factory calibrated and sealed. The tripping element is counterbalanced to reduce possibility of accidental tripping under shock. All parts are given a corrosion-resistant treatment in compliance with MIL-E-917.

Plug-in line connections simplify panelboard mounting. A clamp type terminal on the line end of the breaker provides plug-in connection to bus stabs in panelboard mounting blocks. For front connection, there is a pressure type terminal on the load end of the breaker.

Test report number 5530-5.

Net Prices Refer to Price List 29-020
Circuit Breakers – Net Weight: 8 oz.

Type	Ampere Rating	Style Number	National Stock No.
ALB-1	5	454D507G01	H5925-00-204-7494
ALB-1	10	454D507G02	H5925-00-204-7488
ALB-1	15	454D507G03	H5925-00-549-5366
ALB-1	20	454D507G04	H5925-00-501-5051
ALB-1	25	454D507G05	H5925-00-549-5359
ALB-1	30	454D507G06	H5925-00-549-5360
ALB-1	35	454D507G07	H5925-00-549-5362
ALB-1	40	454D507G08	H5925-00-546-3076
ALB-1	50	454D507G09	H5925-00-549-5365
NLB-1②	50	454D507G10	H5930-00-548-7068

Special ALB-1 and NLB-1 Breakers

Similar to above except to have a 1A-1B auxiliary switch rated 5 amp resistive, 250 volts Ac or 30 volts Dc max. (Not submitted for Navy approval, and does not use breaker mounting blocks). Order by description.

Mounting Blocks



Top view of typical ALB-1 panelboard mounting block. (Style 454D509G04)

Type	Style Number	National Stock No.	Net Wt. in Lbs.
Single breaker, front panel supported	454D509G01	None Assigned	1/4
Single breaker, surface mounted	454D509G02	None Assigned	1/4
Two breakers, front panel supported	454D509G03	None Assigned	1/2
Dc, single phase③ and part (1/3) of combination for 3-phase④	454D509G04	H5925-00-201-7177	2/3
Part (2/3) of combination for 3-phase application④	454D509G05	H5925-00-201-7175	2/3
3-phase panel application⑤	454D509G06	H5925-00-544-5980	1
Dc, single phase③ and part (1/3) of combination for 3-phase④	454D509G08	H5925-00-201-7176	2/3

Individual Reproductions: When required, reproductions of master drawings, outline drawings and certification sheets can be ordered as follows:

Item	Description
1	Full size photolith tracing of master drawing on cronoflex (mylar)
2	Outline and drilling plan on cronoflex (mylar)
3	Certification data on cronoflex (mylar)
4	Van Dyke negative of items 1 and 2
5	Reproductions of items 1, 2 or 3

Drawings Available: Master drawing 900J396; breaker outline 314C218; mounting blocks 455D791 and 369D592.

Technical Manual: Navships No. 362-2228. This booklet per MIL-M-15071. When required, order BVR-TM-378.

Handle Yokes: Provide interlocking of two or three one-pole breakers for simultaneous operation. Individual pole tripping is obtained without normal trip indicating (center) position.

Poles	Style Number	National Stock No.
2	207B508H01	H5925-00-202-0938
3	207B508H02	H5925-00-296-8926

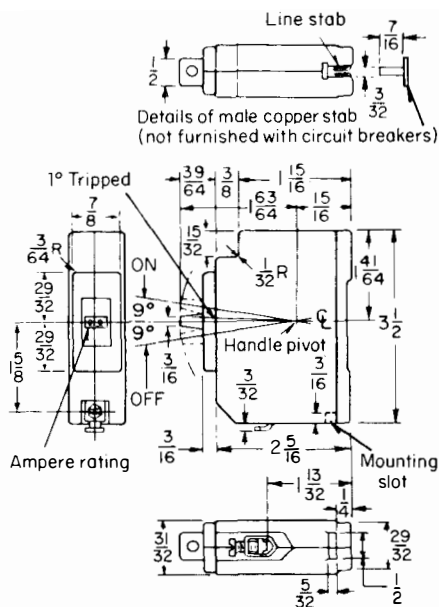
- ② Tripping element omitted for manual disconnect. Letter "N" hot stamped in white on handle.
③ In Dc or single phase panel applications, basic pattern is one molded base accommodating four single-pole breakers. (See pages 7 and 8.)

- ④ In 3-phase application where basic pattern is three molded bases, one 454D509G04 and two 454D509G05 are required, each base accommodating two breakers per circuit (See page 7.)
⑤ For 3-phase application where basic pattern is one molded base accommodating up to six breakers or two breakers per circuit (See pages 8 and 9.)

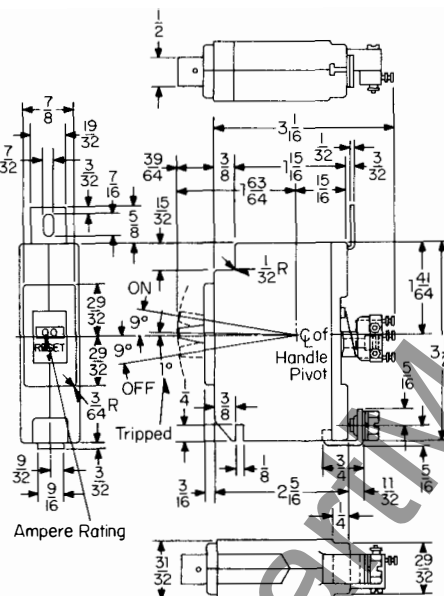


Outline Dimensions ALB-1 Breaker and Mounting Blocks

Breaker Outline



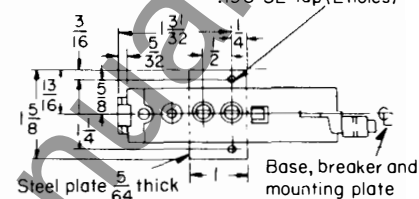
Standard Breaker



Special Breaker with Auxiliary Switch

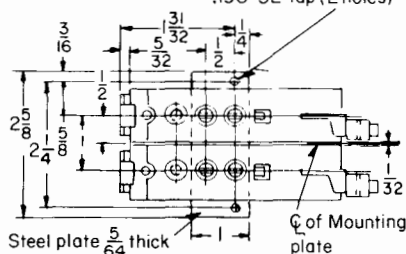
Single Base, Front Panel Supported (454D509G01)

2 Screws, steel, .190-32 X 3 furnished with lockwashers for securing to panel front cover
.190-32 Tap (2 holes)

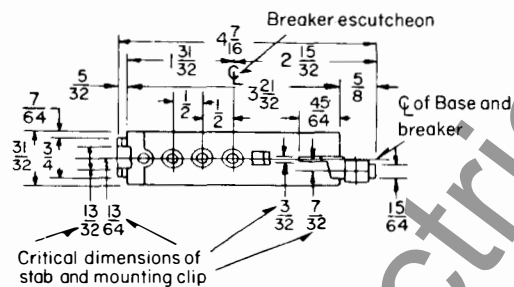


Two Breaker Base, Front Panel Supported (454D509G03)

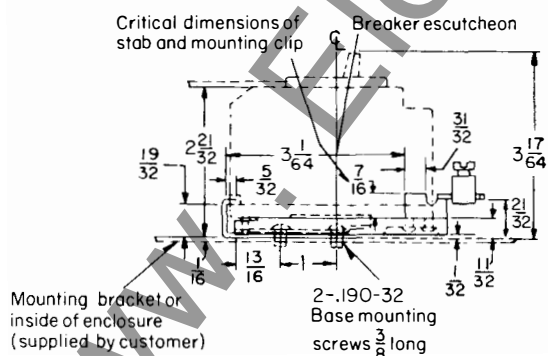
2 Screws, steel, .190-32 X 3 furnished with lockwashers for securing to panel front cover
.190-32 Tap (2 holes)



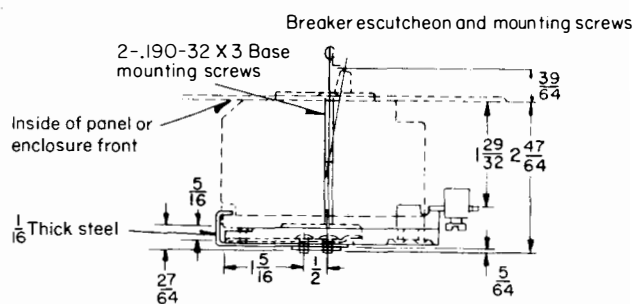
Single Base Surface Mounted (454D509G02)



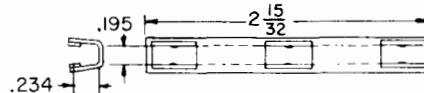
Mounting of Surface Mounted Base (Side View)



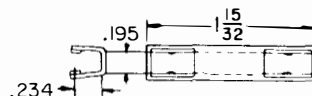
Mounting of Front Panel Supported Bases (Side View)



3 Pole Handle Yoke (207B508H02) ©



2 Pole Handle Yoke (207B508H01) ©





Application in Dc and 1 Phase Panels
(2 Separate Bases shown. Basic Pattern is
1 Molded Base Accommodating 4 Single Pole Breakers)

[illegible]

Technical drawing of a mechanical part, likely a handle pivot, showing dimensions and a watermark.

Dimensions (in inches):

- Overall height: $2\frac{7}{8}$
- Overall width: $1\frac{1}{4}$
- Bottom flange width: $\frac{5}{64}$
- Bottom flange thickness: $\frac{9}{16}$
- Top flange width: $\frac{15}{32}$
- Top flange thickness: $\frac{3}{16}$
- Top flange height: $\frac{15}{32}$
- Top flange width: $\frac{5}{64}$
- Top flange thickness: $\frac{9}{16}$

Label: Handle pivot

[illegible][illegible]

Technical drawing of a rectangular plate with the following dimensions and features:

- Overall width: 7
- Overall height: $\frac{3}{8}$
- Top edge: $\frac{1}{32}$ (from top surface to centerline)
- Left edge: $\frac{63}{64}$ (from bottom surface to centerline)
- Bottom edge: $\frac{3}{8}$ (from bottom surface to centerline)
- Distance from left edge to center of first hole: $\frac{13}{64}$
- Distance between centers of two holes: $6\frac{1}{4}$
- Distance from right edge to center of second hole: $\frac{3}{8}$
- Features: 2 holes (indicated by circles with crosses), 2 C bores $\frac{1}{4}$ Deep (indicated by circles with dots).



October, 1978
Supersedes Price List 29-220,
pages 9-10, dated February 17, 1969

Mailed to: E, C/1905/PL

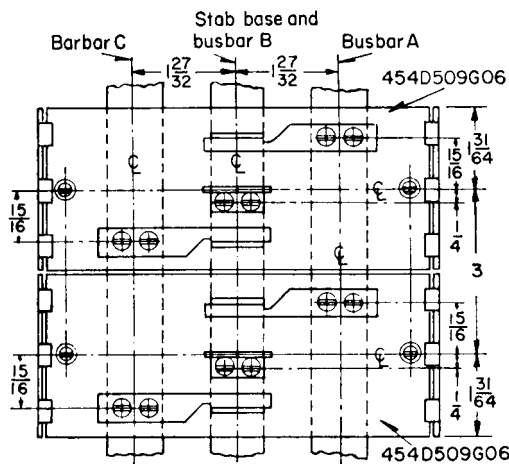
Types ALB-1, NLB-1, 125 Volts Ac, Dc;
50 Amperes Maximum, 5000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

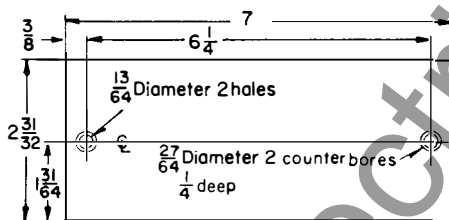
ALB-1 Breaker Mounting Blocks

3 Phase Panel Application

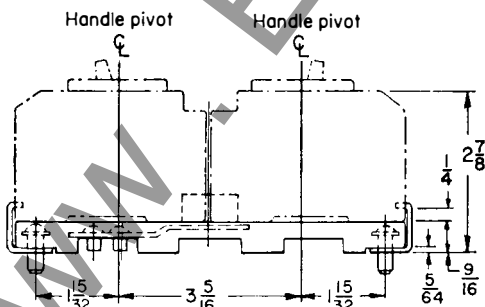
(For One or Three Breakers per Load Circuit)



Outline Dimensions for Mounting Base 454D509G06

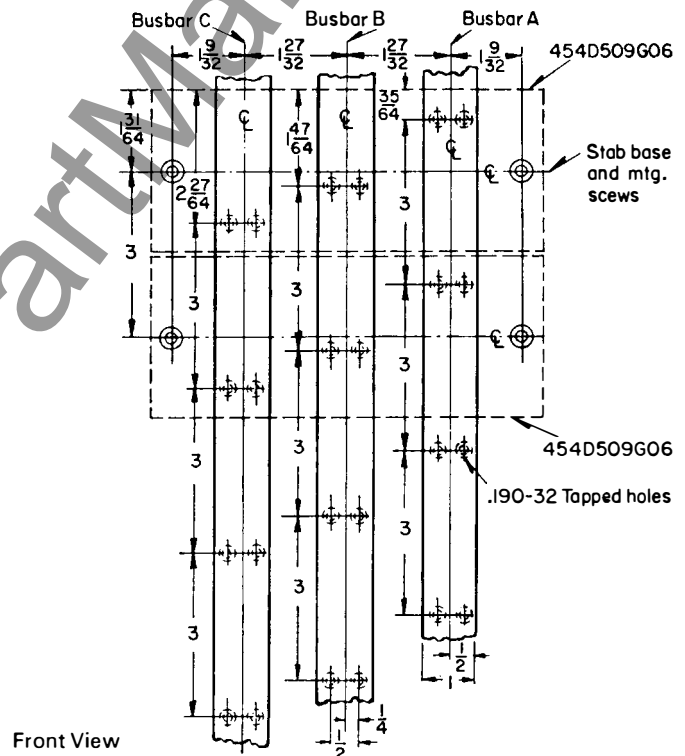


Outline of Base (Side View) 454D509G04, 454D509G05, 454D509G06, 454D509G08



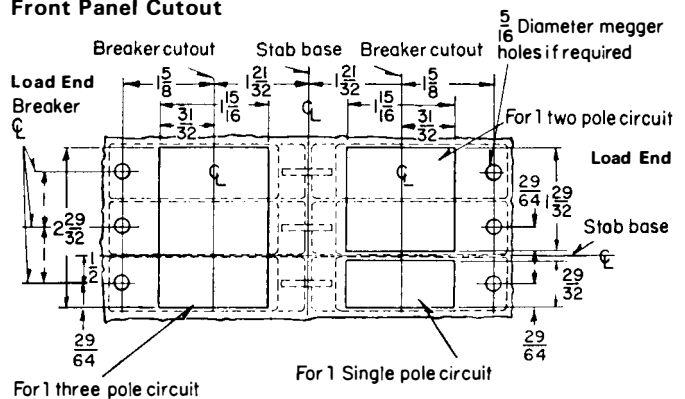
Bus Bar Drilling for 3 Phase Panel Application

For One or Three Breakers per Load Circuit
(1/4 x 1 Copper Bus not Supplied)



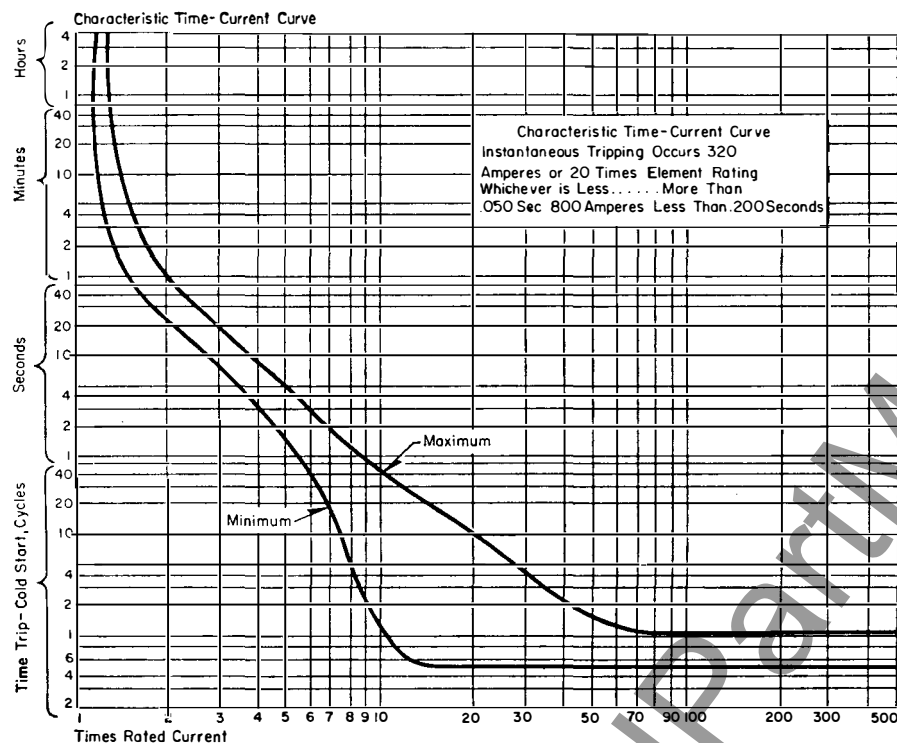
Front View

Front Panel Cutout





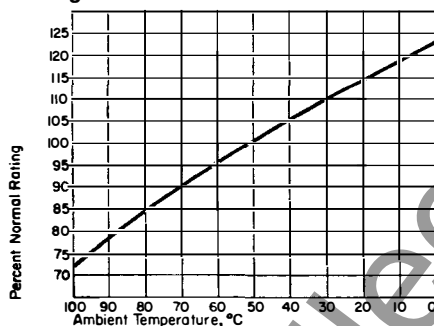
Characteristic Curves ALB-1 Breaker Characteristic Time-Current Curve



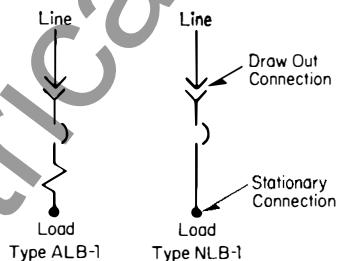
MIL-C-17588

This specification includes the ALB-1 type circuit breaker. It requires that this breaker carry 115% of current ratings for more than one hour and that the primary elements initiate tripping at 138% rated current within one hour and at 200% in 10 to 100 seconds. A tripping characteristic of the primary element is based on the current flowing through all poles in series and in an ambient of 50°C. The minimum instantaneous trip setting shall be 320 amperes or 20 times the element rating, whichever is less, and trip at not less than .050 second. At 800 amperes the breaker must trip at .200 second or less.

Characteristic Temperature-Rating Curve



Wiring Diagram





October, 1978
Supersedes Price List 29-220,
pages 11-12, dated July 1, 1974

Mailed to: E, C/1905/PL

Types AQB-A100, NQB-A100, 250 Volts Dc,
500 Volts Ac, 100 Amperes Maximum,
15,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-A100 and NQB-A100 Breakers

Note: AQB-A100 and NQB-100 breakers
are sold for replacement only. They are
no longer on Navy Qualified Product
list.

Specification: MIL-C-17361

15-100 Amperes
500 Volts Ac and 250 Volts Dc
Two or Three-Pole

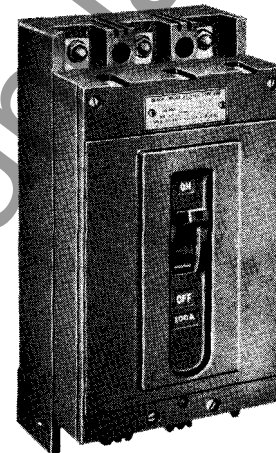
Interrupting Rating

15,000 Amps Ac and 10,000 Amps Dc

AQB-A100 circuit breakers are designed for
use in lighting and distribution panelboards
and switchboards for the protection of feed-
er and motor branch circuits.

Trip units with current ratings of 15, 25, 50,
75 and 100 can be quickly interchanged
and a conversion kit is available to change
a 3-pole, 500 volt AQB-A100 to a non-
automatic NQB-A100 circuit interrupter.
NQB-A100 breakers have a maximum con-
tinuous current rating of 100 amperes, but
they are used only as disconnects since
there is no automatic opening device.

Those breakers (and interrupters) designed
for Dc motor circuits and for Ac feeder cir-
cuits (designated with a "BF" in amp rating
column of price table) have fixed instan-
taneous settings of 600%-700% continuous
current ratings. Those having a magnetic
element set to trip at 1200%-1400% are
applied on Ac motor circuits. Breakers de-
signed with "BE" are calibrated for Dc
application.



AQB-A100

Net Prices See Price List 29-020

Cont. Ampere Rating	Instantaneous Trip Setting in Amperes		Complete Breaker②		Breaker Frame Only②		Trip Unit Only	
	Low	High	Style Number	National Stock No.	Style Number	National Stock No.	Style Number	National Stock No.
Two-Pole, 250 Volts Dc								
15-BE	90	105	1764 676	None Assigned	1764 638	None Assigned	1764 640	.....
25-BE	150	175	1764 677	None Assigned	1764 638	None Assigned	1764 641	H5925-00-248-1104
50-BE	300	350	1764 678	None Assigned	1764 638	None Assigned	1764 642	.....
75-BE	450	525	1764 679	None Assigned	1764 638	None Assigned	1764 643	H5925-00-248-1108
100-BE	600	700	1764 680	None Assigned	1764 638	None Assigned	1764 644	.....
Two-Pole, 500 Volts Ac								
15-BF	90	105	1764 681	None Assigned	1764 638	None Assigned	1764 645	.....
15-B	180	210	1764 682	None Assigned	1764 638	None Assigned	1764 646	H5925-00-629-0975
25-BF	150	175	1764 683	None Assigned	1764 638	None Assigned	1764 647	.....
25-B	300	350	1764 684	None Assigned	1764 638	None Assigned	1764 648	H5925-00-628-0695
50-B	600	700	1764 685	None Assigned	1764 638	None Assigned	1764 649	H5925-00-248-1078
75-B	900	1050	1764 686	None Assigned	1764 638	None Assigned	1764 650	H5925-00-248-1082
100-B	1200	1400	1764 687	None Assigned	1764 638	None Assigned	1764 651	.....
100③	Non-Automatic		1764 688	None Assigned	1764 638	None Assigned	1764 652	.....
Three-Pole, 250 Volts Dc								
15-BE	90	105	1764 689	.....	1764 639	H5925-00-258-2945	1764 653	H5925-00-608-0972
25-BE	150	175	1764 690	H5925-00-399-8120	1764 639	H5925-00-258-2945	1764 654	H5925-00-553-9745
50-BE	300	350	1764 691	.....	1764 639	H5925-00-258-2945	1764 655	H5925-00-383-3814
75-BE	450	525	1764 692	.....	1764 639	H5925-00-258-2945	1764 656	H5925-00-248-1371
100-BE	600	700	1764 693	H5925-00-399-8127	1764 639	H5925-00-258-2945	1764 657	H5925-00-608-0973
Three-Pole, 500 Volts Ac								
15-BF	90	105	1764 694	.....	1764 639	H5925-00-258-2945	1764 658	H5925-00-502-6719
15-B	180	210	1764 695	.....	1764 639	H5925-00-258-2945	1764 659	H5925-00-248-1453
25-BF	150	175	1764 696	H5925-00-658-9609	1764 639	H5925-00-258-2945	1764 660	H5925-00-215-3758
25-B	300	350	1764 697	H5925-00-265-9474	1764 639	H5925-00-258-2945	1764 661	H5925-00-248-1449
50-BF	300	350	1764 698	.....	1764 639	H5925-00-258-2945	1764 662	H5925-00-248-1442
50-B	600	700	1764 699	H5925-00-396-2339	1764 639	H5925-00-258-2945	1764 663	H5925-00-518-5979
75-BF	450	525	1764 700	.....	1764 639	H5925-00-258-2945	1764 664	H5925-00-248-1436
75-B	900	1050	1764 701	H5925-00-396-2345	1764 639	H5925-00-258-2945	1764 665	H5925-00-248-1437
100-BF	600	700	1764 702	.....	1764 639	H5925-00-258-2945	1764 666	H5925-00-248-1429
100-B	1200	1400	1764 703	H5925-00-396-2352	1764 639	H5925-00-258-2945	1764 667	H5925-00-588-2453
100③	Non-Automatic		1764 704	H5930-00-259-9440	1764 639	H5925-00-258-2945	1764 668	H5925-00-699-1111

Note: Breakers with ratings other than those given on this page are considered special and full description data must be provided.

② Styles listed include slip-type connectors for rear connections. Order front terminal connectors separately if required. No additional charges for front connectors ordered with breakers or frames.

③ Type NQB-A100 non-automatic. To convert 3-pole AQB breaker to NQB breaker, order style 1764 668 only.



AQB-A100 and NQB-A100 Breakers, Continued

Front Connected Breakers

For the load ends of panelboard breakers and for other front terminal applications, pressure connectors should be ordered.

Prices given below apply only when connectors are ordered separately. When breakers and the required lugs are ordered simultaneously, these lugs will be supplied without charge.

Cable Range	Navy Cable Size, Max.④	Description	Style Number	National Stock No.
N3-N14	14,340	One Pressure Connector	1763 660	None Assigned
N23-N40	38,910	One Pressure Connector	1763 661	None Assigned
N50-N75	75,780	One Pressure Connector	1763 662	None Assigned

④ Circular mils area.

Switchboard Mounting

Complete breakers and frames include mounting hardware. Female slip connectors are mounted in the breaker base for plugging onto stud projections of terminal mounting block assemblies. Order one mounting block assembly for each end of the breaker.

Number Poles	Description	Style Number	National Stock No.
2	Mounting Block Assembly	1764 675	None Assigned
3	Mounting Block Assembly	1764 674	None Assigned
2 or 3	Mounting Block Only	1764 240	H5940-00-643-7194
.....	One Stud Assembly - Complete with 4 Nuts	1631 442	H5940-00-501-9120

Net Weight, Lbs.

Terminal Mounting Supports (Set of Two)

	Frame
2-Pole Mounting Block Assembly	2-Pole AQB - 7.375
2.75	2-Pole NQB - 7.375
3-Pole Mounting Block Assembly	3-Pole AQB - 7.875
3.25	3-Pole NQB - 7.875

Complete Breaker Trip Unit

2-Pole AQB	10.00	2-Pole AQB - 2.625
2-Pole NQB	8.75	2-Pole NQB - 1.375
3-Pole AQB	10.75	3-Pole AQB - 2.875
3-Pole NQB	9.50	3-Pole NQB - 1.625

Additions

Handle Lock: When specified, order style 1614 485. One furnished without charge per every 10 breakers, when requested.

Mechanical Interlock: When a mechanical interlock (switchboard use) is desired for a pair of breakers. Order by description. (Not submitted for Navy approval).

Fungus-Moisture Resistant Treatments: (Jan-T-152, Jan-C-173 or MIL-V-173) if specified, contact Westinghouse. External parts are coated; trip units are not treated.

Spare Parts Boxes: Per MIL-B-233: After determining box size or number of spare trips to be stored therein, contact Westinghouse for quotation.

Technical Manual Navships 362-0819-per MIL-M-15071: When required, specify IB-29-062-CIA.

Individual Reproductions: When required, reproductions of master drawings, outline drawings and certification sheets can be ordered as follows:

Item	Description
1	Full size photolith tracing of master drawing on cronoflex (mylar)
2	Outline and drilling plan on cronoflex (mylar)
3	Certification data on cronoflex (mylar)
4	Van Dyke negatives of items 1 or 2
5	Reproductions of Items 1, 2, or 3

Drawings Available: Master drawing 1-JF-630; rear connected breaker outline, drilling and wiring diagram 20-B-2881; front connected breaker outline, drilling and wiring diagram 30-B-3837.

400 Cycle Breakers: Refer to Westinghouse.

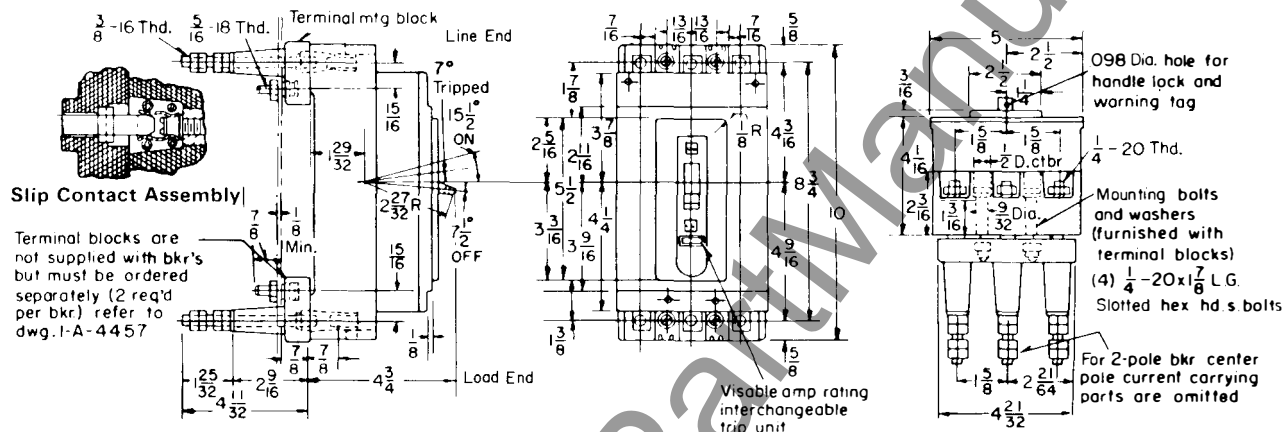
October, 1978
Supersedes Price List 29-220,
pages 13-14, dated February 17, 1969

Types AQB-A100, NQB-A100, 250 Volts Dc,
500 Volts Ac, 100 Amperes Maximum
15,000 Amperes I.C.

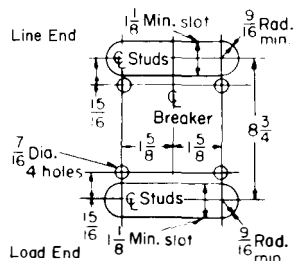
Mailed to: E, C/1905/PL

AB DE-ION® Circuit Breakers for Naval Shipboard Use

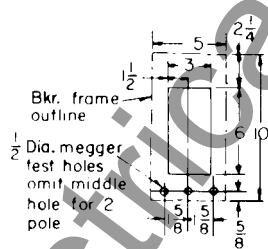
Outline Dimensions AQB-A100 and NQB-A100 Breakers



Drilling Plan For Mounting Panel (Front View)

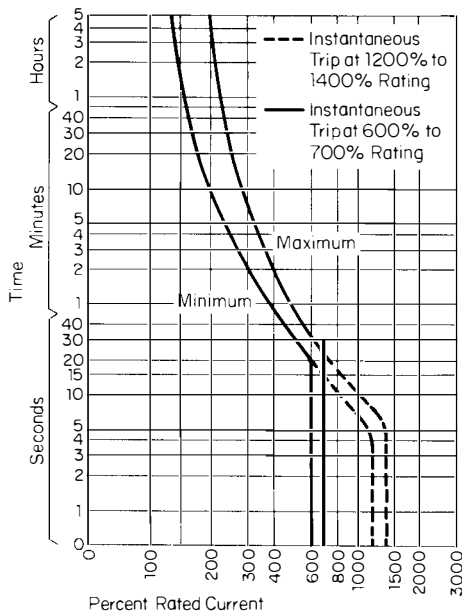


Front Cover Cutout⁴





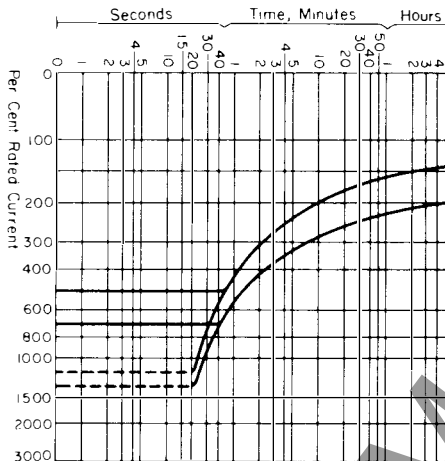
Characteristic Curve AQB-A100 Breakers



Operating Characteristics

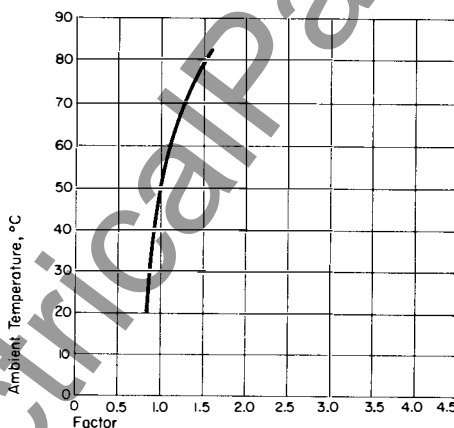
Trip Unit Rating 15-100 Amperes
50°C Ambient - Cold Start, 60 Cycle, Ac or Dc

400 Cycle Breakers



Operating Characteristics
Trip Unit Rating 15-100 Amperes
50°C Ambient - Cold Start
400 Cycle Ac

Trip Unit Rating



To determine the trip unit rating to be used, when the load current and ambient are known, multiply the load current by the factor obtained from this curve for the known ambient. The result will be the ideal trip unit rating. However, since trip units are furnished only with standard ratings as per Navy spec., select the standard trip unit whose rating is equal to or one rating higher than the ideal rating.

Specification MIL-C-17361

This specification covers all thermal-magnetic AQB breakers. It requires that they carry 150% of current ratings for at least one hour and that thermal elements initiate tripping at 225% rated current within one hour and at 600% in 25 seconds plus or minus 25%. The instantaneous magnetic settings for each continuous ratings are based on intended applications. (Thermal tripping tests are conducted with all poles in series in 50°C ambient; each pole is tested individually to check magnetic settings.)



Westinghouse Electric Corporation
Low Voltage Breaker Division
Beaver, Pennsylvania 15009

Technical Data
29-220

Page 15

October, 1978
Supersedes Price List 29-220,
pages 15-16, dated July 1, 1974,
and Supp. page 16.1 dated August 7, 1978.

Mailed to: E, C/1905/PL

Types AQB-A101 **NQB-A101**,
250 Volts Dc, 500 Volts Ac
100 Amperes Maximum, 15,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-A101 and NQB-A101 Breakers Specification: MIL-C-17361 15-100 Amperes 500 Volts Ac and 250 Volts Dc 3-Pole

Interrupting Rating

15,000 Amps Ac and 10,000 Amps Dc
Non-Interchangeable Trip Unit
Class: Hi Shock MIL-S-901: 50°C Ambient

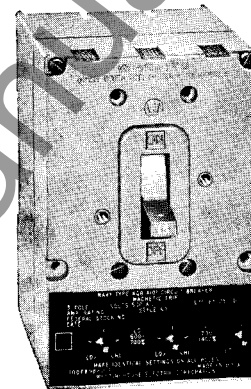
AQB-A101 circuit breakers are designed for
use in lighting and distribution panelboards
and for switchboards in the protection of
feeder and motor branch circuits.

These breakers have adjustable instantan-
eous trip settings of "lo", "intermediate",

and "hi". The "lo" setting is 500%-700% of
continuous current rating. It is designed for
Dc motor circuits and Ac feeder circuits. The
"hi" setting is 1200%-1400% of continuous
current rating and is designed for applica-
tion on Ac motor circuits. The intermediate
setting may be used to increase lo setting
trip amperes or decrease hi setting trip am-
peres as may be required.

NQB-A101 circuit breakers have a maxi-
mum continuous current rating of 100 am-
peres. They are used only as disconnects,
since they do not include an automatic
opening device.

Test Report Number: 5419-43.



AQB-A101

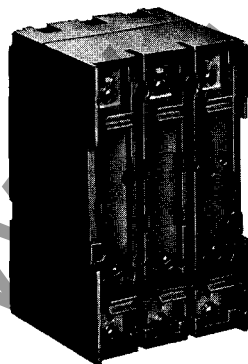
Net Prices See Price List 29-020

Type③④⑤	Trip Unit Rating	Instantaneous Trip Setting②		Thermal Magnetic Style	National Stock Number	Magnetic Only Style	National Stock Number
		Hi	Lo				
AQB-A101	15 Amp	180- 210	75-105	458D509G11	H5925-00-876-9216	458D511G11	None Assigned
AQB-A101	25 Amp	300- 350	125-175	458D509G12	H5925-00-876-9217	458D511G12	None Assigned
AQB-A101	50 Amp	600- 700	250-350	458D509G13	H5925-00-876-9218	458D511G13	None Assigned
AQB-A101	75 Amp	900-1050	375-525	458D509G14	H5925-00-876-9219	458D511G14	None Assigned
AQB-A101	100 Amp	1200-1400	500-700	458D509G15	H5925-00-876-9220	458D511G15	None Assigned
AQB-A101	100G Amp	1200-1400	500-700	458D509G16	.....	.....	None Assigned
NQB-A101	100 Amp	Non-Automatic	.....	458D509G20	.....	.....	None Assigned
400 Cycle							
AQB-A101	15H Amp	.....	.....	458D510G11	H5925-00-867-7328	458D512G11	None Assigned
AQB-A101	25H Amp	.....	.....	458D510G12	H5925-00-867-7329	458D512G12	None Assigned
AQB-A101	50H Amp	.....	.....	458D510G13	H5925-00-986-7313	458D512G13	None Assigned
AQB-A101	75H Amp	.....	.....	458D510G14	H5925-00-986-7314	458D512G14	None Assigned
AQB-A101	100H Amp	.....	.....	458D510G15	H5925-00-972-3000	458D512G15	None Assigned
AQB-A101	100GH Amp	.....	.....	458D510G16	.....	.....	None Assigned

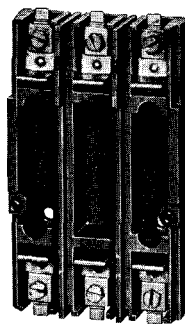
- ② Instantaneous trip setting at 1200-1400% Hi or 500-700% Lo. Set at Lo position at factory.
③ Complete breaker does not include mounting bases. Type required must be ordered separately.
④ Front connected bases include cable lugs. Cover cable sizes 2828CM to 100,000CM.
⑤ Only 3-pole breakers are furnished, for 2-pole applications make connections to outside poles.

Panelboard Mounting

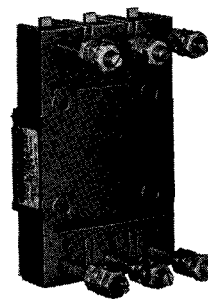
Type	Style Number	Weight	National Stock No.
Single Base Front Connected	315C364G03	2.75 Lbs.	None Assigned
Single Base Rear Connected	315C364G02	3.00 Lbs.	None Assigned
Single Base, Rear Connected, Line Front Connected, Load			
For use with rear connected fuse base	315C364G04	3.00 Lbs.	None Assigned
Double Base Front Connected	458D569G02	3.50 Lbs.	None Assigned
Double Base Rear Connected	458D569G03	4.00 Lbs.	None Assigned



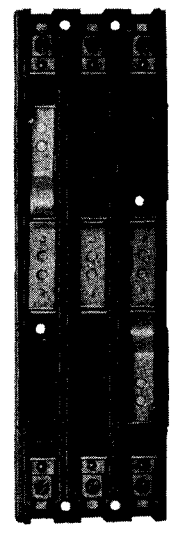
AQB-A101
Breaker with
Single Front
Connected Base



AQB-A101
Single Mount-
ing Base - Rear
Connected



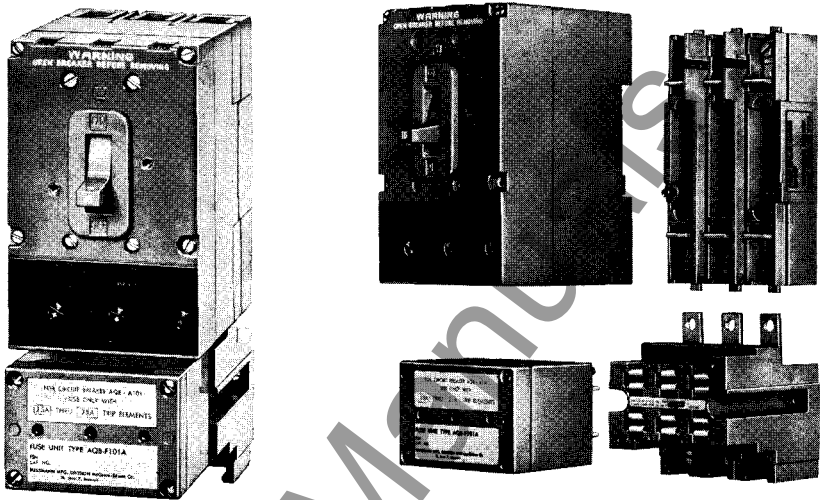
AQB-A101
Double Mount-
ing Base -
Front Connect-
ed





Fuse Unit Assemblies

AQB-F101A and AQB-F101B fuse units are designed for use in conjunction with standard AQB-A101 circuit breakers on circuits where a fault potential of up to 100,000 amperes exists.



Complete Fuse Unit Assembly			Shipped As:		
Style Number	Rating	Con- nection	Fuse Unit②		Fuse Unit Mounting Base
			Type	Style Number	Style Number
372B155G01	15-25 Amps	Front	AQB-F101A	504C010H01	655D258G01③
372B155G02	15-25 Amps	Rear	AQB-F101A	504C010H01	655D258G05③
372B155G03	50, 75, & 100 Amps	Front	AQB-F101B	504C010H02	655D258G03
372B155G04	50, 75, & 100 Amps	Rear	AQB-F101B	504C010H02	655D258G06

② Individual fuses are not replaceable; replace with complete unit.
③ To convert for use with high rating fuse unit (AQB-F101B) in field, remove rejection pin per instructions on fuse unit mounting base nameplate.



October, 1978
Supersedes Price List 29-220,
pages 17-18, dated July 1, 1974

Mailed to: E, C/1905/PL

Types AQB-A101, NQB-A101,
250 Volts Dc, 500 Volts Ac,
100 Amperes Maximum, 15,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

Additions

Shunt Trip: Breakers can be equipped with a shunt trip attachment for tripping the breaker from a remote point, and can be supplied with coils for 120 volts, 60 cycle or for 120 volts Dc. These shunt trips have momentary rated coils and are supplied with an auxiliary switch to be wired in series for protection (Auxiliary switch included with the shunt trip. Do not order separately).

To order, specify style number of standard breaker required plus style number of shunt trip attachment from table below. (Must be factory installed.)

Shunt Trip Style Number	Breaker Type	Shunt Trip – Volt- age and Fre- quency
4976D65G06	Thermal Magnetic	120/60
4976D65G02	Thermal Magnetic	120/Dc
4976D65G08	Magnetic Only	120/60
4976D65G04	Magnetic Only	120/Dc

Auxiliary Switch: Breakers can be supplied with internally mounted auxiliary switch to open or close control circuits as breaker operates. Each switch provides one "A" contact and one "B" contact. "A" contact is closed when breaker is closed, open when breaker is open. "B" contact is open when breaker is closed and closed when breaker is open. When ordered with one switch it is normally mounted in right pole, may be specified mounted in left pole. A maximum of 2 switches can be supplied: one in left and one in right pole. Order by description.

Note: One auxiliary switch normally supplied with shunt trip attachments for cut-off switch and additional switches cannot be supplied on breakers with shunt trips.

Handle Lock: When specified, order style 1614485.

Rear Stud: Complete with 4 nuts, style number 208B801G01.

Fungus-Moisture Resistant Treatment: (JAN-T-152, JAN-C-173 or MIL-V-173). If specified, contact Westinghouse. External parts are coated.

Technical Manual: Navships No. 362-2314. This booklet per MIL-M-15071. When required, order BVR-TM-475A.

Drawings Available

- 900J429 – Master drawing for breaker and mounting bases.
- 900J439 – Master drawing for breaker with fuse unit and mounting bases.
- 459D448 – Outline and wiring diagram for breaker on single base.
- 654D255 – Outline and wiring diagram for breaker with fuse unit on single base.
- 459D449 – Outline and wiring diagram for breaker on double base.
- 654D256 – Outline and wiring diagram for breaker with fuse unit on double base.
- 657D205 – For fuse unit mounting base only.

Individual Reproductions: When required, reproduction of master drawings, outline drawings and certification sheets can be ordered as follows:

Item	Description
1	Full size photolith tracing of master drawing on cronoflex (mylar)
2	Outline and drilling plan on cronoflex (mylar)
3	Certification data on Cronoflex (mylar)
4	Van Dyke negatives of items 1 or 2
5	Reproductions of items 1, 2, or 3

Net Weights, Lbs.

AQB-A101 – 6.00
NQB-A101 – 5.75
AQB-F101A – 2.00
AQB-F101B – 2.00
Fuse Unit Mounting Base – 3.00

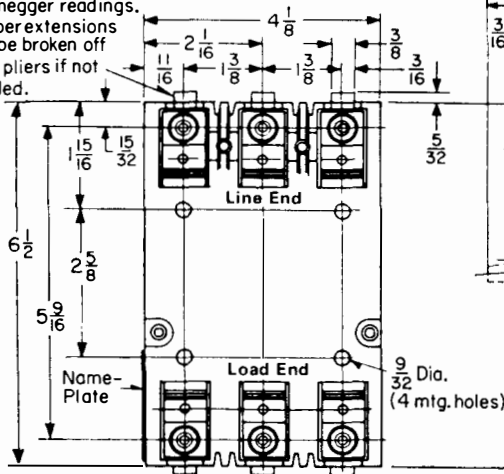
Ordering Information: See page 4.



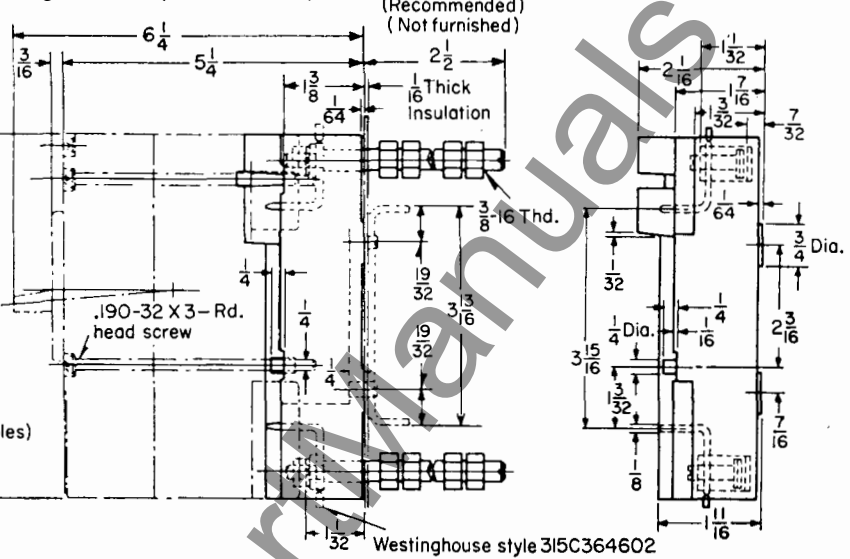
Outline Dimensions, AQB-A101 Breaker

For Single Breaker Mounted Base

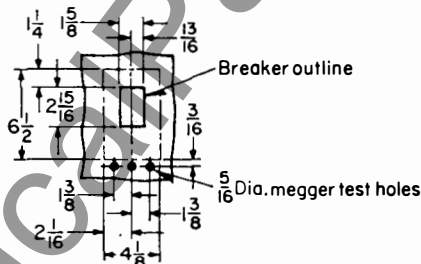
Copper extensions for megger readings. Copper extensions can be broken off with pliers if not needed.



Single Breaker (Rear Mounted)

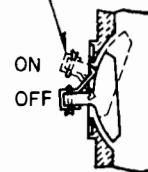


Drilling Plan For Single Mounted Base

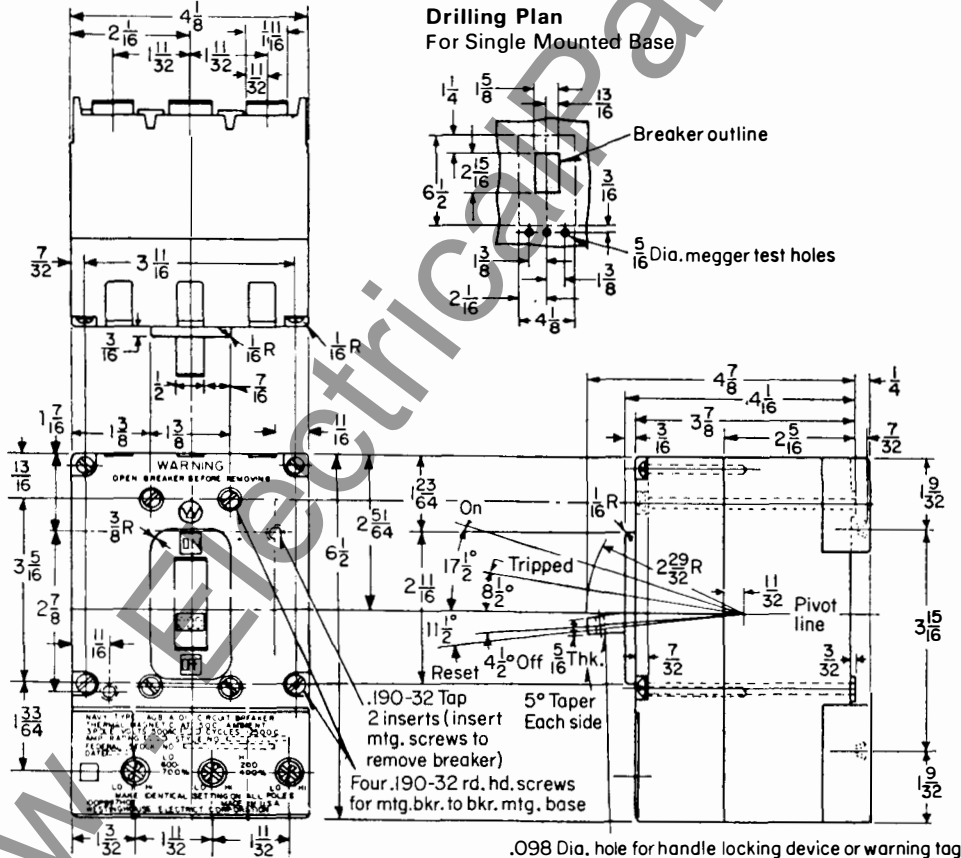


Circuit Breaker Handle Locking Device

Reverse position of lock to prevent breaker from opening



Westinghouse style 1614485 (Not supplied with circuit bkr.)



October, 1978
Supersedes Price List 29-220, pages 19-20
dated February 17, 1969

Types AQB-A101, NQB-A101,
250 Volts Dc, 500 Volts Ac
100 Amperes Maximum, 15,000 Amperes I.C.

Mailed to: E, C/1905/PL

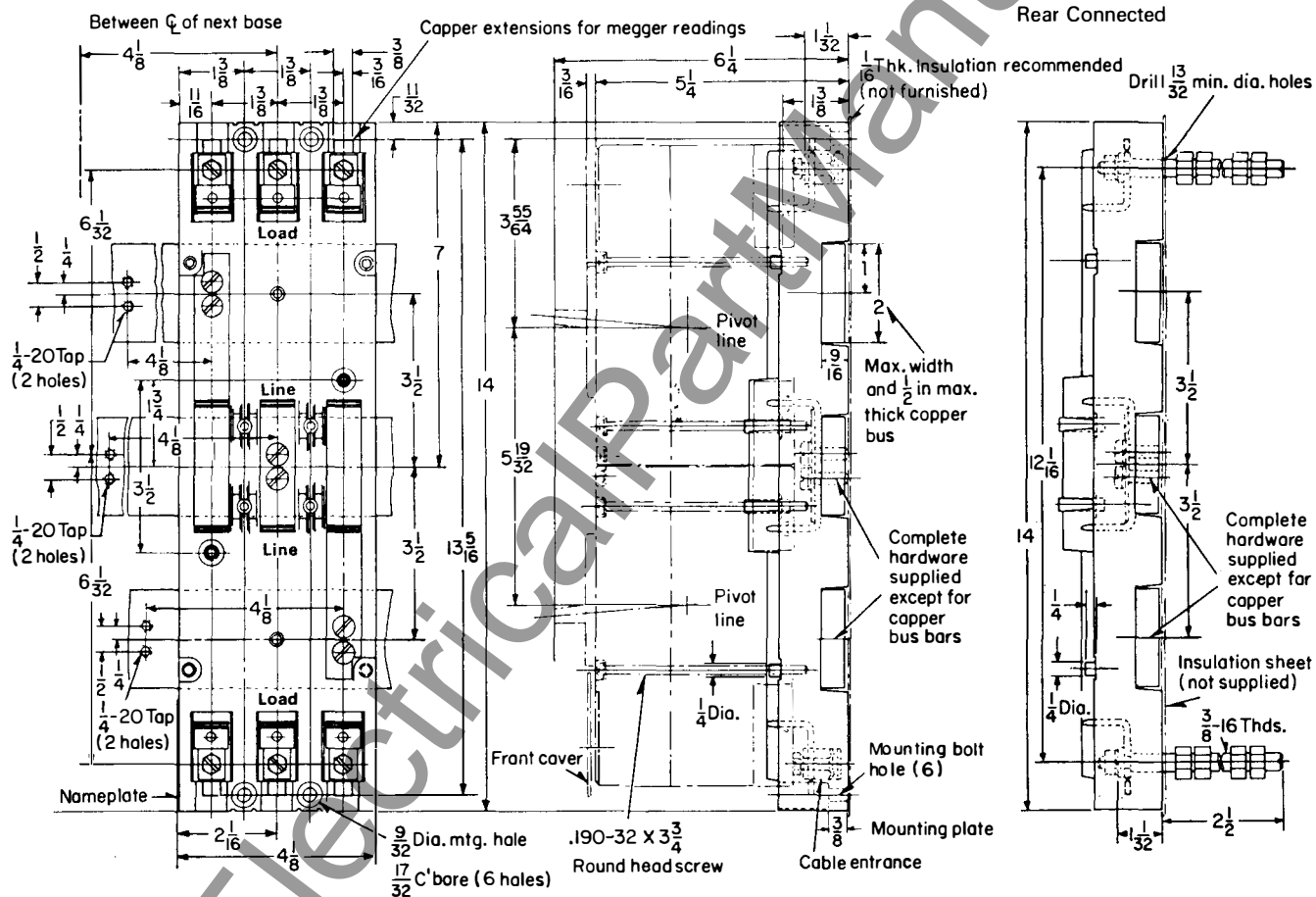
AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-A101 Breaker Mounting Blocks

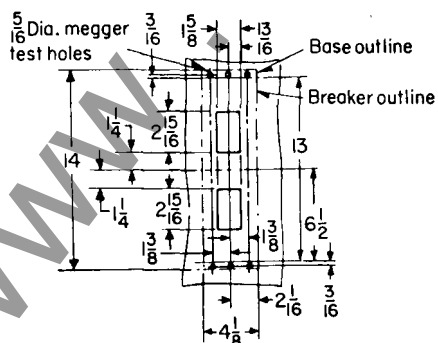
For Two Breaker Mounting Base

For Double Mounting Front Connected

For Double Mounting
Rear Connected

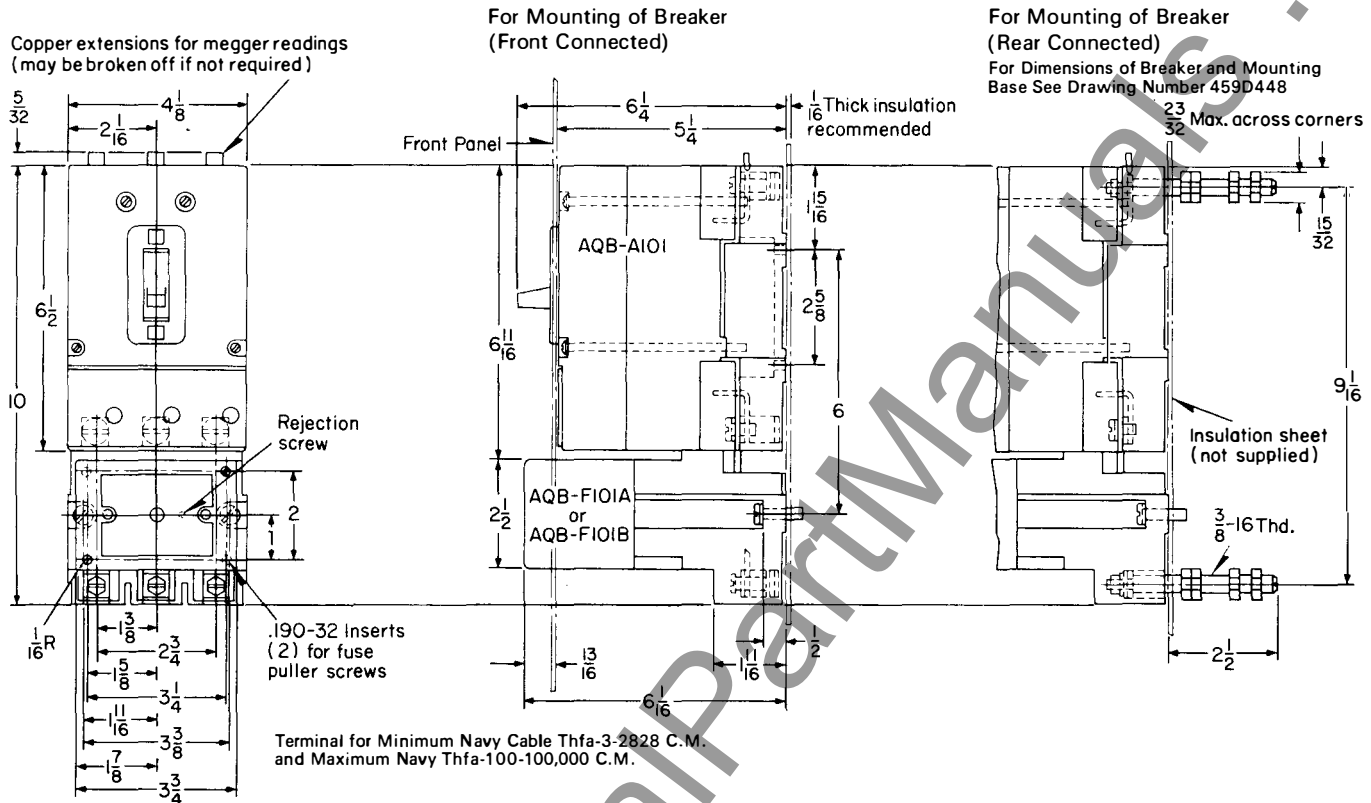


Front Cover Cutouts For Double Mounting Base

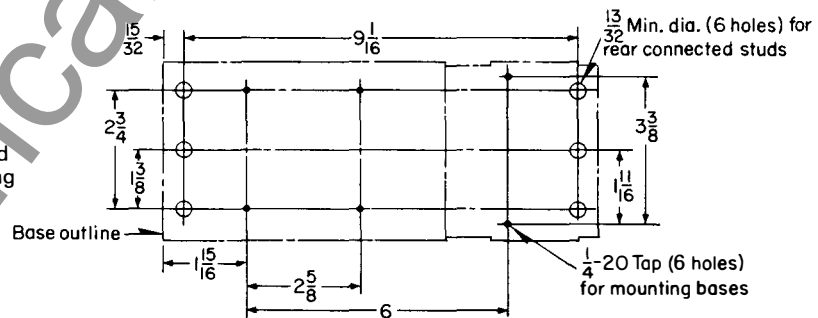




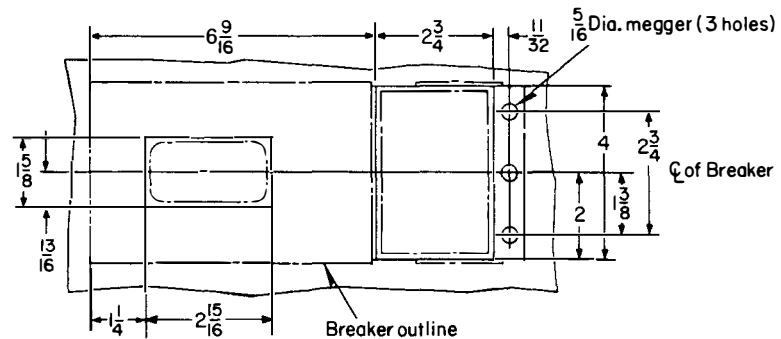
Outline Dimensions, Continued AQB-A101F Breakers, Single Base with Fuse Unit



Drilling Plan
For Rear Connected
Studs and Mounting
Bases



Front Panel Cutout



October, 1978
Supersedes Price List 29-220, pages 21-22,
dated February 17, 1969

Types AQB-A101, NQB-A101,
250 Volts Dc, 500 Volts Ac
100 Amperes Maximum, 15,000 Amperes I.C.

Mailed to: E, C/1905/PL

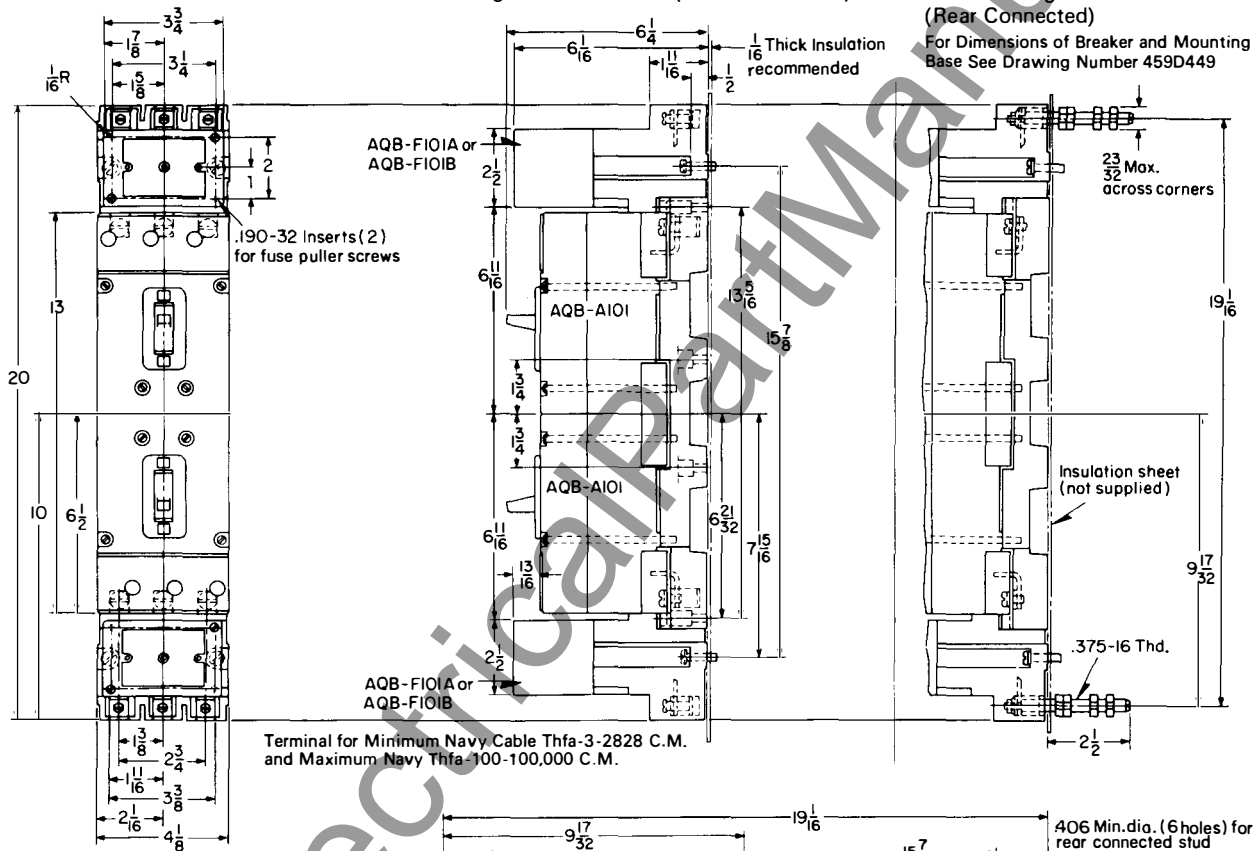
AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-A101 Breaker, Double Base with Fuse Units

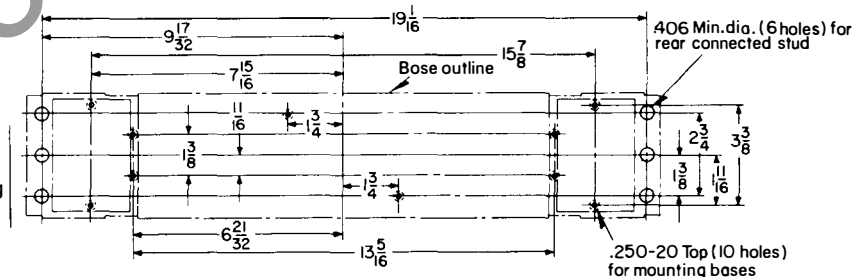
For Mounting of Two Breakers (Front Connected)

For Mounting of Two Breakers (Rear Connected)

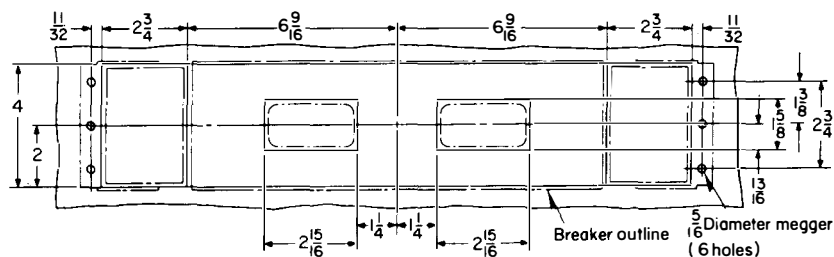
For Dimensions of Breaker and Mounting Base See Drawing Number 459D449



Drilling Plan For Rear Connected Studs and Mounting Bases

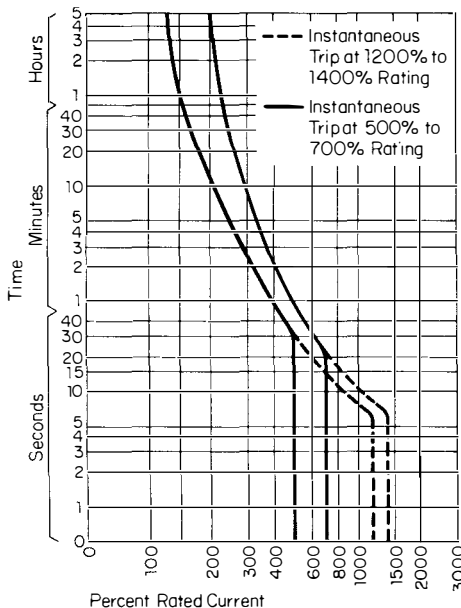


Front Panel Cutout



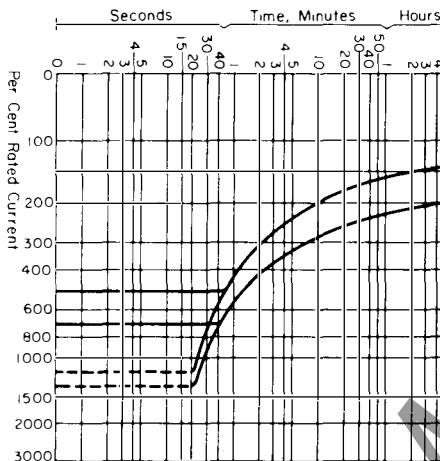


Characteristic Curves AQB-A101 Breakers



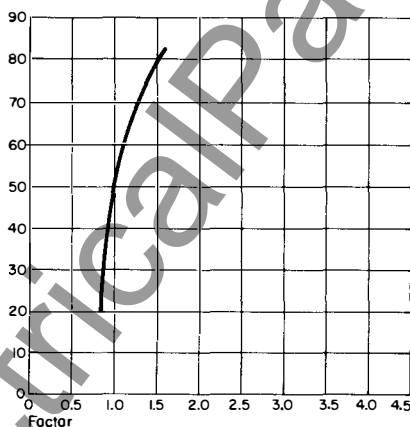
Operating Characteristics
Trip Unit Rating 15-100 Amperes
50°C Ambient - Cold Start, 60 Cycle,
Ac or Dc, Thermal Magnetic

400 Cycle Breakers



Operating Characteristics
Trip Unit Rating 15-100 Amperes
50°C Ambient - Cold Start
400 Cycle Ac, Thermal Magnetic

Trip Unit Rating

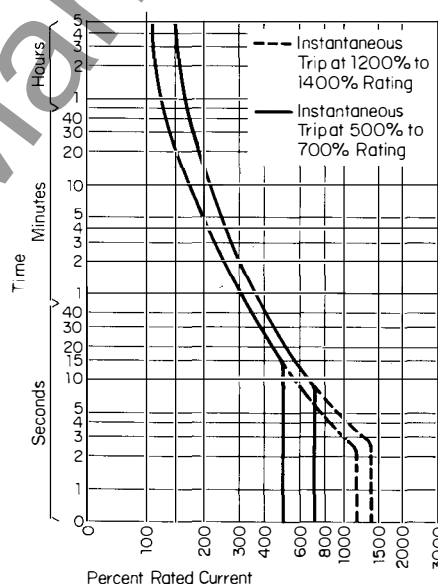


To determine the trip unit rating to be used, when the load current and ambient are known, multiply the load current by the factor obtained from this curve for the known ambient. The result will be the ideal trip unit rating. However, since trip units are furnished only with standard ratings as per Navy spec., select the standard trip unit whose rating is equal to or one rating higher than the ideal rating.

Specification MIL-C-17361

This specification covers all thermal magnetic AQB breakers. It requires that they carry 150% of current ratings for at least one hour and that thermal elements initiate tripping at 225% rated current within one hour and at 600% in 25 seconds plus or minus 25%. The instantaneous magnetic settings for each continuous ratings are based on intended applications. (Thermal tripping tests are conducted with all poles in series in 50°C ambient; each pole is tested individually to check magnetic settings.)

Generator Breakers



50°C Ambient Cold Start,
"G" rating, 60 or 400 Cycle
Ac, or Dc - Thermal Magnetic



October, 1978
Supersedes Price List 29-220, pages 23-24,
dated July 1, 1974.

Mailed to: E, C/1905/PL

Types AQB-A250, NQB-A250
250 Volts Dc, 500 Volts Ac
250 Amperes Maximum, 20,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-A250 and NQB-A250 Breakers

Specification: MIL-C-17361
125-250 Amperes
500 Volts Ac and 250 Volts Dc
Two and Three-Pole

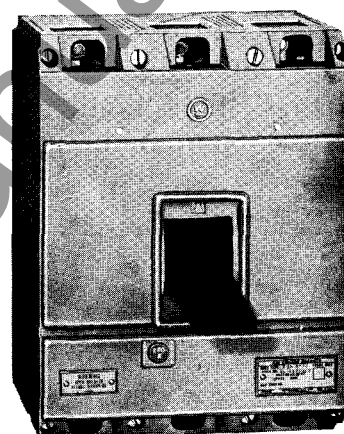
Interrupting Ratings

20,000 Amps Ac and 15,000 Amps Dc

AQB-A250 circuit breakers are used primarily to protect feeder circuits, however, those followed by "NM" in the price table have higher magnetic settings to allow for motor starting. Breakers with settings specifically for use with generators are designated "NG" in the price table.

These breakers are available with interchangeable trip units in ratings of 125, 150, 175, 225 and 250 amperes. The non-automatic NQB-A250 carries a 250 ampere rating and has copper conductors replacing the trip unit. Special generator breakers have trip units rated at 100, 160, and 250 amperes.

AQB-A250 breakers can be ordered with undervoltage release devices, auxiliary switches and shunt trip attachments complete with auxiliary switch. These attachments are also easily installed in the field. Test report number 5419-29.



Net Prices See Price List 29-020

Cont. Ampere Rating	Inst. Trip Setting – Amps				Complete Breaker ^②		Breaker Frame Only ^②		Trip Unit Only	
	Ac		Dc		Style Number	National Stock No.	Style Number	National Stock No.	Style Number	National Stock No.
	Low	High	Low	High						
Two-Pole 500 Volts Ac, 250 Volts Dc										
125-N	650	1300	650	1300	313C682G03	None Assigned	452D370G01	None Assigned	452D371G03	None Assigned
125-NM	1950	3900	2250	4100	313C682G04	None Assigned	452D370G01	None Assigned	452D371G04	None Assigned
150-N	650	1300	650	1300	313C682G05	None Assigned	452D370G01	None Assigned	452D371G05	None Assigned
150-NM	1950	3900	2250	4100	313C682G06	None Assigned	452D370G01	None Assigned	452D371G06	None Assigned
175-N	650	1300	650	1300	313C682G07	None Assigned	452D370G01	None Assigned	452D371G07	None Assigned
175-NM	1950	3900	2250	4100	313C682G08	None Assigned	452D370G01	None Assigned	452D371G08	None Assigned
225-N	650	1300	650	1300	313C682G09	None Assigned	452D370G01	None Assigned	452D371G09	H5925-00-064-7834
225-NM	1500	3000	1770	3550	313C682G10	None Assigned	452D370G01	None Assigned	452D371G10	None Assigned
250-N	650	1300	650	1300	313C682G11	None Assigned	452D370G01	None Assigned	452D371G11	None Assigned
250-NM	1700	3400	1850	3800	313C682G12	None Assigned	452D370G01	None Assigned	452D371G12	None Assigned
250 ^③	Non-Auto	Non-Auto	Non-Auto	Non-Auto	313C682G31	None Assigned	452D370G03	None Assigned	29B2710G05	None Assigned
Two Pole 500 Volts Ac, 250 Volts Dc Generator Circuit Breaker Applications										
100-NG	1175	2350	....	....	313C682G13	None Assigned	452D370G01	None Assigned	452D371G13	None Assigned
160-NG	1950	3900	....	....	313C682G14	None Assigned	452D370G01	None Assigned	452D371G14	None Assigned
250-NG	....	....	650	1300	313C682G15	None Assigned	452D370G01	None Assigned	452D371G15	None Assigned
Three-Pole 500 Volts Ac, 250 Volts Dc										
125-N	650	1300	650	1300	313C682G18	None Assigned	452D370G02	H5925-00-789-3718	452D371G18	None Assigned
125-NM	1950	3900	2250	4100	313C682G19	None Assigned	452D370G02	H5925-00-789-3718	452D371G19	None Assigned
150-N	650	1300	650	1300	313C682G20	None Assigned	452D370G02	H5925-00-789-3718	452D371G20	None Assigned
150-NM	1950	3900	2250	4100	313C682G21	None Assigned	452D370G02	H5925-00-789-3718	452D371G21	None Assigned
175-N	650	1300	650	1300	313C682G22	None Assigned	452D370G02	H5925-00-789-3718	452D371G22	None Assigned
175-NM	1950	3900	2250	4100	313C682G23	None Assigned	452D370G02	H5925-00-789-3718	452D371G23	None Assigned
225-N	650	1300	650	1300	313C682G24	None Assigned	452D370G02	H5925-00-789-3718	452D371G24	None Assigned
225-NM	1500	3000	1770	3550	313C682G25	None Assigned	452D370G02	H5925-00-789-3718	452D371G25	None Assigned
250-N	630	1300	650	1300	313C682G26	None Assigned	452D370G02	H5925-00-789-3718	452D371G26	None Assigned
250-NM	1700	3400	1850	3800	313C682G27	None Assigned	452D370G02	H5925-00-789-3718	452D371G27	None Assigned
250 ^③	Non-Auto	Non-Auto	Non-Auto	Non-Auto	313C682G36	None Assigned	452D370G04	None Assigned	29B2710G06	None Assigned
Three-Pole 500 Volts Ac, 250 Volts Dc Generator Circuit Breaker Applications										
100-NG	1175	2350	....	....	313C682G28	None Assigned	452D370G02	H5925-00-789-3718	452D371G28	None Assigned
160-NG	1950	3900	....	....	313C682G29	None Assigned	452D370G02	H5925-00-789-3718	452D371G29	None Assigned
250-NG	....	....	650	1300	313C682G30	None Assigned	452D370G02	H5925-00-789-3718	452D371G30	None Assigned

Note: Breakers with ratings other than those given on this page are considered as special and full description data must be provided.

^② Styles listed include slip-type connectors for rear connections. Order front terminal connectors separately if required; see page 24. No additional charges for front connectors ordered with breakers or frames.

^③ Type NQB-A250 non-automatic.



AQB-A250 and NQB-A250 Breakers, Continued

Net Prices See Price List 29-020

Cont. Ampere Rating	Instantaneous Trip Setting in Amperes ^①	Complete Breaker ^②		Breaker Frame Only ^②		Trip Unit Only	
		Style Number	National Stock No.	Style Number	National Stock No.	Style Number	National Stock No.

400 Cycle, Two-Pole, 500 Volts Ac

125-NH	910	1560	315C574G03	None Assigned	452D370G01	None Assigned	457D446G03	None Assigned
150-NH	910	1560	315C574G05	None Assigned	452D370G01	None Assigned	457D446G05	None Assigned
175-NH	910	1560	315C574G07	None Assigned	452D370G01	None Assigned	457D446G07	None Assigned
225-NH	910	1560	315C574G09	None Assigned	452D370G01	None Assigned	457D446G09	None Assigned
250-NH	910	1560	315C574G11	None Assigned	452D370G01	None Assigned	457D446G11	None Assigned

400 Cycle, Two-Pole, 500 Volts Ac Generator Circuit Breaker Applications

100-NGH	2020	3420	315C574G13	None Assigned	452D370G01	None Assigned	457D446G13	None Assigned
160-NGH	2020	3420	315C574G14	None Assigned	452D370G01	None Assigned	457D446G14	None Assigned
250-NGH	2520	4200	315C574G15	None Assigned	452D370G01	None Assigned	457D446G15	None Assigned

400 Cycle, Three-Pole, 500 Volts Ac

125-NH	910	1560	315C574G18	None Assigned	452D370G02	H5925-00-789-3718	457D446G18	None Assigned
150-NH	910	1560	315C574G20	None Assigned	452D370G02	H5925-00-789-3718	457D446G20	None Assigned
175-NH	910	1560	315C574G22	None Assigned	452D370G02	H5925-00-789-3718	457D446G22	None Assigned
225-NH	910	1560	315C574G24	None Assigned	452D370G02	H5925-00-789-3718	457D446G24	None Assigned
250-NH	910	1560	315C574G26	None Assigned	452D370G02	H5925-00-789-3718	457D446G26	None Assigned

400 Cycle, Three-Pole, 500 Volts Ac Generator Circuit Breaker Applications

100-NGH	2020	3420	315C574G28	None Assigned	452D370G02	H5925-00-789-3718	457D446G28	None Assigned
160-NGH	2020	3420	315C574G29	None Assigned	452D370G02	H5925-00-789-3718	457D446G29	None Assigned
250-NGH	2520	4200	315C574G30	None Assigned	452D370G02	H5925-00-789-3718	457D446G30	None Assigned

Switchboard Mounting

Complete breakers and frames include mounting hardware. Female slip connectors are mounted in breaker base to plug onto stud projections of terminal mounting block assemblies. Order one mounting block assembly for each end of breaker.

Description	Style Number	National Stock No.
One Stud Assembly complete with 4 nuts	1631 443	None Assigned
Terminal Mtg. Block (No Studs)	313C681G01	None Assigned
Mounting Block and Stud Set (3 Studs)	313C680G02	None Assigned
	(Net Weight - 2½ Lbs.)	

Front Connected Breakers

For connections made at front terminals, pressure type lugs required. If specified on same order, connectors furnished no charge. One connector per terminal. Select below.

Cable Range	Amps	Description	Style Number	National Stock No.
N40-N75	125	Solderless Connector	20B3055H14	None Assigned
N100-N125	150-175		20B3055H15	None Assigned
N150-N200	250		20B3055H16	None Assigned

Kit to Convert AQB Frame to NQB Breaker

Poles	Style Number	National Stock No.	Net Weight
3	29B2710G06	None Assigned	½ Lb.

② Styles listed include slip-type connectors for rear connections. Order front terminal connectors separately if required. No additional charges for front connectors ordered with breakers or frames.

③ For 400 cycle breakers with higher instantaneous trip ratings, refer to Westinghouse.



October, 1978
Supersedes Price List 29-220, pages 25-26,
dated July 1, 1974.

Mailed to: E, C/1905/PL

Types AQB-A250, NQB-A250
250 Volts Dc, 500 Volts Ac
250 Amperes Maximum, 20,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-A250 and NQB-A250 Breakers, Continued

Additions

Handle Lock: If required, order style 1720101. One furnished no charge per 10 breakers ordered, when requested. Net wt., .15 lb.

Mechanical Interlock: If mechanical interlock (switchboard use) is desired for a pair of breakers, order by description. (Not submitted for Navy approval.)

Auxiliary Switch: If required, style 452D379G02, national stock number 5930-00-732-8401. Internally mounted switch is used to open or close control circuits as breaker operates and is provided with "A" and "B" contacts. "A" contact is normally closed when breaker is closed and open when breaker is open; "B" is normally open when breaker is closed and closed with breaker open. It has the following rating at given voltages: 15 amp-125, 250 or 460 volts Ac; ½ amp-125 volts Dc; ¼ amp-250 volts Dc. Net weight, .17 lb.

Fungus - Moisture - Resistant Treatments: (JAN-T-152; JAN-C-173 or MIL-V-173): If specified, contact Westinghouse. External parts are coated; trip units are not treated.

Spare Parts Boxes - Per MIL-B-233: After determining box size or number of spare trips to be stored therein (one complete trip unit required for each 10 breakers or fraction thereof of a specified rating), contact Westinghouse for quotation.

Technical Manual - NAVSHIPS No. 362-2164: This booklet per MIL-M-15071. When required, order BVR-TM-379.

Shunt Trip: Shunt trip attachments for tripping the breaker electrically from a remote point are listed in table below. Shunt trips have momentary rating only and for protection must be connected in series with auxiliary switch. Auxiliary Switch (style 452D379G02) is included in shunt trip number shown below. Do not order separately. Net weight, .70 lb.

Nominal Voltage	Voltage Range	Style Number	National Stock No.
28 V Dc 115 V Ac	24- 32 90-130	452D377G05	None Assigned
120 V Dc 450 V Ac	90-130 360-500	452D377G07	None Assigned

Undervoltage Device: Automatically trips breaker when line voltage drops below 40 to 60% of normal. After undervoltage coil has dropped out and tripped breaker on reduced voltage, it automatically resets by breaker action. (If undervoltage coil is energized to 80% of normal). Select device below. Net weight, 1.12 lbs.

Nominal Voltage	Voltage Range	Pickup and Seal Volts (Minimum)	Dropout Voltage	Style Number	National Stock Number
450 Ac, 60 Cycle	360-500	360	290 Max. 45 Min.	452D837G01	None Assigned
250 Dc	175-355	150	25 Min.	452D837G02	None Assigned
33 Dc	30- 36	22	5 Min.	452D837G03	H5950-00-790-4869

Individual Reproductions: When required, reproduction of master drawings, outline drawings and certification sheets can be ordered as follows:

Item	Description
1	Full size photolith tracing of master drawing on cronoflex (mylar)
2	Outline and drilling plan on cronoflex (mylar)
3	Certification data on cronoflex (mylar)
4	Van Dyke negatives of items 1 or 2
5	Reproductions of items 1, 2 or 3

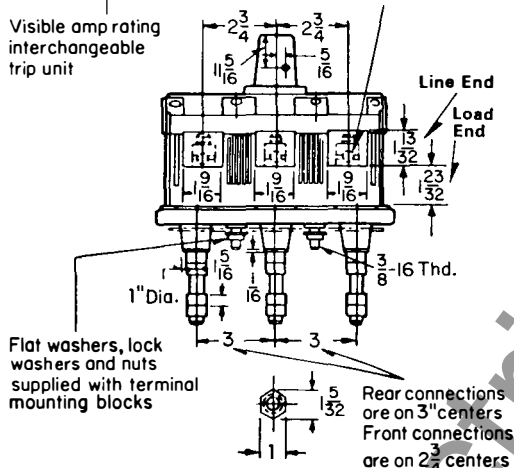
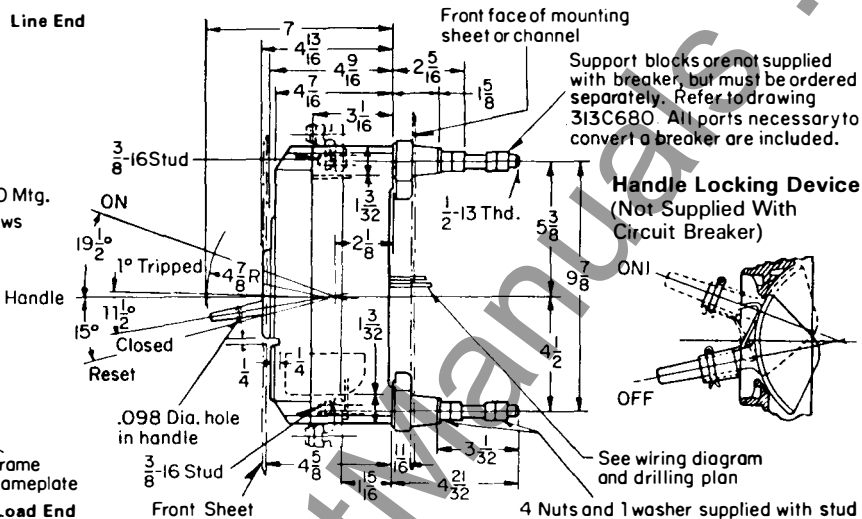
Drawings Available: Master drawing 900-J-376; front and rear connected breaker outline, drilling and wiring diagram 452-D-834.

Ordering Information: Page 4

Net Weight, Lbs.

AQB Complete, 3-Pole A250	20.50
NQB Complete, 3-Pole N250	17.50
3-Pole AQB, NQB Frame	17.00
AQB Trip Unit, 3-Pole	3.50

Technical drawing of a 125-ampere, 2-pole circuit breaker with dimensions in inches. The drawing shows the front view with a central breaker assembly and two terminal blocks on either side. Dimensions include overall width (8 1/4 inches), terminal spacing (4 1/8 inches), and various mounting and terminal dimensions. Labels include "Warning Nameplate", "Visible amp rating interchangeable trip unit", "Front connected solderless terminals", and "C of Breaker".



Top of mtg. block

7/16 Dia. 4 holes

9/16

Top of Breaker

Left hand side of breaker

5 1/4

3/8 Diameter 2 holes for undervoltage release shunt trip or auxiliary switch leads. Hole to be drilled in switchboard breaker support.

1/8

9/16

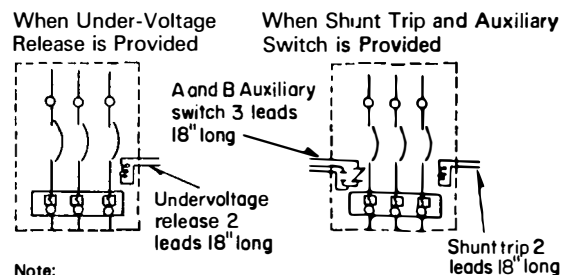
Bottom of mta. block

Diagram showing the layout of a breaker in a switchgear. The breaker is a central rectangle labeled "Bkr" with a radius "R". It is surrounded by busbars and other components. Dimensions are given in inches. Key dimensions include:

- 2 $\frac{3}{4}$ inches from the line end to the top of the breaker.
- 3 inches from the top of the breaker to the top of the breaker stud.
- 2 $\frac{3}{8}$ inches from the left hand side of the breaker to the center of the breaker.
- 7 $\frac{1}{8}$ inches from the center of the breaker to the top of the breaker stud.
- 9 $\frac{1}{16}$ inches from the bottom of the breaker to the top of the breaker stud.
- 3 inches from the center of the breaker to the center of the busbar.
- 6 inches from the center of the breaker to the center of the busbar.
- 5 $\frac{1}{16}$ inches diameter for 3 holes for megger test.

The diagram also shows the "Top of breaker", "Line End", "Left hand side of breaker", "Bottom of breaker", and "Load End".

Style Number	Cable Range MCM		A	B	C
	Max	Min			
20B3055H14	75	50	12 ¹ / ₁₆	6 ³ / ₃₂	5 ²⁹ / ₃₂
20B3055H15	125	100	13	6 ¹ / ₁₆	6 ¹ / ₈
20B3055H16	200	150	13 ¹ / ₁₆	7 ¹ / ₃₂	6 ¹ / ₃₂



Note: The auxiliary switch must be used with each shunt trip. Connect one side of shunt trip in series with "A" contact (Closed when breaker is closed) of auxiliary switch when connecting to power supply.



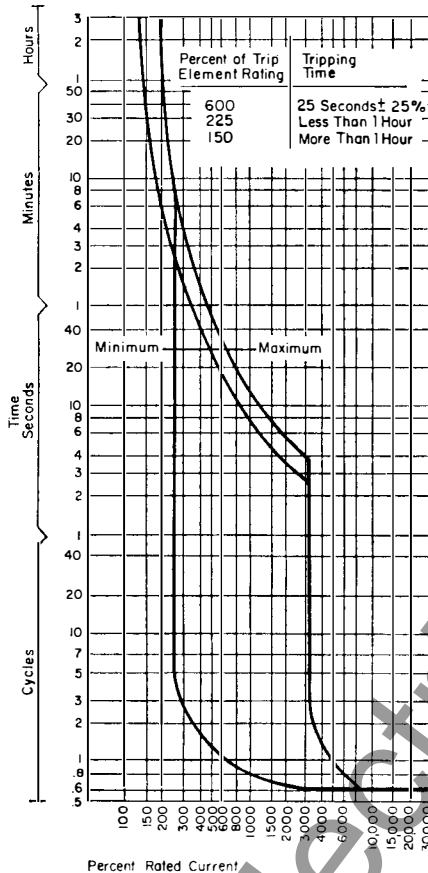
October, 1978
Supersedes Price List 29-220, pages 27-28,
dated February 17, 1969.

Mailed to: E, C/1905/PL

Types AQB-A250, NQB-A250
250 Volts Dc, 500 Volts Ac
250 Amperes Maximum, 20,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

Characteristic Curves AQB-A250



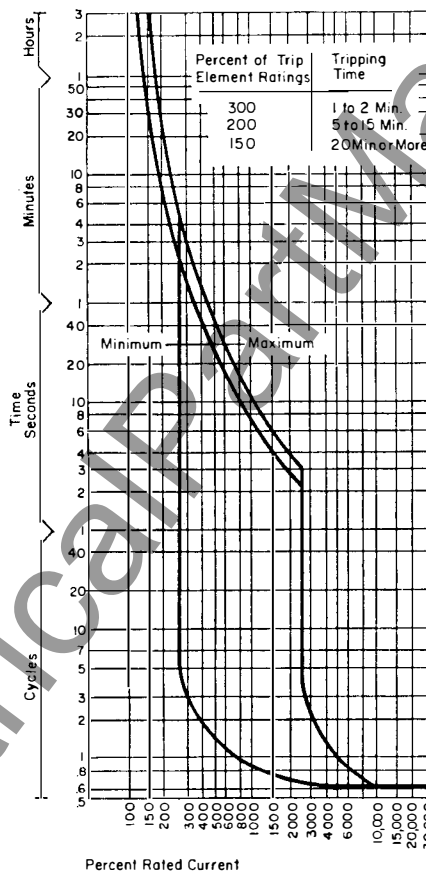
Operating Characteristics

Trip Unit Rating 125-250 Amperes
50°C Ambient – Cold Start, 60 Cycle,
Ac or Dc

Specification MIL-C-17361

This specification covers all thermal-magnetic AQB breakers. It requires that they carry 150% of current ratings for at least one hour and that thermal elements initiate tripping at 225% rated current within one hour and at 600% in 25 seconds plus or minus 25%. The instantaneous magnetic settings for each continuous ratings are based on intended applications. (Thermal tripping tests are conducted with all poles in series in 50°C ambient; each pole is tested individually to check magnetic settings.)

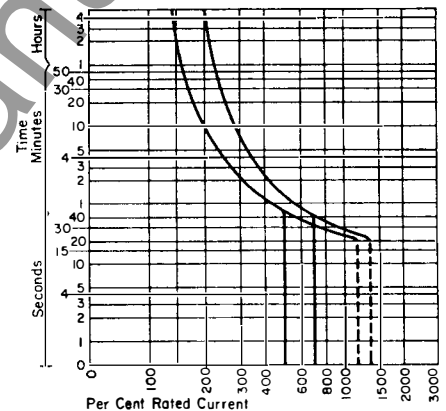
AQB-A250 Generator Breaker



Operating Characteristics

Trip Units, Types 100NGH, 160NGH, 250NGH, 100NG, 160NG and 250NG for use with generator circuit breakers 50°C ambient – Cold Start Ac or Dc

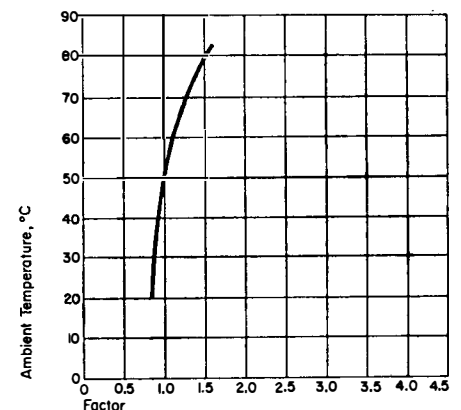
400 Cycle Breakers



Operating Characteristics

Trip Unit Rating 125-250 Amperes
50°C Ambient – Cold Start
400 Cycle Ac

Trip Unit Rating



To determine the trip unit rating to be used, when the load current and ambient are known, multiply the load current by the factor obtained from this curve for the known ambient. The result will be the ideal trip unit rating. However, since trip units are furnished only with standard ratings as per Navy spec., select the standard trip unit whose rating is equal to or one rating higher than the ideal rating.





July 1991

Supersedes Technical Data 29-220,
pages 29-30, dated April 1991

Mailed to: E, D, C/29-200A

Types AQB-A250, NQB-A250
250 Volts Dc, 500 Volts Ac
250 Amperes Maximum, 20,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-A250 and NQB-A250 Breakers

Specification: MIL-C-17361

125-250 Amperes

500 Volts Ac and 250 Volts Dc

Two and Three-Pole

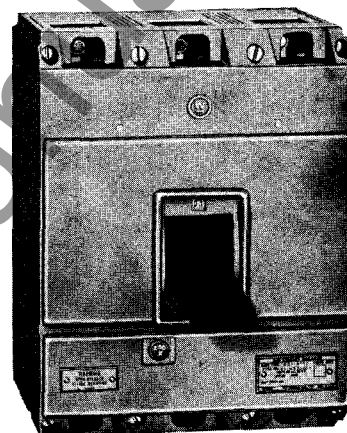
Interrupting Ratings

20,000 Amps Ac and 15,000 Amps Dc

AQB-A250 circuit breakers are used primarily to protect feeder circuits, however, those followed by "NM" in the price table have higher magnetic settings to allow for motor starting. Breakers with settings specifically for use with generators are designated "NG" in the price table.

These breakers are available with interchangeable trip units in ratings of 125, 150, 175, 225 and 250 amperes. The non-automatic NQB-A250 carries a 250 ampere rating and has copper conductors replacing the trip unit. Special generator breakers have trip units rated at 100, 160, and 250 amperes.

AQB-A250 breakers can be ordered with undervoltage release devices, auxiliary switches and shunt trip attachments complete with auxiliary switch. These attachments are also easily installed in the field.



List Prices See Price List 29-020

Cont. Ampere Rating	Inst. Trip Setting – Amps				Complete Breaker ^①		Breaker Frame Only ^①		Trip Unit Only		
	Ac		Dc		Style Number	National Stock No.	Style Number	National Stock No.	Style Number	National Stock No.	
	Low	High	Low	High							
Two-Pole 500 Volts Ac, 250 Volts Dc											
125-N	650	1300	650	1300	313C682G03	5925-01-233-6525	452D370G01	5925-00-796-4371	452D371G03	.....	
125-NM	1950	3900	2250	4100	313C682G04	.....	452D370G01	5925-00-796-4371	452D371G04	.....	
150-N	650	1300	650	1300	313C682G05	.....	452D370G01	5925-00-796-4371	452D371G05	5925-00-793-6865	
150-NM	1950	3900	2250	4100	313C682G06	.....	452D370G01	5925-00-796-4371	452D371G06	.....	
175-N	650	1300	650	1300	313C682G07	.....	452D370G01	5925-00-796-4371	452D371G07	5925-00-175-5058	
175-NM	1950	3900	2250	4100	313C682G08	.....	452D370G01	5925-00-796-4371	452D371G08	.....	
225-N	650	1300	650	1300	313C682G09	.....	452D370G01	5925-00-796-4371	452D371G09	5925-00-064-7834	
225-NM	1500	3000	1770	3550	313C682G10	.....	452D370G01	5925-00-796-4371	452D371G10	.....	
250-N	650	1300	650	1300	313C682G11	.....	452D370G01	5925-00-796-4371	452D371G11	.....	
250-NM	1700	3400	1850	3800	313C682G12	.....	452D370G01	5925-00-796-4371	452D371G12	.....	
250②	Non-Auto	Non-Auto	Non-Auto	Non-Auto	313C682G31	.....	452D370G03	.....	29B2710G05	.....	
Two Pole 500 Volts Ac, 250 Volts Dc Generator Circuit Breaker Applications											
100-NG	1175	2350	.....	.....	313C682G13	.....	452D370G01	5925-00-796-4371	452D371G13	.....	
160-NG	1950	3900	.....	.....	313C682G14	.....	452D370G01	5925-00-796-4371	452D371G14	.....	
250-NG	.....	.....	650	1300	313C682G15	.....	452D370G01	5925-00-796-4371	452D371G15	.....	
Three-Pole 500 Volts Ac, 250 Volts Dc											
125-N	650	1300	650	1300	313C682G18	5925-00-248-1425	452D370G02	5925-00-789-3718	452D371G18	5925-00-795-4958	
125-NM	1950	3900	2250	4100	313C682G19	5925-01-031-9909	452D370G02	5925-00-789-3718	452D371G19	5925-00-839-0289	
150-N	650	1300	650	1300	313C682G20	5925-01-229-4448	452D370G02	5925-00-789-3718	452D371G20	5925-00-795-4957	
150-NM	1950	3900	2250	4100	313C682G21	.....	452D370G02	5925-00-789-3718	452D371G21	5925-00-839-0290	
175-N	650	1300	650	1300	313C682G22	5925-01-235-0710	452D370G02	5925-00-789-3718	452D371G22	5925-00-796-4439	
175-NM	1950	3900	2250	4100	313C682G23	5925-01-192-3985	452D370G02	5925-00-789-3718	452D371G23	.....	
225-N	650	1300	650	1300	313C682G24	5925-01-173-2587	452D370G02	5925-00-789-3718	452D371G24	5925-00-839-0291	
225-NM	1500	3000	1770	3550	313C682G25	5925-01-210-5267	452D370G02	5925-00-789-3718	452D371G25	5925-00-839-0292	
250-N	650	1300	650	1300	313C682G26	.....	452D370G02	5925-00-789-3718	452D371G26	5925-00-839-0293	
250-NM	1700	3400	1850	3800	313C682G27	5925-01-272-3805	452D370G02	5925-00-789-3718	452D371G27	5925-00-690-7568	
250②	Non-Auto	Non-Auto	Non-Auto	Non-Auto	313C682G36	.....	452D370G04	5925-00-831-8801	29B2710G06	5925-00-831-8800	
Three-Pole 500 Volts Ac, 250 Volts Dc Generator Circuit Breaker Applications											
100-NG	1175	2350	.....	.....	313C682G28	5925-01-080-2226	452D370G02	5925-00-789-3718	452D371G28	5925-00-852-7809	
160-NG	1950	3900	.....	.....	313C682G29	5925-01-104-4625	452D370G02	5925-00-789-3718	452D371G29	5925-00-795-4956	
250-NG	.....	.....	650	1300	313C682G30	.....	452D370G02	5925-00-789-3718	452D371G30	.....	

Note: Breakers with ratings other than those given on this page are considered as special and full description data must be provided.

^① Styles listed include slip-type connectors for rear connections. Order front terminal connectors separately if required; see page 30. No additional charges for front connectors ordered with breakers or frames.

^② Type NQB-A250 non-automatic.



AQB-A250 and NQB-A250 Breakers, Continued
List Prices See Price List 29-020

Cont. Ampere Rating	Instantaneous Trip Setting in Amperes ^①		Complete Breaker ^②		Breaker Frame Only ^②		Trip Unit Only	
	Low	High	Style Number	National Stock No.	Style Number	National Stock No.	Style Number	National Stock No.
400 Cycle, Two-Pole, 500 Volts Ac								
125-NH	910	1560	315C574G03	.....	452D370G01	5925-00-796-4371	457D446G03	.....
150-NH	910	1560	315C574G05	.....	452D370G01	5925-00-796-4371	457D446G05	.....
175-NH	910	1560	315C574G07	.....	452D370G01	5925-00-796-4371	457D446G07	.....
225-NH	910	1560	315C574G09	.....	452D370G01	5925-00-796-4371	457D446G09	.....
250-NH	910	1560	315C574G11	.....	452D370G01	5925-00-796-4371	457D446G11	.....
400 Cycle, Two-Pole, 500 Volts Ac Generator Circuit Breaker Applications								
100-NGH	2020	3420	315C574G13	.....	452D370G01	5925-00-796-4371	457D446G13	.....
160-NGH	2020	3420	315C574G14	.....	452D370G01	5925-00-796-4371	457D446G14	5925-00-758-6227
250-NGH	2520	4200	315C574G15	.....	452D370G01	5925-00-796-4371	457D446G15	.....
400 Cycle, Three-Pole, 500 Volts Ac								
125-NH	910	1560	315C574G18	.....	452D370G02	5925-00-789-3718	457D446G18	5925-00-803-5491
150-NH	910	1560	315C574G20	5925-01-075-8931	452D370G02	5925-00-789-3718	457D446G20	5925-00-803-5488
175-NH	910	1560	315C574G22	5925-01-100-4027	452D370G02	5925-00-789-3718	457D446G22	5925-00-899-9904
225-NH	910	1560	315C574G24	5925-01-193-6055	452D370G02	5925-00-789-3718	457D446G24	5925-01-193-6056
250-NH	910	1560	315C574G26	.....	452D370G02	5925-00-789-3718	457D446G26	5925-01-149-4269
400 Cycle, Three-Pole, 500 Volts Ac Generator Circuit Breaker Applications								
100-NGH	2020	3420	315C574G28	.....	452D370G02	5925-00-789-3718	457D446G28	5925-00-238-5198
160-NGH	2020	3420	315C574G29	.....	452D370G02	5925-00-789-3718	457D446G29	5925-00-803-5489
250-NGH	2520	4200	315C574G30	.....	452D370G02	5925-00-789-3718	457D446G30	.....

Switchboard Mounting

Complete breakers and frames include mounting hardware. Female slip connectors are mounted in breaker base to plug onto stud projections of terminal mounting block assemblies. Order one mounting block assembly for each end of breaker.

Description	Style Number	National Stock No.
One Stud Assembly complete with 4 nuts	1631 443	.....
Terminal Mtg. Block (No Studs)	313C681G01	.....
Mounting Block and Stud Set (3 Studs)	313C680G02	.....
	(Net Weight - 2½ Lbs.)	.....

Front Connected Breakers

For connections made at front terminals, pressure-type lugs required. If specified on same order, connectors furnished no charge. One connector per terminal. Select below.

Cable Range	Amps	Description	Style Number	National Stock No.
N40-N75	125	Solderless Connector	20B3055H14	.....
N100-N125	150-175		20B3055H15	.....
N150-N200	250		20B3055H16	.....

**Kit to Convert AQB Frame to NQB
Breaker**

Poles	Style Number	National Stock No.	Net Weight
3	29B2710G06	.....	½ Lb.

① For 400 cycle breakers with higher instantaneous trip ratings, refer to Westinghouse.

② Styles listed include slip-type connectors for rear connections. Order front terminal connectors separately if required. No additional charges for front connectors ordered with breakers or frames.

Westinghouse Electric Corporation
Distribution and Control Business Unit
Electrical Components Division
Pittsburgh, Pennsylvania, U.S.A. 15220



July 1991
Supersedes Technical Data 29-220,
pages 31-32, dated April 1991
Mailed to: E, D, C/29-200A

Types AQB-A250, NQB-A250
250 Volts Dc, 500 Volts Ac
250 Amperes Maximum, 20,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-A250 and NQB-A250 Breakers, Continued

Additions

Handle Lock: If required, order style 1720101. One furnished no charge per 10 breakers ordered, when requested. Net wt., .15 lb.

Mechanical Interlock: If mechanical interlock (switchboard use) is desired for a pair of breakers, order by description. (Not submitted for Navy approval.)

Auxiliary Switch: The most commonly used, when required, is style 452D379G02, national stock number 5930-00-732-8401. Internally mounted switch is used to open or close control circuits as breaker operates and is provided with "A" and "B" contacts. "A" contact is normally closed when breaker is closed and open when breaker is open; "B" is normally open when breaker is closed and closed with breaker open. It has the following rating at given voltages: 15 amp - 125, 250 or 460 volts Ac; ½ amp-125 volts Dc; ¼ amp-250 volts Dc. Net weight, .17 lb.

Contact Westinghouse for other ratings or types of mounting.

Fungus - Moisture - Resistant Treatments: (JAN-T-152; JAN-C-173 or MIL-V-173): If specified, contact Westinghouse. External parts are coated; trip units are not treated.

Technical Manual - NAVSHIPS No. 362-2164: This booklet per MIL-M-15071. When required, order BVR-TM-379A.

Shunt Trip: Shunt trip attachments for tripping the breaker electrically from a remote point are listed in table below. Shunt trips have momentary rating only and for protection must be connected in series with auxiliary switch. An Auxiliary Switch is included in the shunt trip numbers shown below. Do not order separately. Net weight, .70 lb.

Nominal Voltage	Voltage Range	Style Number	National Stock No.
28 V Dc 115 V Ac	24- 32 90-130	452D377G05	5925-00-831-8808
120 V Dc 450 V Ac	90-130 360-500	452D377G07	5925-01-007-5836

Undervoltage Device: Automatically trips breaker when line voltage drops below 40 to 60% of normal. After undervoltage coil has dropped out and tripped breaker on reduced voltage, it automatically resets by breaker action. (If undervoltage coil is energized to 80% of normal). Select device below. Net weight, 1.12 lbs.

Nominal Voltage	Voltage Range	Pickup and Seal Volts (Minimum)	Dropcut Voltage	Style Number	National Stock Number
450 Ac, 60 Cycle	360-500	360	290 Max. 45 Min.	452D837G01	5925-00-920-3099
250 Dc 33 Dc	175-355 30- 36	150 22	25 Min. 5 Min.	452D837G02 452D837G03	 5950-00-790-4869

Individual Reproductions: When required, reproduction of master drawings, outline drawings and certification sheets can be ordered as follows:

Item	Description
1	Full size photolith tracing of master drawing on vellum
2	Outline and drilling plan on vellum
3	Certification data on vellum
4	Reproductions of items 1, 2, or 3

Drawings Available: Master drawing 900-J-376; front and rear connected breaker outline, drilling and wiring diagram 452-D-834.

Ordering Information: Page 4

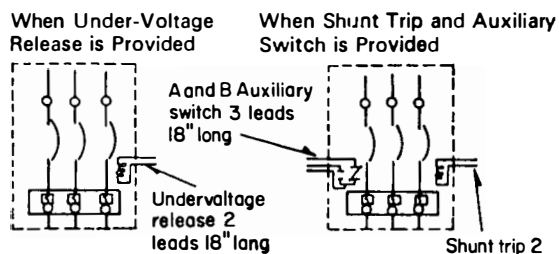
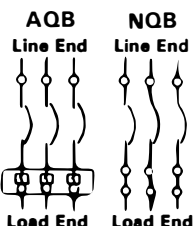
Net Weight, Lbs.

AQB Complete, 3-Pole A250	20.50
NQB Complete, 3-Pole N250	17.50
3-Pole AQB, NQB Frame	17.00
AQB Trip Unit, 3-Pole	3.50

[illegible]

Style Number	Cable Range		A	B	C
	MCM				
	Max	Min			
20B3055H14	75	50	12 $\frac{1}{16}$	6 $\frac{3}{32}$	5 $\frac{9}{32}$
20B3055H15	125	100	13	6 $\frac{1}{16}$	6 $\frac{1}{8}$
20B3055H16	200	150	13 $\frac{1}{16}$	7 $\frac{1}{32}$	6 $\frac{1}{32}$

Wiring Diagrams



Note: The auxiliary switch must be used with each shunt trip. Connect one side of shunt trip in series with "A" contact (Closed when breaker is closed) of auxiliary switch when connecting to power supply.



October, 1978
Supersedes Price List 29-220, pages 33-34,
dated July 1, 1974.

Mailed to: E, C/1905/PL

Type AQB-LF100, 100 Amperes Maximum,
Type AQB-LF250, 250 Amperes Maximum,
500 Volts Ac, 100,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-LF100 and AQB-LF250 Breakers Application

AQB-LF100 and AQB-LF250 circuit breakers are for use in low voltage distribution systems where available fault current exceed the interrupting ratings of standard molded case breakers but does not exceed 100,000 amperes.

Like standard Navy breakers, they are designed for use in switchboards, load centers and panelboards.

AQB-LF circuit breakers are available in three-pole design and for rear connection only.

Note: AQB-LF100 breakers are sold for replacement only. They are no longer on Navy Qualified Product list.

Description

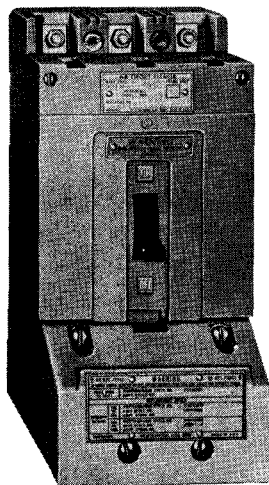
These breakers are essentially standard Navy circuit breakers incorporating current limiting fuses in one compact device. The fuses are mounted in a removable molded housing which plugs into and becomes an integral part of the breaker. Fuses are easily replaced from the front simply by loosening four screws and pulling out the fuse housing.

An interlock prevents the breaker being closed if any of the three fuses are blown and the fuse housing is so designed that all three fuses must be unblown before the housing can be mounted in its correct position on the breaker. Removal of the fuse housing automatically opens breaker and provides visual assurance that the circuit is disconnected.

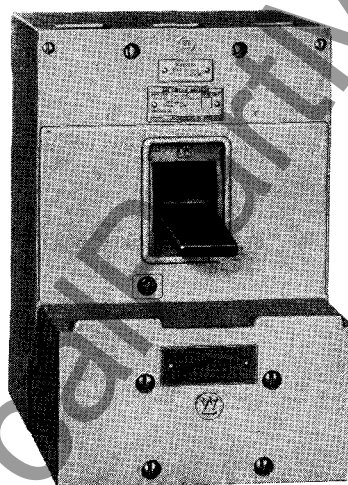
Operation

The thermal magnetic trip unit of the standard breaker provides protection on overloads and short circuits below a predetermined value without affecting the fuses. However, these specially coordinated fuses assume the fault clearing duty on high magnitude short circuits and extend the interrupting capacity to 100,000 amperes.

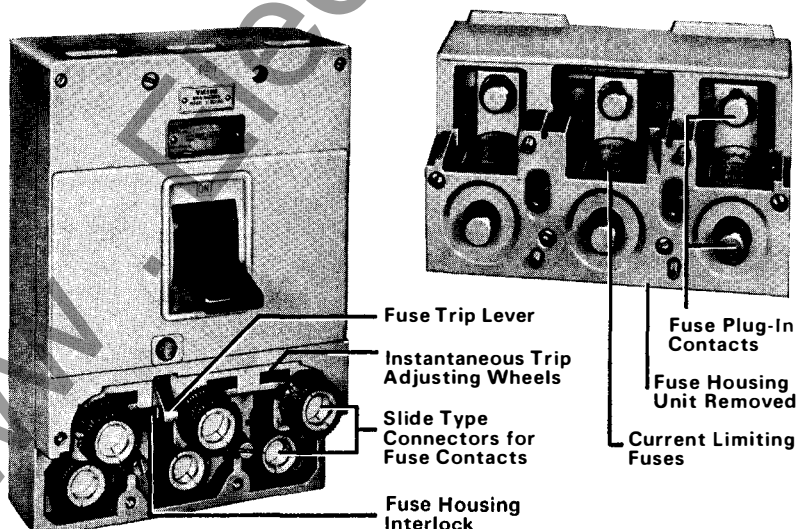
The common trip feature of the circuit breaker is retained so that all poles open when any fuse blows. Fast acting current limiting fuses clear short circuits in less than one-half cycle. Consequently, peak let-through currents are greatly reduced and bus-supporting members or current carrying parts do not have to be designed to meet maximum peak current.



AQB-LF100 fused Navy
circuit breaker



AQB-LF250 fused Navy circuit
breaker





AQB-LF100 Fused Breaker Specification: MIL-C-17361
15-100 Amps, 500 Volts Ac, 60 Cycles, Three-Pole, Interrupting Rating: 100,000 Amperes

Note: AQB-LF100 breakers are sold for replacement only. They are no longer on Navy Qualified Product list.

AQB-LF100 breakers are designed for the same application as the AQB-A100 (non-fused) circuit breaker except that they may be applied on circuits where fault currents up to 100,000 amps are available. Breakers designated by the suffix "DF" in the table have settings designed for the protection of feeder circuits and those followed by "D" have higher magnetic settings to allow for motor starting.

Net Prices See Price List 29-020

Cont. Amp. Rating	Instantaneous Trip Setting in Amps		Breaker Complete	Breaker Frame②		Trip Unit		Fuses	
			Style Number③	Style Number	National Stock No.	Style Number	National Stock No.	Style Number③	Quant. Req.
	Low	High							
Three-Pole 500 Volts Ac									
15-DF	90	105	452D391G16	452D390G02	H5925-00-617-8312	452D385G13	H5925-00-849-8481	313C743H02	3
15-D	180	210	452D391G17	452D390G02	H5925-00-617-8312	452D384G13	H5925-00-655-1156	313C743H02	3
25-DF	180	210	452D391G18	452D390G02	H5925-00-617-8312	452D385G15	H5925-00-655-1157	313C743H02	3
25-D	300	350	452D391G19	452D390G02	H5925-00-617-8312	452D384G15	H5925-00-655-1158	313C743H02	3
50-DF	300	350	452D391G20	452D390G02	H5925-00-617-8312	452D385G17	H5925-00-655-1159	313C743H03	3
50-D	600	700	452D391G21	452D390G02	H5925-00-617-8312	452D384G17	H5925-00-655-1160	313C743H03	3
75-DF	450	525	452D391G22	452D390G02	H5925-00-617-8312	452D385G20	H5925-00-655-1161	313C743H03	3
75-D	900	1050	452D391G23	452D390G02	H5925-00-617-8312	452D384G20	H5925-00-655-1162	313C743H03	3
100-DF	600	700	452D391G24	452D390G02	H5925-00-617-8312	452D385G23	H5925-00-655-1163	313C743H03	3
100-D	1200	1400	452D391G25	452D390G02	H5925-00-617-8312	452D384G23	H5925-00-655-1164	313C743H03	3

^② Breaker frame consists of frame with its fuse housing unit and slip type connectors for back connection, but does not include trip unit, fuses or mounting blocks. Order these separately, trip units and fuses from table above and mounting blocks from listings below.

^③ National stock number not assigned.

Switchboard Mounting

Breaker frame includes mounting hardware. Female slip connectors are mounted on the rear for plugging onto stud projections of terminal mounting block assemblies. Order one for each end of the breaker.

Description	Style Number	National Stock No.
One Stud Assembly Complete with 4 Nuts	1631 442	H5940-00-501-9120
Terminal Mounting Block (No Studs)	1764 240	None Assigned
Mounting Block and Stud Set (3 Studs)	301P272G01	None Assigned

Additions

Individual Reproductions: When required, reproductions of master drawings, outline drawings and certification sheets can be ordered as follows:

Item	Description
1	Full Size Photolith Tracing of Master Drawing on Cronoflex (Mylar)
2	Outline and Drilling Plan on Cronoflex (Mylar)
3	Certification Data on Cronoflex (Mylar)
4	Van Dyke Negatives on Items 1 or 2
5	Reproduction of Items 1, 2 or 3

Drawings Available: Master drawing 900J377; outline drilling plan and wiring diagram: 451D711.

Handle Lock (For Shipboard Maintenance Use Only): Order style number 1614 485.

Fungus-Moisture-Resistant Treatments (JAN-T-152; JAN-C-173 or MIL-V-173): If specified, contact Westinghouse. External parts are coated; trip units are not treated.

Technical Manual: NAVSHIPS number 362-2166. This booklet per MIL-M-15071. When required, order BVR-TM-380.

Repair Parts: Requirements per vessel include (1) one complete trip unit for each 10 breakers or fraction thereof of a specified rating (2) one fuse for each 20 fuses with a minimum quantity of nine fuses of a specified rating (3) one fuse housing unit for each 20 breakers or fraction thereof.

Fuse Housing Unit (No Fuses)

Style Number	National Stock No.
313C742G01	H6605-00-799-3521

Spare Parts Boxes – Per MIL-B-233: After determining box size or number of spare trips to be stored therein, contact Westinghouse.

Net Weight – Lbs.

AQB Breaker Complete 3-Pole	13.62
AQB Breaker Frame Only Complete with Fuse Unit Assembly Without Fuses	9.68
Trip Unit 3-Pole	2.62
Fuse Unit Assembly Without Fuses	1.62
One Mounting Block with 3 Studs	1.62
Current Limiting Fuse	.45
Circuit Breaker Handle Locking Device	.25



October, 1978
Supersedes Price List 29-220, pages 35-36,
dated July 1, 1974.

Type AQB-LF100, 100 Amperes Maximum
Type AQB-LF250, 250 Amperes Maximum
500 Volts Ac, 100,000 Amperes I.C.

Mailed to: E, C/1905/PL

AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB-LF250 Fused Breaker Specification: MIL-C-17361

**125-250 Amps • 500 Volts Ac,
60 Cycles • Three-Pole
Interrupting Rating: 100,000 Amperes**

These fused breakers are designed for applications similar to those for AQB-A250 (non-fused). However, because of their current limiting fuses, they can be applied

on circuits with available fault currents up to 100,000 amps. Only three-pole breakers are available.

Undervoltage release devices, shunt trips and/or auxiliary switches are available for the AQB-LF250 and can be easily installed in the field.

Those breakers identified by the suffix "LM" in the price table have higher magnetic settings for motor starting while those carrying the suffix "L" are set for the protection of feeder circuits. Test report number 5419-27.

Net Prices See Price List 29-020

Cont. Amp. Rating	Instan- taneous Trip Setting in Amps		Breaker Complete	Breaker Frame②		Trip Unit		Fuses		
			Style Number	Style Number	National Stock No.	Style Number	National Stock No.	Style Number③	Quant. Req.	
	Low	High								
Three-Pole 500 Volts Ac (Refer to Westinghouse for Two-Pole Styles and Prices)										
125-L	650	1300	313C748G18	452D820G02	H5925-00-617-8313	452D821G18	H5925-00-655-1165	313C743H01	3	
125-LM	1500	3000	313C748G19	452D820G02	H5925-00-617-8313	452D821G19	H5925-00-655-1166	313C743H01	3	
150-L	650	1300	313C748G20	452D820G02	H5925-00-617-8313	452D821G20	H5925-00-655-1167	313C743H01	3	
150-LM	1500	3000	313C748G21	452D820G02	H5925-00-617-8313	452D821G21	H5925-00-655-1168	313C743H01	3	
175-L	650	1300	313C748G22	452D820G02	H5925-00-617-8313	452D821G22	H5925-00-655-1169	313C743H01	3	
175-LM	1500	3000	313C748G23	452D820G02	H5925-00-617-8313	452D821G23	H5925-00-655-1170	313C743H01	3	
225-L	650	1300	313C748G24	452D820G02	H5925-00-617-8313	452D821G24	H5925-00-655-1171	313C743H01	3	
225-LM	1500	3000	313C748G25	452D820G02	H5925-00-617-8313	452D821G25	H5925-00-655-1172	313C743H01	3	
250-L	650	1300	313C748G26	452D820G02	H5925-00-617-8313	452D821G26	H5925-00-655-1174	313C743H01	3	
250-LM	1500	3000	313C748G27	452D820G02	H5925-00-617-8313	452D821G27	H5925-00-655-1173	313C743H01	3	
			Net Wt. 32.00 Lbs.	Net Wt. 24.50 Lbs.		Net Wt. 3.00 Lbs.		Net Wt. 1.50 Lbs.		

② Breaker frame consists of frame with its fuse housing unit and slip type connector for back connection, but does not include trip unit, fuses or mounting blocks. Order these separately, trip units from table above and mounting blocks from listings below.

③ National stock number H5925-00-624-3049.

Switchboard Mounting

Breaker frame includes mounting hardware. Female slip connectors are mounted on the rear for plugging onto stud projections of terminal mounting block assemblies. Order one for each end of breaker.

Description	Style Number	National Stock No.
One Stud Assembly Complete with 4 Nuts Terminal Mounting Block (No Studs) Mounting Block and Stud Set (3 Studs)④	1631 443 313C681G01 313C680G02	H5940-00-501-9119 None Assigned None Assigned

④ Net Weight 3.00 Lbs.

Additions

Individual Reproductions: When required, reproductions of master drawings, outline drawings, and certification sheets can be ordered at the following prices:

Item	Description
1	Full size photolithographic tracing of master drawing on cronoflex (mylar)
2	Outline and drilling plan on cronoflex (mylar)
3	Certification data on cronoflex (mylar)
4	Van Dyke negatives on items 1 or 2
5	Reproduction of items 1, 2 or 3

Drawings Available: Master drawing 900-J-379; breaker outline, drilling and wiring diagram 451 D250.

Handle Lock (For shipboard maintenance use only): Order style number 1720 101. Net weight .10 lbs.

Auxiliary Switch: For description see AQB-A250 breaker, page 25. Style number 452D379G02 same as for AQB-A250. Net weight .17 lbs.

Shunt Trip Attachment: To order refer to AQB-A250 breaker on page 25. Style numbers and net prices are same as those for AQB-A250. Net weight .70 lbs.

Undervoltage Device: To order, refer to AQB-A250 breaker on page 25. Style numbers and net prices are same as those for AQB-A250. Net weight 1.12 lbs.

Technical Manual: NAVSHIPS number 362-2165. This booklet per MIL-M-15071. When required, order BVR-TM-381.

Repair Parts: Requirements per vessel include: (1) one complete trip unit for each 10 breakers or fraction thereof of a specified rating. (2) one fuse for each 20 fuses ordered with a minimum of nine. (3) one fuse housing unit for each 20 breakers or fraction thereof.

Fuse Housing Unit (No Fuses)

Style Number	National Stock No.	Net Weight
452D832G01	None Assigned	4.50 Lbs.

Spare Parts Boxes: Per MIL-B-233. After determining box size or number of spare trips to be stored therein, contact Westinghouse.

Ordering Information: See page 4.

Net Weights: See listings in tables and additions.



Line End

Support blocks are not supplied with breaker, but must be ordered separately, refer to dwg. 1A4457 all parts necessary to convert a breaker are included

Slip Contact Assembly

Flat washers, lock washers and nuts supplied with terminal mtg. block

4 Nuts and 1 washer supplied with stud

20 Mtg. screws (captive)

Breaker

Visible amp rating interchangeable trip unit

3 Megger holes 5/16 Diameter

For 2-pole breaker current carrying parts are omitted from center pole

Drilling Plan For Mounting Panel (Rear Connected)

Minimum distance between units line end

Top of breaker

Line End

Top of breaker

Top bkr. stud

Line End

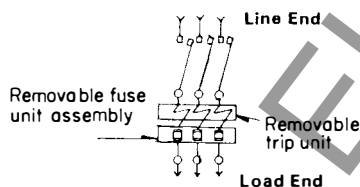
Load End

Load End

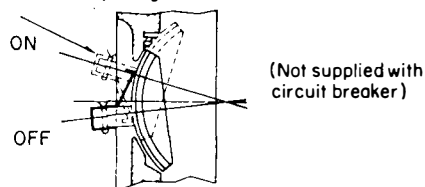
1/8" - Minimum slot

Annotations include: 20 4 Mtg. bolts supplied with breaker, Bolts extend 5/8" below bottom of breaker; 20 Mtg. screws (captive); .098 Dia. hole; ON, OFF, Handle, 7° Tripped; 1/8 Min.; 5/16 - 18 Thd.; 3/8 - 16 Thd.; 4 3/16; 8 3/4; 2 3/16; 3 3/16; 1 3/16; 1 5/16; 1 15/16; 1 3/4; 1 1/2; 1 1/4; 1 3/8; 1 1/8; 1 1/16; 1 1/32; 1 1/64; 1 1/128; 1 1/256; 1 1/512; 1 1/1024; 1 1/2048; 1 1/4096; 1 1/8192; 1 1/16384; 1 1/32768; 1 1/65536; 1 1/131072; 1 1/262144; 1 1/524288; 1 1/1048576; 1 1/2097152; 1 1/4194304; 1 1/8388608; 1 1/16777216; 1 1/33554432; 1 1/67108864; 1 1/134217728; 1 1/268435456; 1 1/536870912; 1 1/1073741824; 1 1/2147483648; 1 1/4294967296; 1 1/8589934592; 1 1/17179869184; 1 1/34359738368; 1 1/68719476736; 1 1/137438953472; 1 1/274877906944; 1 1/549755813888; 1 1/1099511627776; 1 1/2199023255552; 1 1/4398046511104; 1 1/8796093022208; 1 1/17592186044416; 1 1/35184372088832; 1 1/70368744177664; 1 1/140737488355328; 1 1/281474976710656; 1 1/562949953421312; 1 1/1125899906842624; 1 1/2251799813685248; 1 1/4503599627370496; 1 1/9007199254740992; 1 1/18014398509481984; 1 1/36028797018963968; 1 1/72057594037927936; 1 1/144115188075855872; 1 1/288230376151711744; 1 1/576460752303423488; 1 1/1152921504606846976; 1 1/2305843009213693952; 1 1/4611686018427387904; 1 1/9223372036854775808; 1 1/18446744073709551616; 1 1/36893488147419103232; 1 1/73786976294838206464; 1 1/147573952589676412928; 1 1/295147905179352825856; 1 1/590295810358705651712; 1 1/1180591620717411303424; 1 1/2361183241434822606848; 1 1/4722366482869645213696; 1 1/9444732965739290427392; 1 1/18889465931478580854784; 1 1/37778931862957161709568; 1 1/75557863725914323419136; 1 1/151115727451828646838272; 1 1/302231454903657293676544; 1 1/604462909807314587353088; 1 1/1208925819614629174706176; 1 1/2417851639229258349412352; 1 1/4835703278458516698824704; 1 1/9671406556917033397649408; 1 1/19342813113834066795298816; 1 1/38685626227668133590597632; 1 1/77371252455336267181195264; 1 1/154742504910672534362390528; 1 1/309485009821345068724781056; 1 1/618970019642690137449562112; 1 1/1237940039285380274899124224; 1 1/2475880078570760549798248448; 1 1/4951760157141521099596496896; 1 1/9903520314283042199192993792; 1 1/19807040628566084398385987584; 1 1/39614081257132168796771975168; 1 1/79228162514264337593543950336; 1 1/158456325028528675187087900672; 1 1/316912650057057350374175801344; 1 1/633825300114114700748351602688; 1 1/1267650600228229401496703205376; 1 1/2535301200456458802993406410752; 1 1/5070602400912917605986812821504; 1 1/10141204801825835211973625643008; 1 1/20282409603651670423947251286016; 1 1/40564819207303340847894502572032; 1 1/81129638414606681695789005144064; 1 1/162259276829213363391578010288128; 1 1/324518553658426726783156020576256; 1 1/649037107316853453566312041152512; 1 1/1298074214633706907132624082305024; 1 1/2596148429267413814265248164610048; 1 1/5192296858534827628530496329220096; 1 1/10384593717069655257060992658440192; 1 1/20769187434139310514121985316880384; 1 1/41538374868278621028243970633760768; 1 1/83076749736557242056487941267521536; 1 1/166153499473114484112975882535043072; 1 1/332306998946228968225951765070086144; 1 1/664613997892457936451903530140172288; 1 1/1329227995784915872903807060280344576; 1 1/2658455991569831745807614120560689152; 1 1/5316911983139663491615228241121378304; 1 1/10633823966279326983230456482242756608; 1 1/21267647932558653966460912964485513216; 1 1/42535295865117307932921825928971026432; 1 1/85070591730234615865843651857942052864; 1 1/170141183460469231731687303715884105728; 1 1/340282366920938463463374607431768211456; 1 1/680564733841876926926749214863536422912; 1 1/1361129467683753853853498429727072845824; 1 1/2722258935367507707706996859454145691648; 1 1/5444517870735015415413993718908291383296; 1 1/10889035741470030830827987437816582766592; 1 1/21778071482940061661655974875633165533184; 1 1/435561429658801233233119497

Wiring as Shown is for a 3 Pole
Breaker For 2 Pole Breaker Omit
Middle Pole



Reverse position of lock to prevent breaker from opening



AQB Breaker with Over-Current, Short Circuit Trip and Fuses

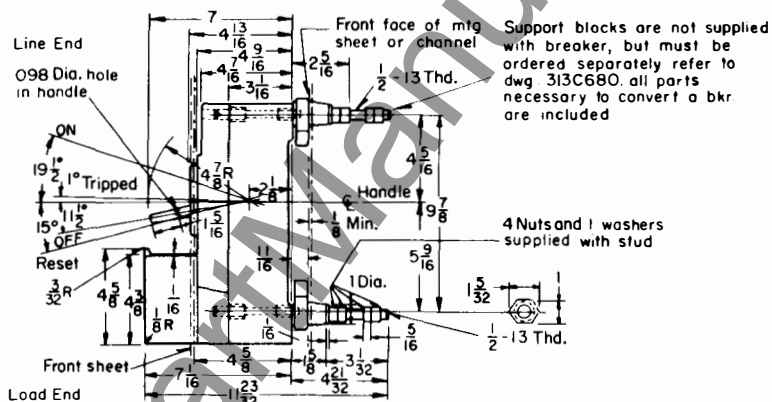
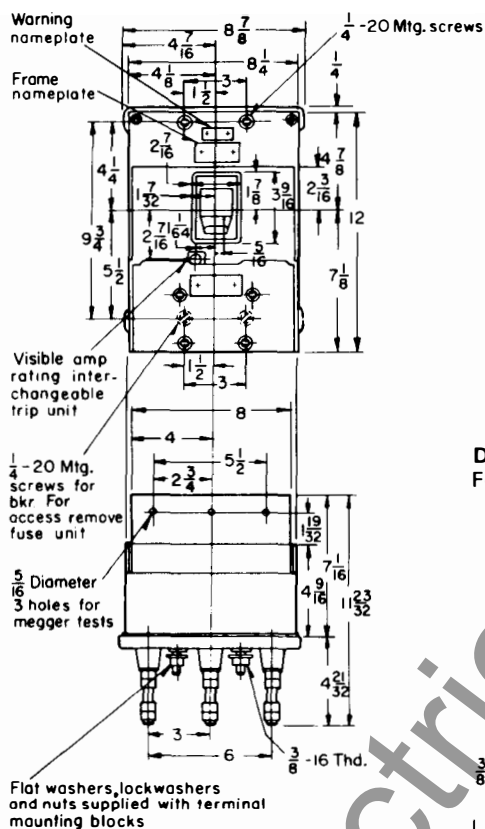
October, 1978
Supersedes Price List 29-220, pages 37-38,
dated February 17, 1969.

Mailed to: E, C/1905/PL

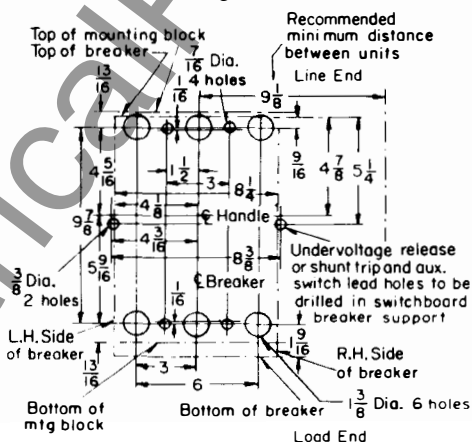
Types AQB-LF100, 100 Amperes Maximum,
Types AQB-LF250, 250 Amperes Maximum
500 Volts Ac, 100,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

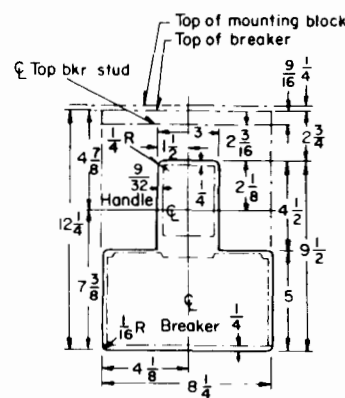
Outline Dimensions AOB-LE250 Breakers



Drilling Plans For Terminal Mounting Blocks

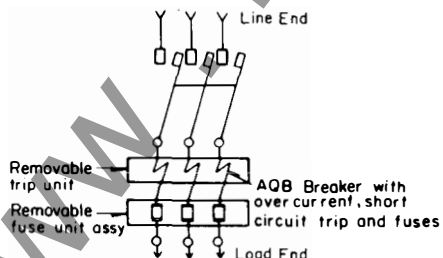


Front Sheet Drilling Template

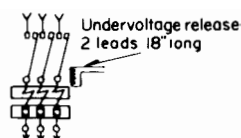


Typical Wiring Diagrams

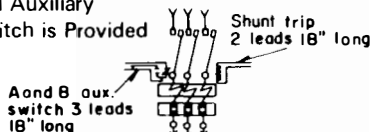
Wiring as Shown for 3 Pole Breaker
For 2 Pole Breaker Omit Middle Pole



When Under-Voltage Release is Provided

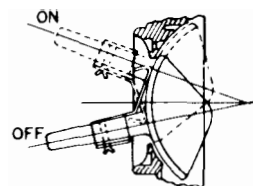


When Shunt Trip and Auxiliary Switch is Provide



Handle Locking Device

Handed Looking Device
(Not Supplied With Circuit Breaker)

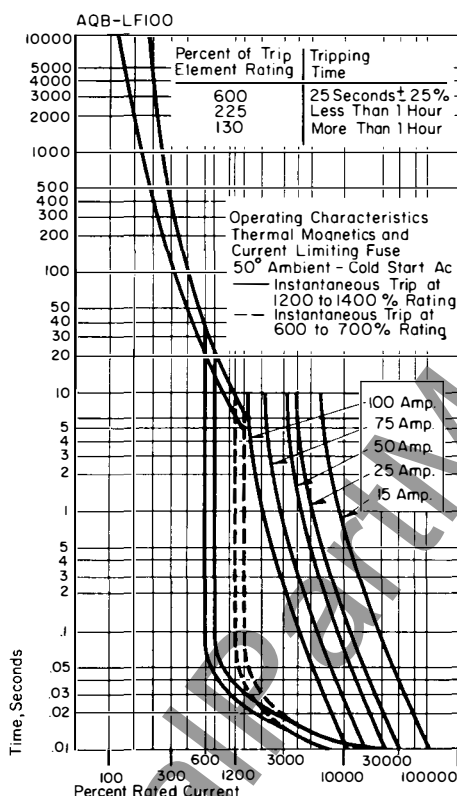
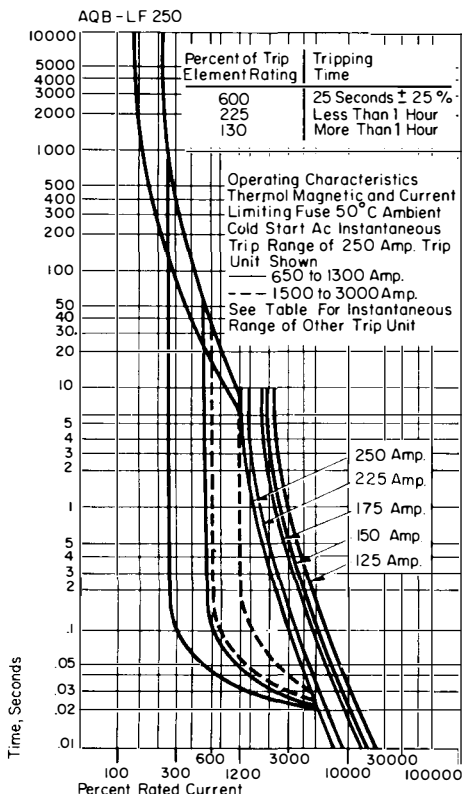


Note:
The aux. switch must be used with each shunt trip, connect one side of shunt trip in series with "A" contact (closed when breaker is closed) of aux. switch when connecting to power supply.

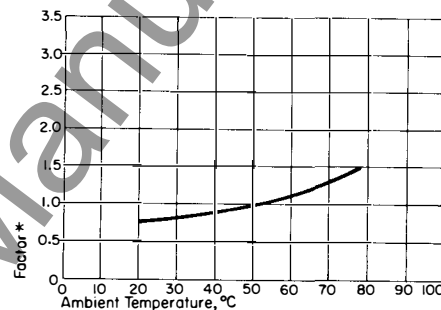


Characteristic Tripping Curves AQB-LF250 Breakers

AQB-LF100 Breakers



To determine the trip unit rating to be used, when the load current and ambient are known, multiply the load current by the factor obtained from the curve below for the known ambient. The result will be the ideal trip unit rating. However, since trip units are furnished only with standard ratings as per Navy spec., select the standard unit trip whose rating is equal to or one rating higher than the ideal rating.





Westinghouse Electric Corporation
Low Voltage Breaker Division
Beaver, Pennsylvania 15009

Technical Data
29-220

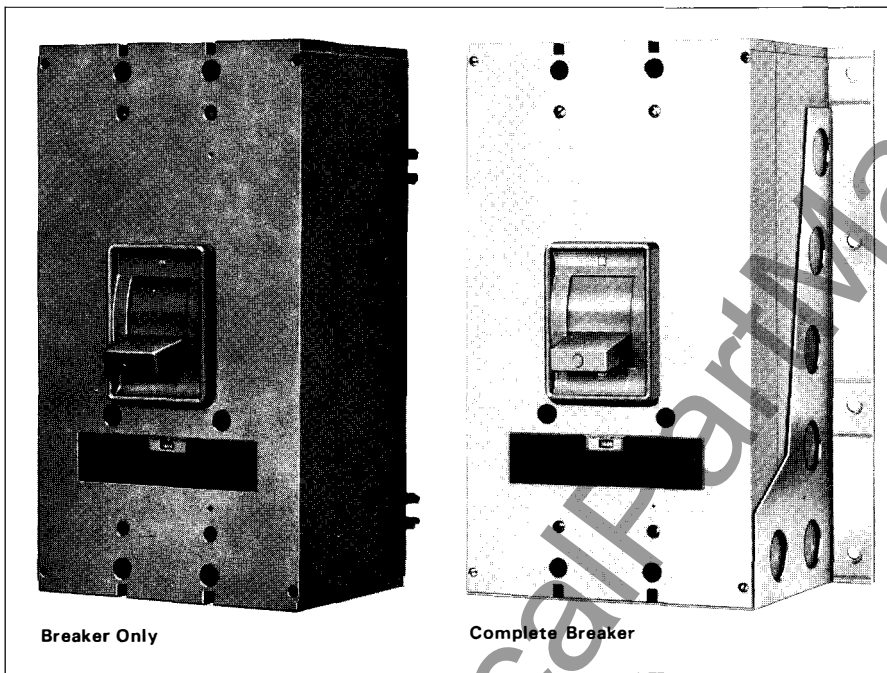
Page 39

August, 1981
Supersedes Technical Data 29-220,
pages 39-40, dated October, 1978

Mailed to: E, C/1905/PL

Types AQB-A1601, NQB-A1601
500-1600 Amperes; 500 Volts, 60 Hz Ac,
75,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use



AQB-A1601 and NQB-A1601 Navy Breakers

500-1600 Amperes, 500 Volts A-c, 60
Cycles Only, 3-Pole, 50°C Ambient
Interrupting Rating: 75,000 Amps. A-c
(Without Delayed Instantaneous)
50,000 Amps. A-c (With Delayed
Instantaneous)
Specification: MIL-C-17361
(Modified)
Class: Hi Shock MIL-S-901
(Modified)
Vibration: MIL-STD-167
Material and Workmanship: MIL-E-917
Test Report Number: 2085

AQB-A1601 circuit breakers are designed
for installation in switchboards for protec-
tion of generators and feeder and branch
circuits.

A complete breaker consists of a breaker plus
mounting base and is available with numer-
ous attachments such as electrical operator,
shunt trip, undervoltage release and auxiliary
switches to perform varied auxiliary func-
tions.

Trip units for these breakers have an adjust-
able instantaneous trip and are listed with
and without delayed instantaneous trip for
system coordination.

NQB-A1601 Breakers have a continuous
rating of 1600 amperes. They are used only
as disconnects since they do not have an
automatic trip device.

Note: Breakers with ratings other than those
listed above are considered as special and
full descriptive data must be provided.

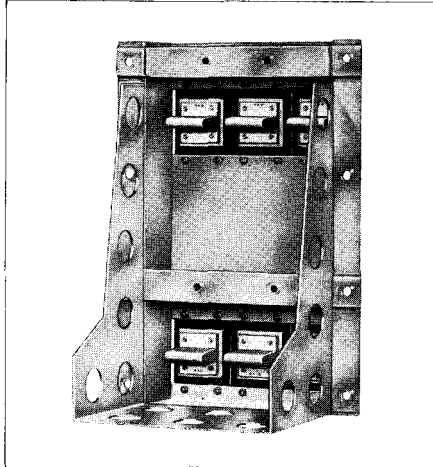
400 cycle breakers are not available.

Net Prices See Price List 29-020 3 Pole, 500 Volts, 60 Cycles A-c

Type	Continuous Ampere Rating	Instantaneous Trip Setting A-c Amperes Low High	Breaker Only, consists of:			Trip Unit Style Number	National Stock Number
			Frame (Includes Stabs)				
			Style Number	National Stock Number			
Without Delayed Instantaneous Trip							
AQB 600X	2000	6000	372D522G02			372D523G01	
AQB 600XM	4000	12000	372D522G02			372D523G03	
AQB 800X	2000	6000	372D522G02			372D523G07	
AQB 1000X	2000	6000	372D522G02	None		372D524G03	None
AQB 1200X	2000	6000	372D522G02	Assigned		372D524G05	Assigned
AQB 1400X	4000	12000	372D522G02			372D524G07	
AQB 1600X	4000	12000	372D522G02			372D524G09	
NQB 1600	.....	.....	372D522G02			372D524G10	
With Delayed Instantaneous Trip (XT1 - Min. Time Delay .0417 - .0458 Sec.)							
AQB 500XT1	2000	6000	372D522G02			374D211G01	
AQB 800XT1	2000	6000	372D522G02			374D211G07	
AQB 1000XT1	2000	6000	372D522G02	None		374D212G03	None
AQB 1200XT1	2000	6000	372D522G02	Assigned		374D212G05	Assigned
AQB 1600XT1	4000	12000	372D522G02			374D212G09	
With Delayed Instantaneous Trip (XT2 - Max. Time Delay .0708 - .0750 Sec.)							
AQB 500XT2	2000	6000	372D522G02			374D221G01	
AQB 800XT2	2000	6000	372D522G02			374D221G07	
AQB 1200XT2	2000	6000	372D522G02	None		374D222G05	None
AQB 1600XT2	4000	12000	372D522G02	Assigned		374D222G09	Assigned



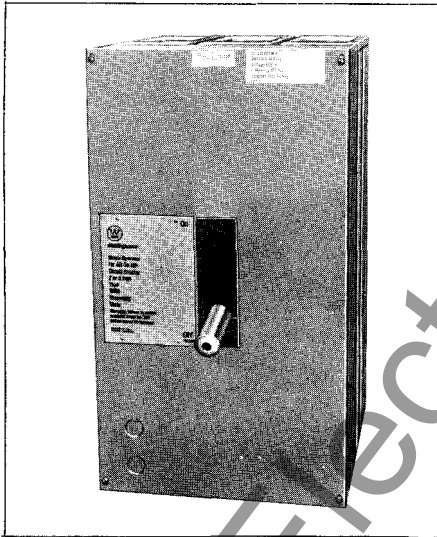
Mounting Base^②



For switchboard mounting. Includes back connectors for switchboard bus and male stabs to engage breaker. Matching stabs are supplied with breaker frame.

Style Number: 373D307G02

Electrical Operator^② ③



Mounts to front of breaker for remote operation. 450 volt Ac rating utilizes a transformer in conjunction with a 120 volt motor. If automatic reset is desired, order the circuit breaker with optional Automatic Reset Switch (See Optional Additions)

Rating	Style Number ^③	National Stock Number
120 V A-c	1371D38G01	None
450 V A-c	1371D38G03	Assigned

Optional Additions^②

Shunt Trip^①: Mounts in right pole only. Has momentary rating only; coil leads must be wired in series with 1A contact of auxiliary switch.

Undervoltage Release^①: Mounts in right pole only.

Auxiliary Switch: Mounts in left pole only. 4 contacts, any combination of A's and B's, (supplied as 2A and 2B unless specified) 8 contacts, any combination of A's and B's, (supplied as 4A and 4B unless specified)

Automatic Reset Switch^③

For use with motor operator when an automatic reset function is required. Factory installed only.

Cable Connector: Mounts to bus connector for cable connection. Each lug accepts four cables, 600 MCM max. 1 lug required per bus connector.

Style Number: 505C706G03

Fungus, Moisture Resistant Treatment:

(JAN-C-173 or MIL-V-173). If specified, contact Westinghouse. External parts are coated; trip units are not treated.

Drawings

Master plan: 900J442

Sheet 1 of 4: Breaker Only and Wiring diagrams

Sheet 2 of 4: Trip Unit, Curves and Attachments

Sheet 3 of 4: Mounting Base and Cable Connectors

Sheet 4 of 4: Motor Operator

Individual Reproductions: When required, reproductions of sheets 1 thru 4 of master plan 900J442 can be ordered as follows:

Type Reproduction

Cronoflex (Mylar Reproducible)
Sepia (Brown Paper Reproducible)
Prints (Paper)

Technical Manual: NAVSHIPS No. 0962-014-5000. This booklet per MIL-M-15071. When required, order BVR-TM-576.

Dimensions: Pages 41, 42, 43.

Characteristic Curves: Pages 44, 45.

① Breaker can be supplied with either shunt trip or undervoltage release, but not both.

② Can be field mounted.

③ Changed since previous issue.

Net Weights

Description	Weight, Lbs.
Breaker Only	
AQB	151
NQB	148
Breaker Frame (AQB and NQB)	128
Trip Unit	
AQB	23
NQB	20
Mounting Base Only	75
Electrical Operator, 115 Volt	27
Electrical Operator, 450 Volt	35
Shunt Trip	$\frac{3}{4}$
Undervoltage Release	$1\frac{1}{4}$
Auxiliary Switch	$1\frac{1}{4}$
Cable Connector	3

Ordering Information

When ordering Westinghouse Navy circuit breakers consult the check list below to make sure you have provided correct information. You should specify:

1. Quantity, Westinghouse style number and National stock number of:

- Breaker frame and trip unit.
- Mounting base.
- Spare breakers or trip units. (Usually one required for each ten units or fraction thereof of each current rating.)
- Instruction books.

2. Shipment

Specify transportation means, method of packaging and preservation and required shipping date.

3. Drawings

Specify quantity of outline or master plan drawings required.

4. Inspection

Indicate whether Navy inspection is required at factory prior to shipment.



October, 1978
Supersedes Price List 29-220, pages 41-42,
dated February 17, 1969

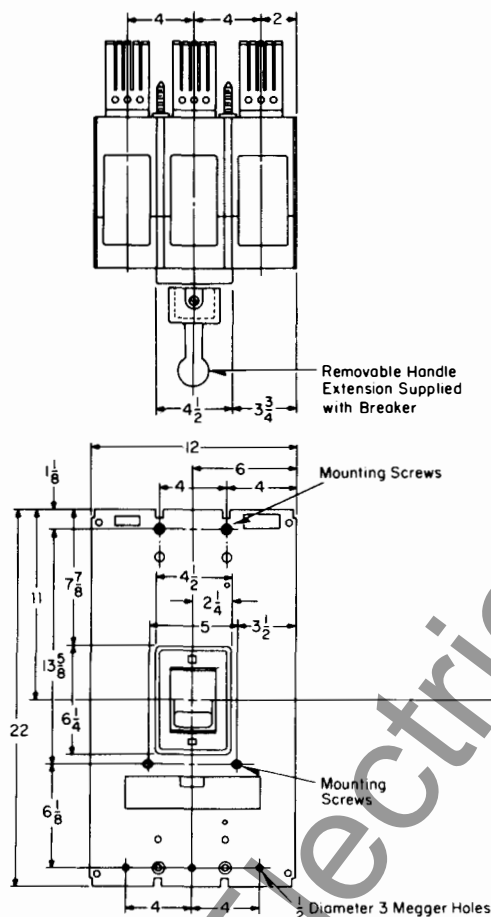
Types AQB-A1601, NQB-A1601
500-1600 Amperes; 500 Volts, 60 Hz. Ac.
75,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use

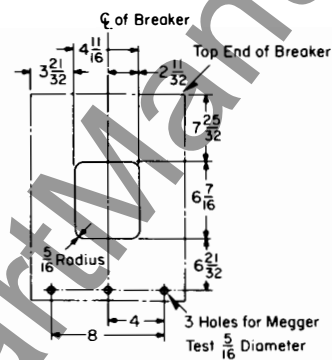
Mailed to: E, C/1905/PL

AQB and NQB Circuit Breaker Frame Outline Dimensions

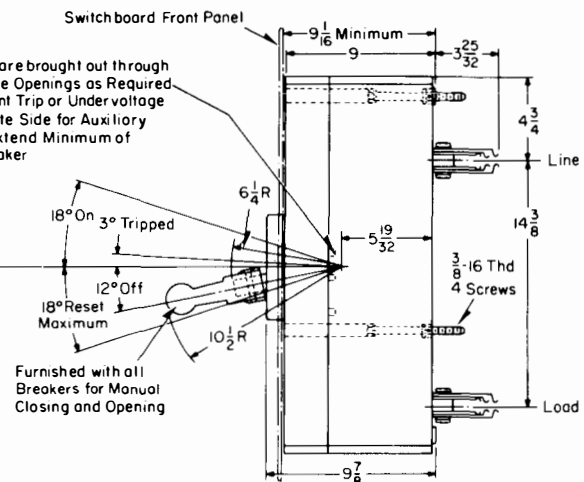
NQB—Same except for trip unit nameplate.



Front Panel Cutout



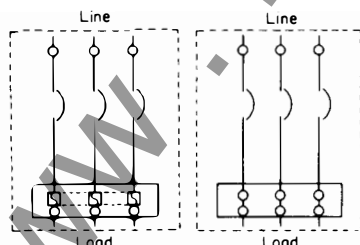
Attachment Leads are brought out through one or more of these openings as required in this side for Shunt Trip or Undervoltage Release and Opposite Side for Auxiliary Switches. Leads Extend Minimum of 18 Inches from Breaker



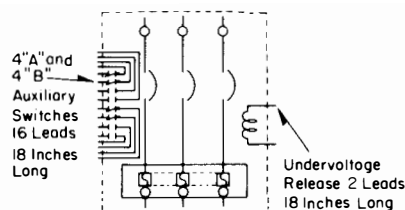
Wiring Diagrams

AQB

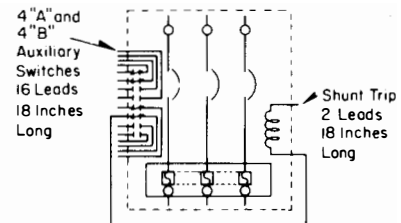
NQB



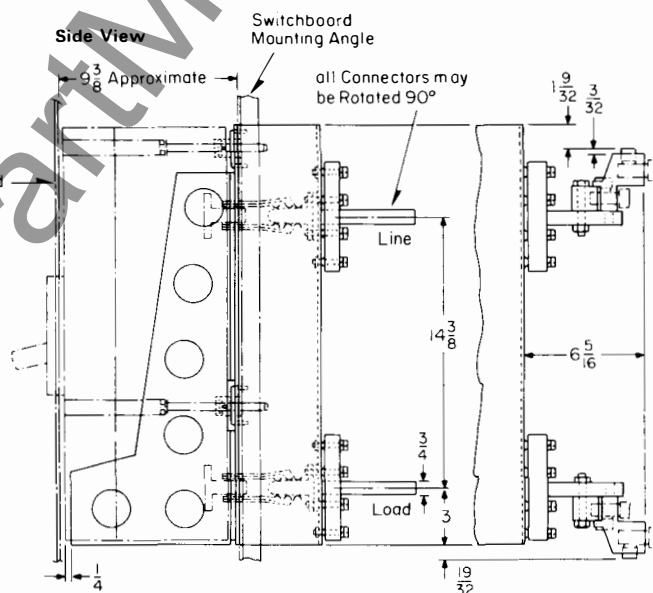
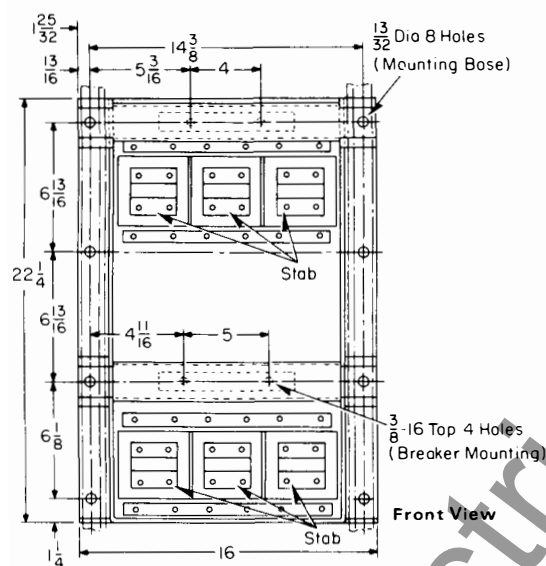
When undervoltage release and auxiliary switches are provided



When shunt trip and auxiliary switch are provided



Note: The auxiliary switch must be used with each shunt trip. Connect one side of shunt trip in series with "A" contact (closed when breaker is closed) of auxiliary switch when connecting to power supply.

[illegible]

Technical drawing of the front view of a rectangular base. The drawing shows a rectangular plate with a central rectangular hole. The outer dimensions are 22 1/2 inches in height and 14 3/8 inches in width. The inner dimensions of the hole are 12 7/8 inches in width and 13 1/8 inches in height. The thickness of the plate is 1/8 inch. There are four mounting holes, each with a diameter of 13/32 inch. The distance from the center of each mounting hole to the nearest edge is 6 1/16 inches. The distance from the center of the hole to the nearest edge is 7 3/16 inches. The distance from the center of the hole to the nearest edge is 6 1/16 inches. The distance from the center of the hole to the nearest edge is 6 1/8 inches. The outline of the mounting base is indicated by a dashed line.

Technical drawing of a breaker plate with the following dimensions and labels:

- Top End of Breaker
- C of Breaker
- 32 ¹¹/₃₂
- 4 ¹¹/₁₆
- 2 ¹¹/₃₂
- 25 ⁷/₃₂
- 6 ⁷/₁₆
- 6 ²¹/₃₂
- 5 ¹⁶/₁₆ Radius
- 8
- 4
- 3 Holes for Megger Test - ⁵/₁₆ Diameter

With cable connectors style 505C706G03
lug capacity—four 600 MCM cables per lug



July 1991
Supersedes Technical Data 29-220,
pages 43-44, dated April 1991
Mailed to: E, D, C/29-200A

Types AQB-L400QF, AQB-L400QM;
150,000 Amperes I.C. and
AQB-LL400QS; 100,000 Amperes I.C.
250-400 Amperes; 500 Volts 60 Hz Ac

AB DE-ION® Circuit Breakers for Naval Shipboard Use

Mounting Block

Type

Plug-in Mounting Block, Rear
Connected, Complete
(Required one per load or line
end)

Westinghouse
Style Number

1230C81G01

Mounting Block, Molded Base
Only
(For mounting a front con-
nected circuit breaker, or as a
replacement part)

1230C81G05

Male Slip Connectors
(Replacement part, three per
kit)

1230C81G04

Front Connected Terminal
(Required three per line or
load end)

504C497G01

Auxiliary Switches

Type

Auxiliary Switch
1a/1b 115-450 V Ac
2a/2b 115-450 V Ac
1a/1b 120 V Dc
2a/2b 120 V Dc
1a/1b 115-450 V Ac and 1a/1b
120 V Dc Combination

Westinghouse
Style Number

1220C86G01

1220C86G02

1220C86G05

1220C86G06

1220C86G07

Shunt Trip

Type

Shunt Trip (Left-Pole only)
(Includes built-in cutoff switch)
115 V Ac/28 to 120 V Dc
450 V Ac Only

Westinghouse
Style Number

1220C86G03

1220C86G04

Combination Shunt Trip and
1a/1b Auxiliary Switch (Left-
Pole Only)

1220C86G08

115 V Ac/28-120 V Dc Shunt
Trip and 115-450 V Ac Auxil-
iary Switch

1220C86G09

115 V Ac/28-120 V Dc Shunt
Trip and 120 V Dc Auxiliary
Switch

1220C86G10

450 V Ac Shunt Trip and
115-450 V Ac Auxiliary Switch
450 V Ac Shunt Trip and 120 V
Dc Auxiliary Switch

1220C86G11

Undervoltage Release (Left-Pole Only)

UVR and Circuit Breaker must be ordered as
an integral unit

Type

AQB-L400QF with 115 V Ac
Undervoltage Release
Mechanism

Westinghouse
Style Number

1230C83G15

AQB-L400QF with 450 V Ac*
Undervoltage Release
Mechanism

1230C83G16

AQB-L400QF with 120 V Dc
Undervoltage Release
Mechanism

1230C83G17

AQB-L400QF with 250 V Dc
Undervoltage Release
Mechanism

1230C83G18

AQB-L400QM with 115 V Ac
Undervoltage Release
Mechanism

1230C83G19

AQB-L400QM with 450 V Ac*
Undervoltage Release
Mechanism

1230C83G20

AQB-L400QM with 120 V Dc
Undervoltage Release
Mechanism

1230C83G21

AQB-L400QM with 250 V Dc
Undervoltage Release
Mechanism

1230C83G22

AQB-LL400QS with 115 V Ac
Undervoltage Release
Mechanism

1230C83G11

AQB-LL400QS with 450 V Ac*
Undervoltage Release
Mechanism

1230C83G12

AQB-LL400QS with 120 V Dc
Undervoltage Release
Mechanism

1230C83G13

AQB-LL400QS with 250 V Dc
Undervoltage Release
Mechanism

1230C83G14

*Using externally-mounted step-down transformer
supplied

Switchboard Mounting

Breaker frame includes mounting hardware.
Stud projections are mounted on the rear of
the breaker for plugging into female slip
connectors of terminal mounting block
assemblies.

Handle Lock (For shipboard maintenance
use only) order style number 1720101.

**Fungus – Moisture – Resistance Treat-
ments:** (JAN-T-152; JAN-C-173; MIL-V-173)
If specified contact Westinghouse. External
parts are coated.

Technical Manual: When required order
1240C33H01.

Portable Test Kit – Can be used to function-
ally test the breaker for overload and short
circuit, while breaker is mounted. When
required order catalog number STK2.

Individual Reproduction: When required
reproduction of outline drawings and certifi-
cation sheets can be ordered as follows:

Item	Description
1	Outline drawing and drilling plan on vellum
2	Certification data on vellum
3	Reproduction of items 1 and 2

Repair Parts:

Net Weight:

Item	Weight
Circuit Breaker	30 lbs.
Motor Operator	22 lbs.
Mounting Block	10 lbs.
Front Connected Terminals (Set of Three)	1 lb.-10¼ ozs.
Portable Test Kit	12 lb.-14¼ ozs.

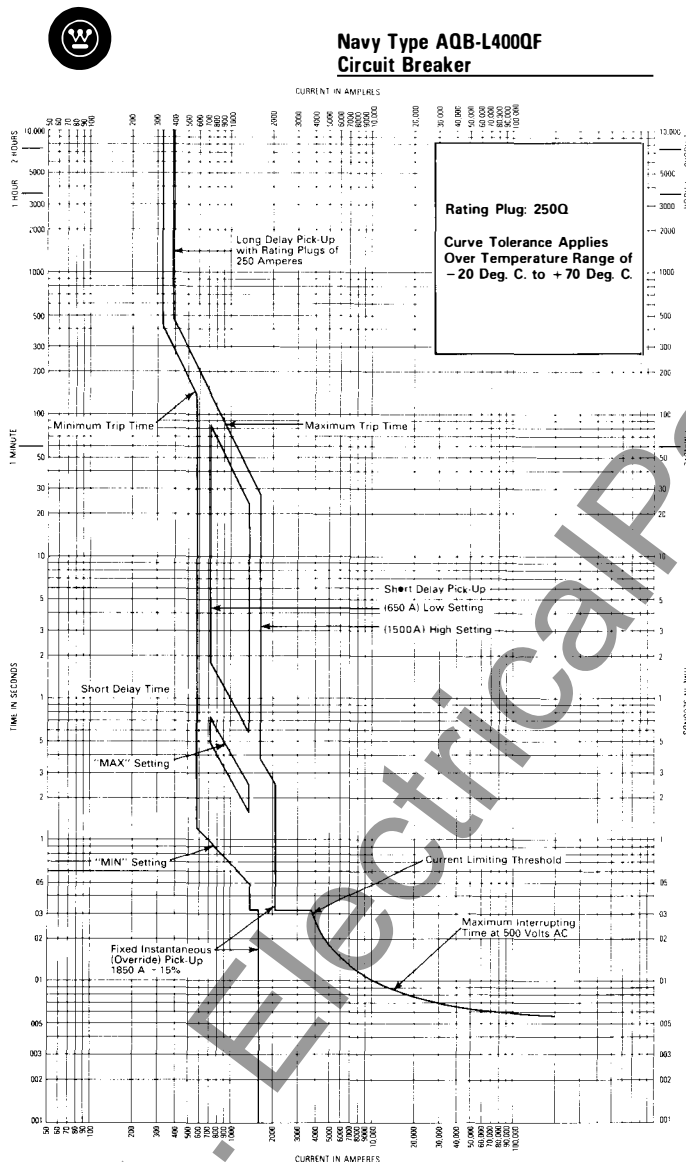




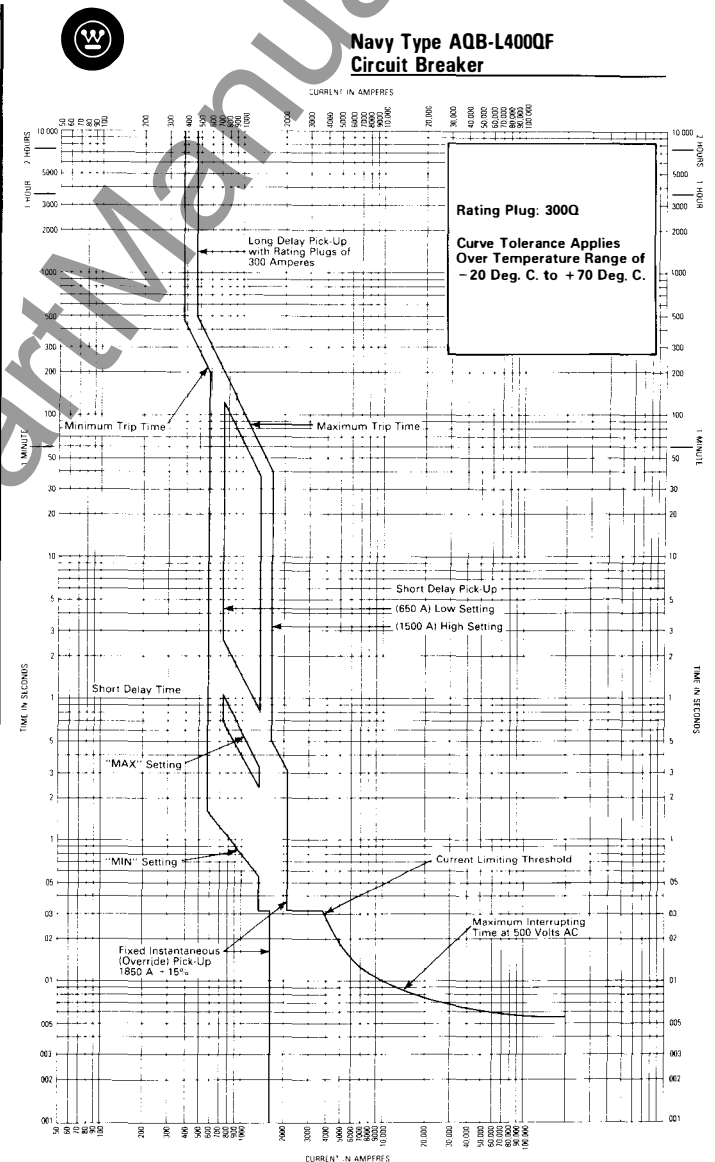
July 1991
Supersedes Technical Data 29-220,
pages 45-46, dated April 1991
Mailed to: E, D, C/29-200A

Types AQB-L400QF, AQB-L400QM;
150,000 Amperes I.C. and
AQB-LL400QS; 100,000 Amperes I.C.
250-400 Amperes; 500 Volts 60 Hz Ac

AB DE-ION® Circuit Breakers for Naval Shipboard Use



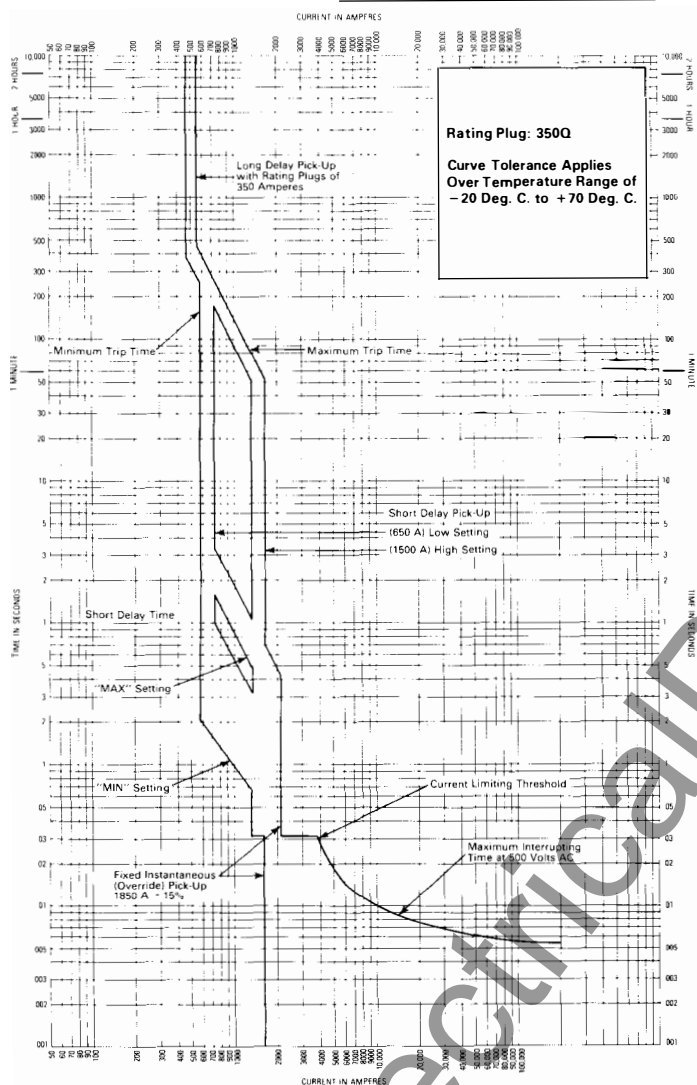
Time-Current Curves for AQB-L400QF Circuit Breaker with 250 Ampere Rating Plug



Time-Current Curves for AQB-L400QF Circuit Breaker with 300 Ampere Rating Plug



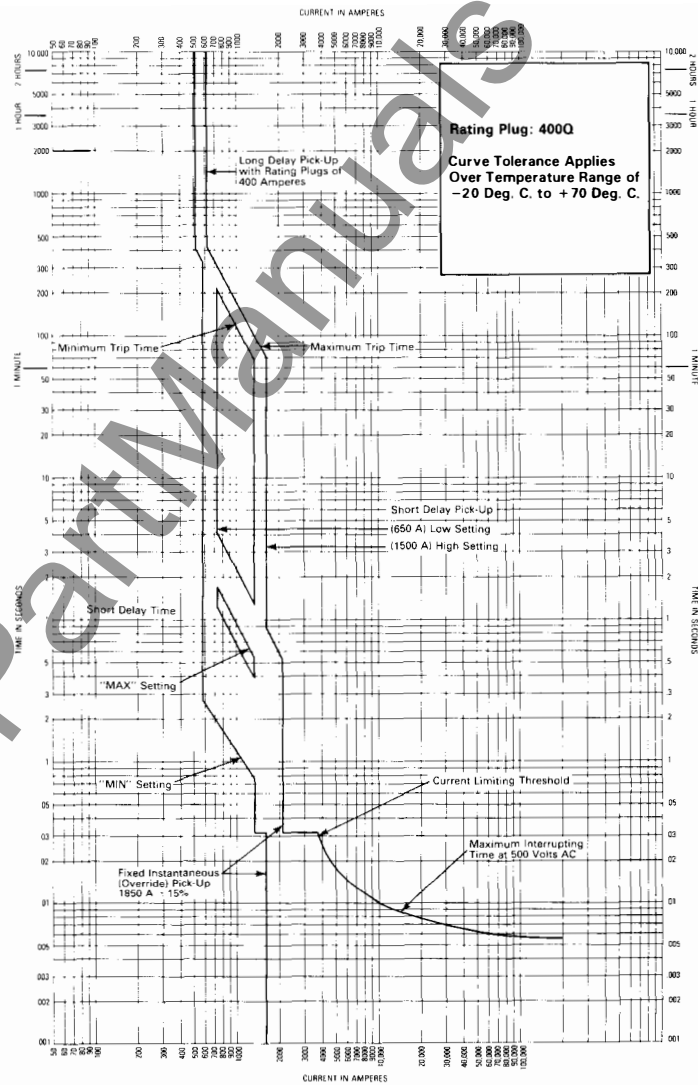
Navy Type AQB-L400QF Circuit Breaker



Time-Current Curves for AQB-L400QF Circuit Breaker with 350 Ampere Rating Plug



Navy Type AQB-L400QF Circuit Breaker



Time-Current Curves for AQB-L400QF Circuit Breaker with 400 Ampere Rating Plug



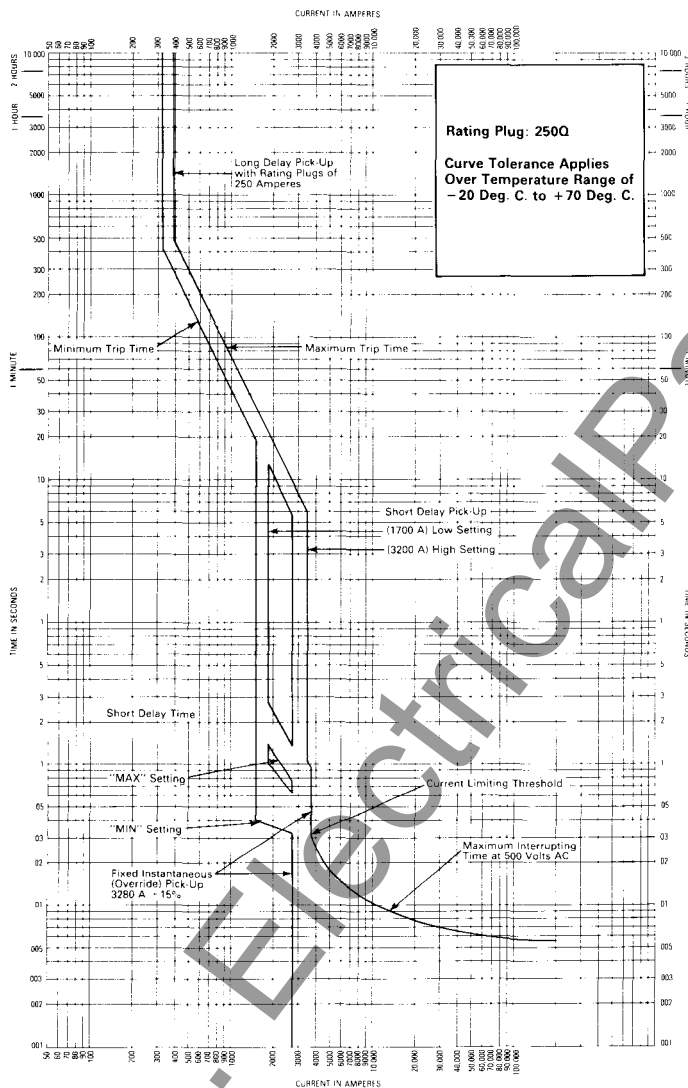
July 1991
Supersedes Technical Data 29-220,
pages 47-48, dated April 1991
Mailed to: E, D, C/29-200A

Types AQB-L400QF, AQB-L400QM;
150,000 Amperes I.C. and
AQB-LL400QS; 100,000 Amperes I.C.
250-400 Amperes; 500 Volts 60 Hz Ac

AB DE-ION® Circuit Breakers for Naval Shipboard Use



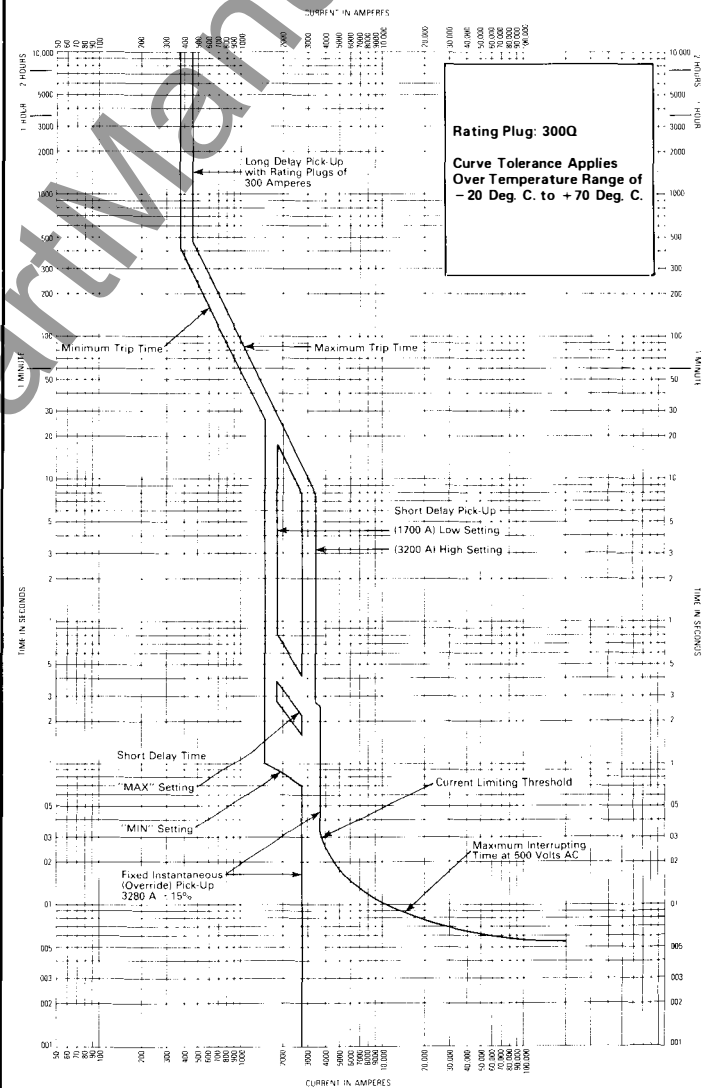
Navy Type AQB-L400QM Circuit Breaker



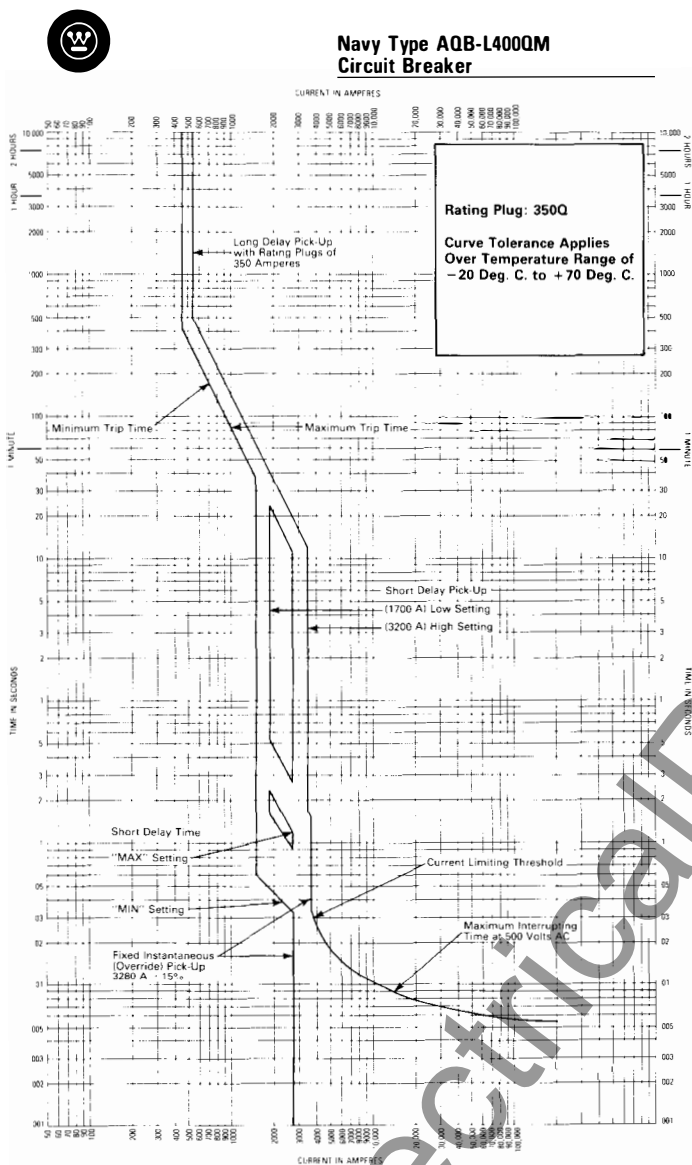
Time-Current Curves for AQB-L400QM Circuit Breaker with 250 Ampere Rating Plug



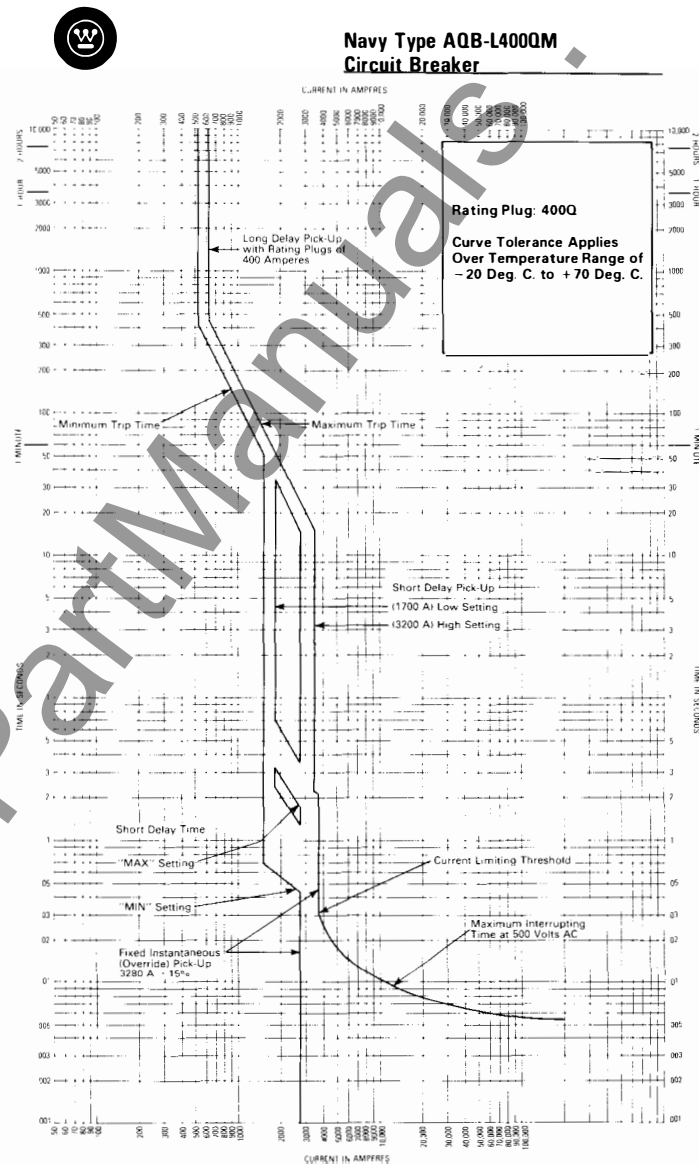
Navy Type AQB-L400QM Circuit Breaker



Time-Current Curves for AQB-L400QM Circuit Breaker with 300 Ampere Rating Plug



Time-Current Curves for AQB-L400QM Circuit Breaker with 350 Ampere Rating Plug



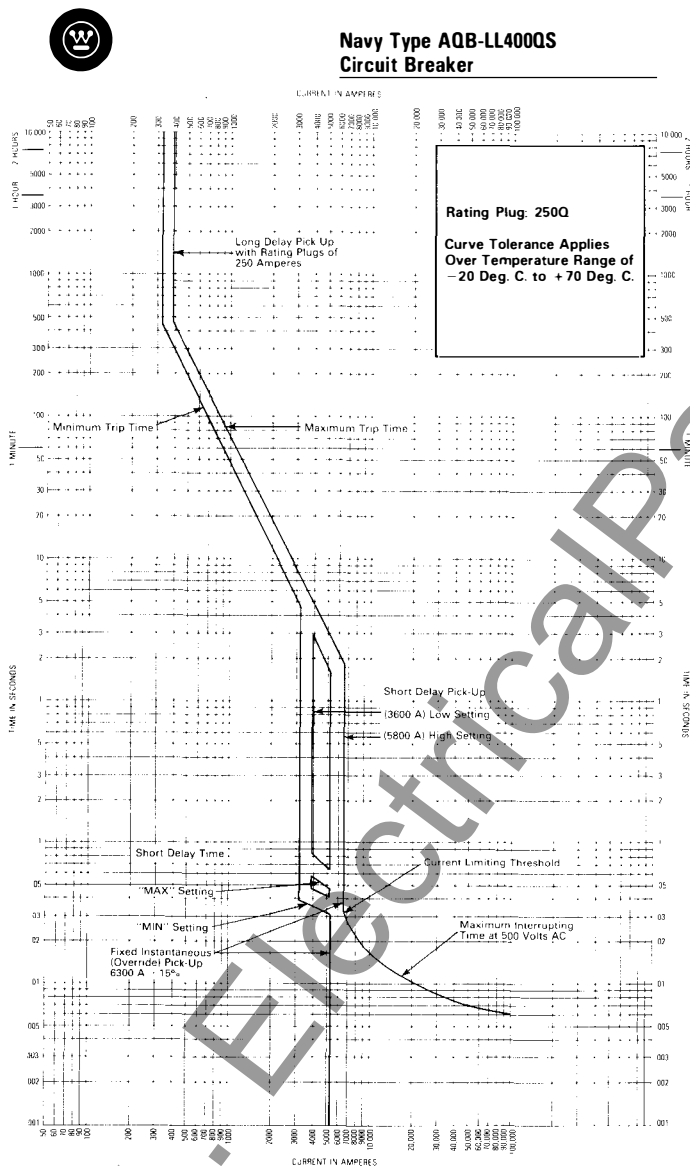
Time-Current Curves for AQB-L400QM Circuit Breaker with 400 Ampere Rating Plug



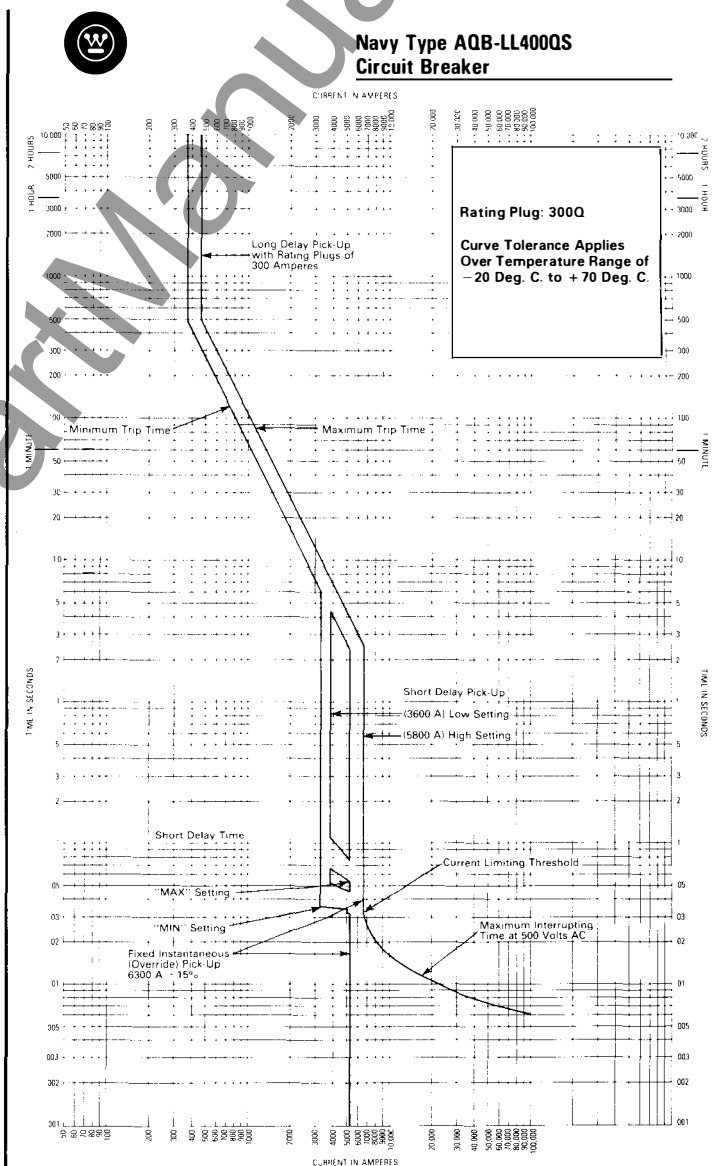
July 1991
Supersedes Technical Data 29-220,
pages 49-50, dated April 1991
Mailed to: E, D, C/29-200A

Types AQB-L400, AQB-LL400
500 Volts Ac
400 Amperes Maximum, 150,000,
100,000 Amperes I.C., Respectively

AB DE-ION® Circuit Breakers for Naval Shipboard Use



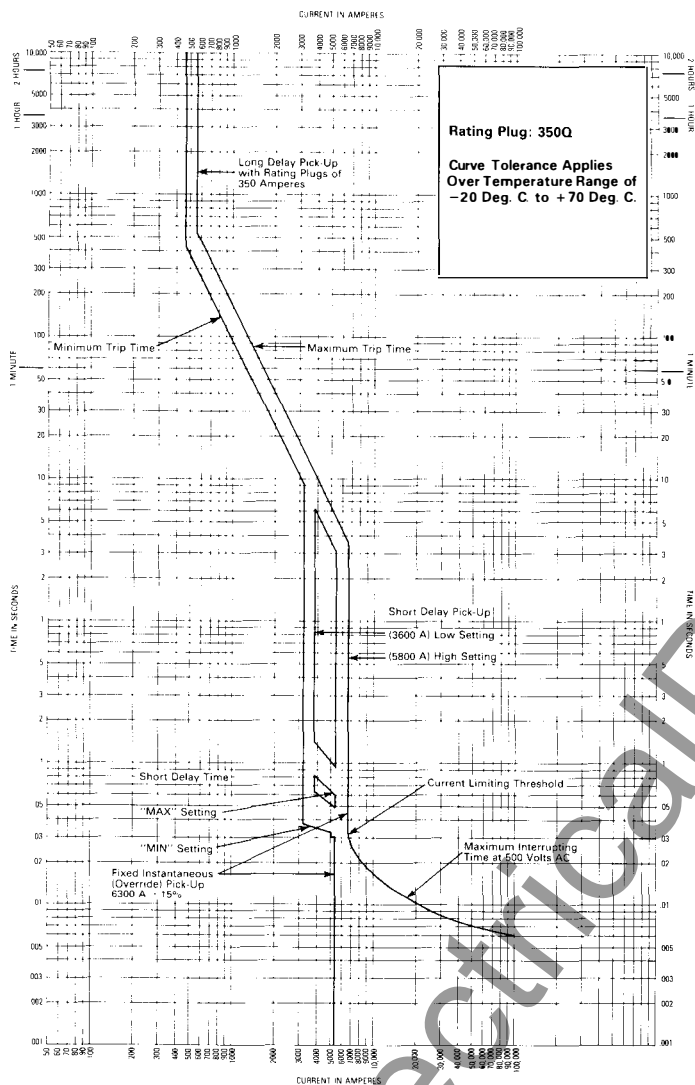
Time-Current Curves for AQB-LL400QS Circuit Breaker with 250 Ampere
Rating Plug



Time-Current Curves for AQB-LL400QS Circuit Breaker with 300 Ampere
Rating Plug



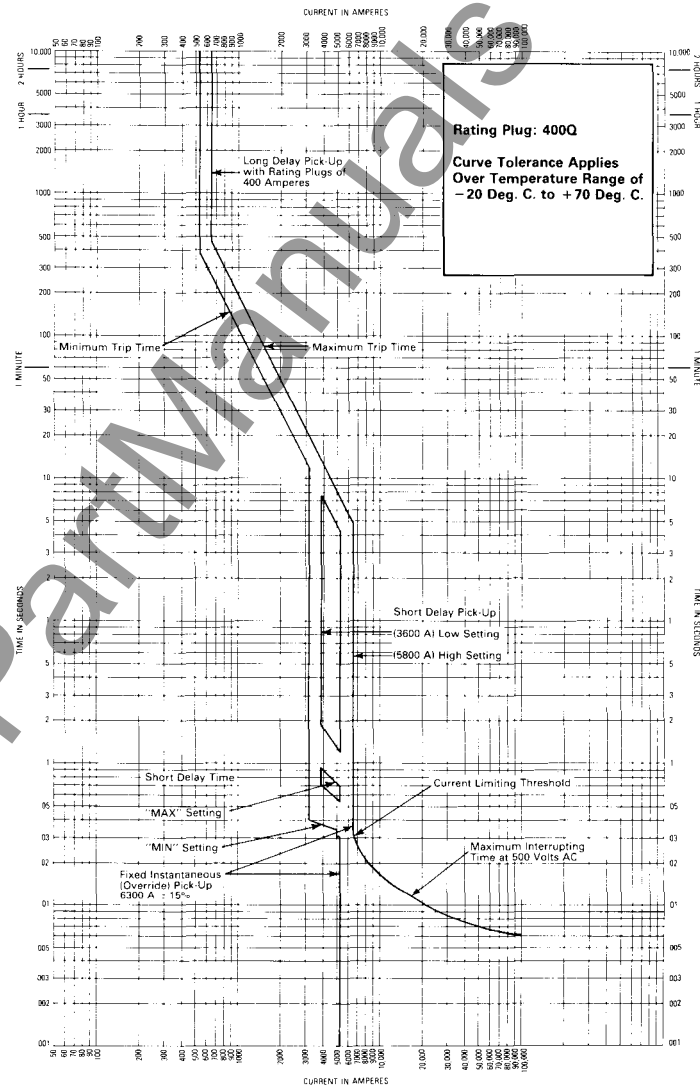
Navy Type AQB-LL400QS Circuit Breaker



Time-Current Curves for AQB-LL400QS Circuit Breaker with 350 Ampere Rating Plug

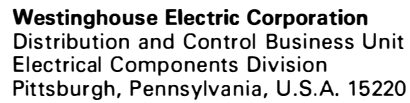


Navy Type AQB-LL400QS Circuit Breaker



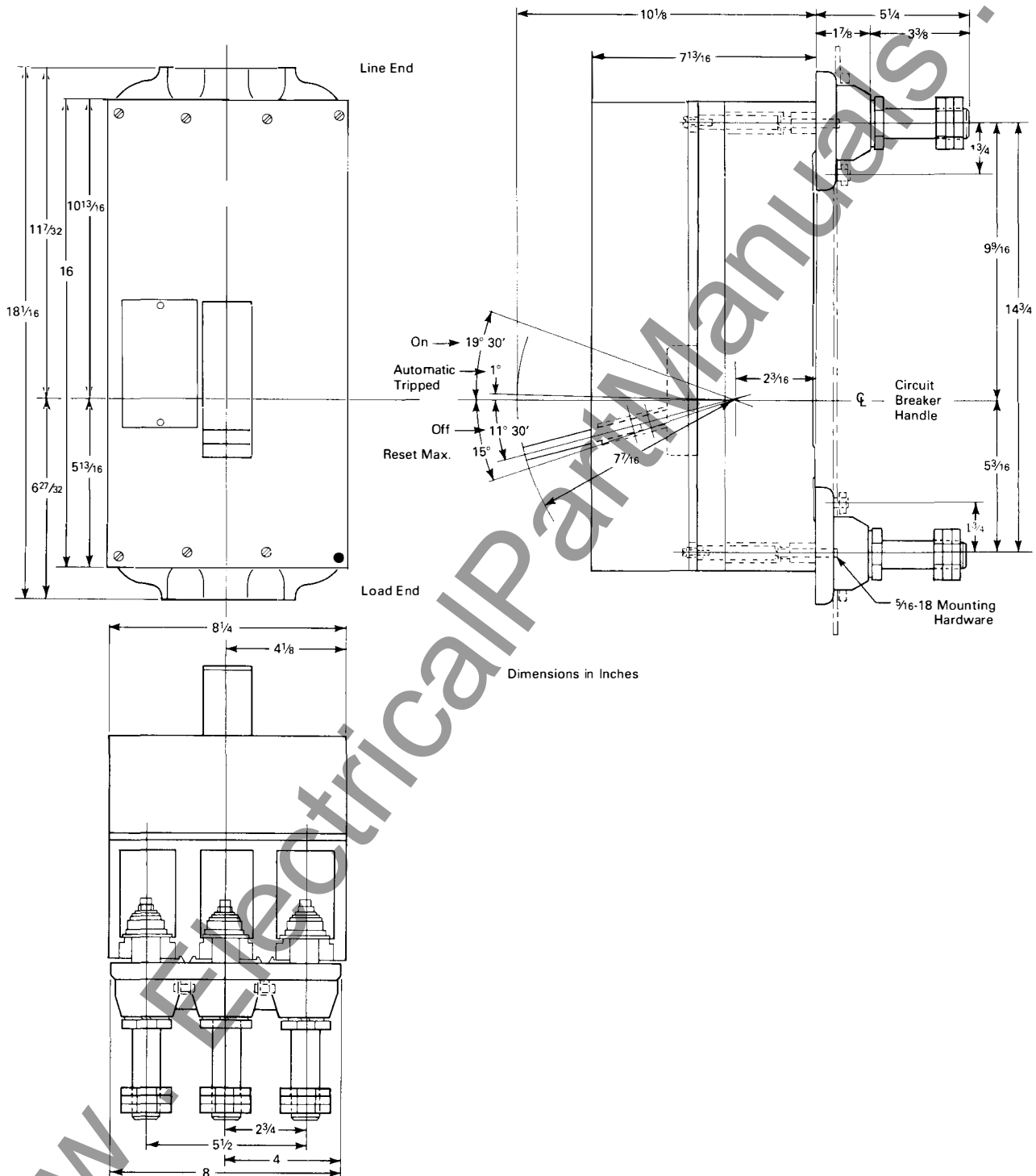
Time-Current Curves for AQB-LL400QS Circuit Breaker with 400 Ampere Rating Plug

Westinghouse Electric Corporation
Distribution and Control Business Unit
Electrical Components Division
Pittsburgh, Pennsylvania, U.S.A. 15220





Outline AQB-L400, AQB-LL400 with Motor Operator

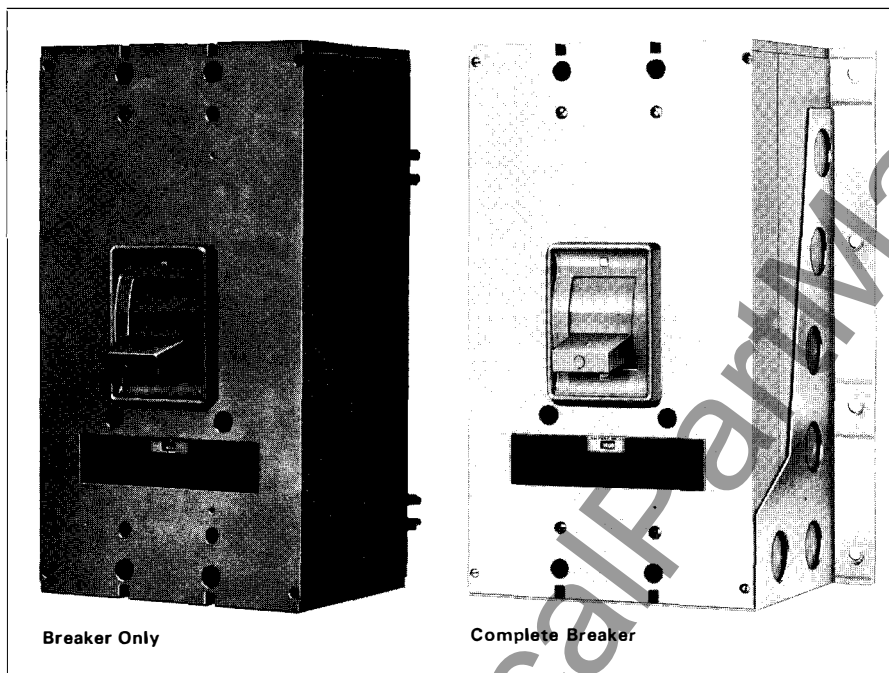




July 1991
Supersedes Technical Data 29-220,
pages 55-56, dated April 1991
Mailed to: E, D, C/29-200A

Types AQB-A1601, NQB-A1601
500-1600 Amperes; 500 Volts, 60 Hz Ac,
75,000 Amperes I.C.

AB DE-ION® Circuit Breakers for Naval Shipboard Use



AQB-A1601 and NQB-A1601 Navy Breakers

Note: AQB-A1601 are sold for replacement only. They are no longer on the Navy Qualified Products List.

500-1600 Amperes, 500 Volts A-c, 60
Cycles Only, 3-Pole, 50°C Ambient
Interrupting Rating: 75,000 Amps. A-c
(Without Delayed Instantaneous)
50,000 Amps. A-c (With Delayed
Instantaneous)

Specification: MIL-C-17361

Class: Hi Shock MIL-S-901

Vibration: MIL-STD-167

Material and Workmanship: MIL-E-917

AQB-A1601 circuit breakers are designed for installation in switchboards for protection of generators and feeder and branch circuits.

A complete breaker consists of a breaker plus mounting base and is available with numerous attachments such as electrical operator, shunt trip, undervoltage release and auxiliary switches to perform varied auxiliary functions.

Trip units for these breakers have an adjustable instantaneous trip and are listed with and without delayed instantaneous trip for system coordination.

NQB-A1601 Breakers have a continuous rating of 1600 amperes. They are used only as disconnects since they do not have an automatic trip device.

Note: Breakers with ratings other than those listed above are considered as special and full descriptive data must be provided.

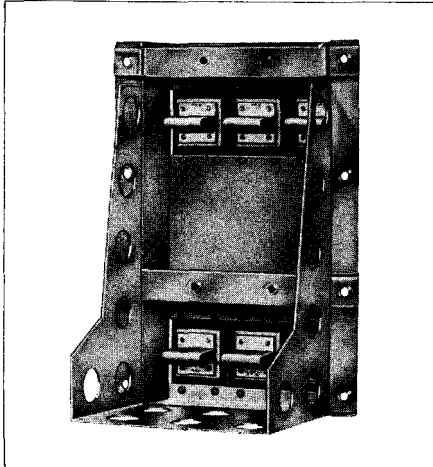
400 cycle breakers are not available.

List Prices See Price List 29-020 3 Pole, 500 Volts, 60 Cycles A-c

Type	Continuous Ampere Rating	Instantaneous Trip Setting		Breaker Only, consists of:		Trip Unit Style Number	National Stock Number
		A-c Amperes Low	High	Frame (Includes Stabs) Style Number	National Stock Number		
Without Delayed Instantaneous Trip							
AQB 600X	2000	6000	372D522G02	5925-01-105-4401	372D523G01	.....	
AQB 600XM	4000	12000	372D522G02	5925-01-105-4401	372D523G03	.....	
AQB 800X	2000	6000	372D522G02	5925-01-105-4401	372D523G07	.....	
AQB 1000X	2000	6000	372D522G02	5925-01-105-4401	372D524G03	.....	
AQB 1200X	2000	6000	372D522G02	5925-01-105-4401	372D524G05	.....	
AQB 1400X	4000	12000	372D522G02	5925-01-105-4401	372D524G07	.....	
AQB 1600X	4000	12000	372D522G02	5925-01-105-4401	372D524G09	5925-00-406-6131	
NQB 1600	.....	.....	372D522G04	.....	372D524G10	.....	
With Delayed Instantaneous Trip (XT1 – Min. Time Delay .0417 – .0458 Sec.)							
AQB 500XT1	2000	6000	372D522G02	5925-01-105-4401	374D211G01	.....	
AQB 800XT1	2000	6000	372D522G02	5925-01-105-4401	374D211G07	.....	
AQB 1000XT1	2000	6000	372D522G02	5925-01-105-4401	374D212G03	.....	
AQB 1200XT1	2000	6000	372D522G02	5925-01-105-4401	374D212G05	5925-00-102-6086	
AQB 1600XT1	4000	12000	372D522G02	5925-01-105-4401	374D212G09	5925-00-727-7574	
With Delayed Instantaneous Trip (XT2 – Max. Time Delay .0708 – .0750 Sec.)							
AQB 500XT2	2000	6000	372D522G02	5925-01-105-4401	374D221G01	.....	
AQB 800XT2	2000	6000	372D522G02	5925-01-105-4401	374D221G07	.....	
AQB 1200XT2	2000	6000	372D522G02	5925-01-105-4401	374D222G05	5925-00-727-7555	
AQB 1600XT2	4000	12000	372D522G02	5925-01-105-4401	374D222G09	5925-00-103-4248	



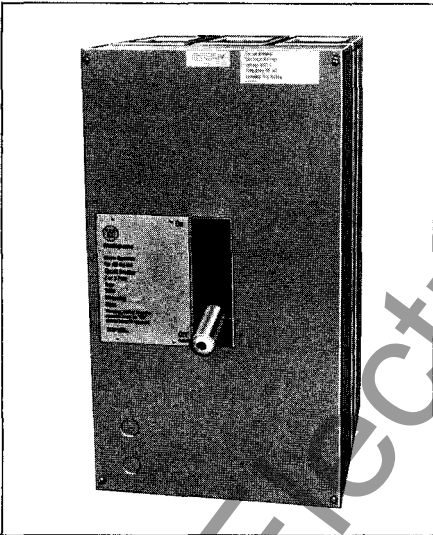
Mounting Base^①



For switchboard mounting. Includes back connectors for switchboard bus and male stabs to engage breaker. Matching stabs are supplied with breaker frame.

Style Number: 373D307G02

Electrical Operator^①



Mounts to front of breaker for remote operation. 450 volt Ac rating utilizes a transformer in conjunction with a 120 volt motor. If automatic reset is desired, order the circuit breaker with optional Automatic Reset Switch (See Optional Additions)

Rating	Style Number	National Stock Number
120 V A-c	1371D38G06	None
450 V A-c	1371D38G08	Assigned

Optional Additions^①

Shunt Trip^②: Mounts in right pole only. Has momentary rating only; coil leads must be wired in series with 1A contact of auxiliary switch.

Undervoltage Release^②: Mounts in right pole only.

Auxiliary Switch: Mounts in left pole only. 4 contacts, any combination of A's and B's, (supplied as 2A and 2B unless specified) 8 contacts, any combination of A's and B's, (supplied as 4A and 4B unless specified)

Automatic Reset Switch

For use with motor operator when an automatic reset function is required. Factory installed only.

Cable Connector: Mounts to bus connector for cable connection. Each lug accepts four cables, 600 MCM max. 1 lug required per bus connector.

Style Number: 505C706G03

Fungus, Moisture Resistant Treatment:

(JAN-C-173 or MIL-V-173): If specified, contact Westinghouse. External parts are coated; trip units are not treated.

Drawings

Master plan: 900J442

Sheet 1 of 4: Breaker Only and Wiring diagrams

Sheet 2 of 4: Trip Unit, Curves and Attachments

Sheet 3 of 4: Mounting Base and Cable Connectors

Sheet 4 of 4: Motor Operator

Individual Reproductions: When required, reproductions of sheets 1 thru 4 of master plan 900J442 can be ordered as follows:

Type Reproduction

Vellum
Prints (Paper)

Technical Manual: NAVSHIPS No. 0962-014-5000. This booklet per MIL-M-15071. When required, order BVR-TM-576.

Dimensions: Pages 57, 58, 59

Characteristic Curves: Pages 60, 61

^① Can be field mounted.

^② Breaker can be supplied with either shunt trip or undervoltage release, but not both.

Net Weights

Description	Weight, Lbs.
Breaker Only	
AOB	151
NOB	148
Breaker Frame (AOB and NOB)	128
Trip Unit	
AOB	23
NOB	20
Mounting Base Only	75
Electrical Operator, 115 Volt	27
Electrical Operator, 450 Volt	35
Shunt Trip	$\frac{3}{4}$
Undervoltage Release	1 $\frac{1}{4}$
Auxiliary Switch	1 $\frac{1}{4}$
Cable Connector	3

Ordering Information

When ordering Westinghouse Navy circuit breakers consult the check list below to make sure you have provided correct information. You should specify:

1. Quantity, Westinghouse style number and National stock number of:

- Breaker frame and trip unit.
- Mounting base.
- Spare breakers or trip units. (Usually one required for each ten units or fraction thereof of each current rating.)
- Instruction books.

2. Shipment

Specify transportation means, method of packaging and preservation and required shipping date.

3. Drawings

Specify quantity of outline or master plan drawings required.

4. Inspection

Indicate whether Government Source inspection is required at factory prior to shipment.



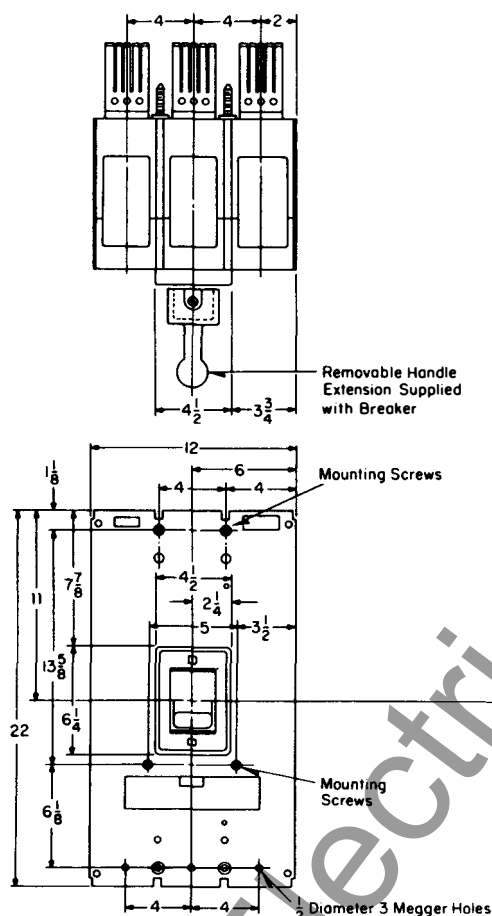
July 1991
Supersedes Technical Data 29-220,
pages 57-58, dated April 1991
Mailed to: E, D, C/29-200A

Types AQB-A1601, NQB-A1601
500-1600 Amperes; 500 Volts, 60 Hz. Ac.
75,000 Amperes I.C.

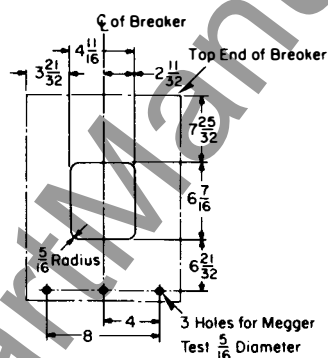
AB DE-ION® Circuit Breakers for Naval Shipboard Use

AQB and NQB Circuit Breaker Frame Outline Dimensions

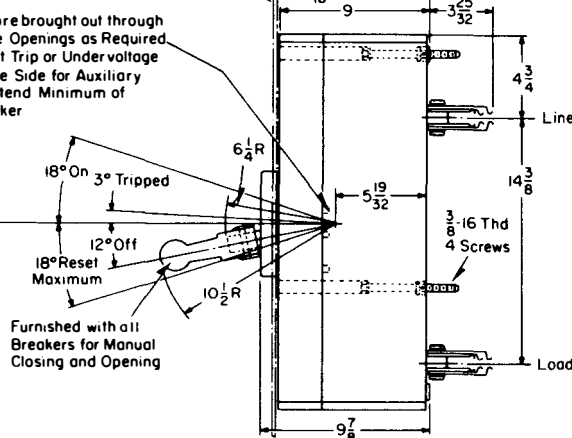
NQB—Same except for trip unit nameplate.



Front Panel Cutout



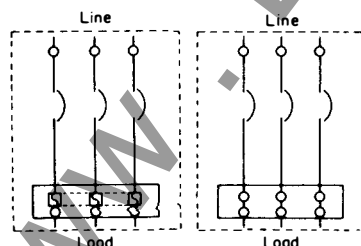
Switchboard Front Panel



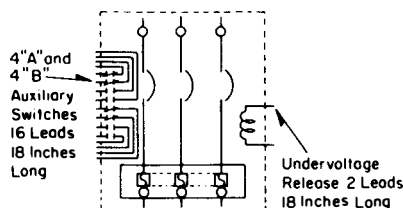
Wiring Diagrams

AQB

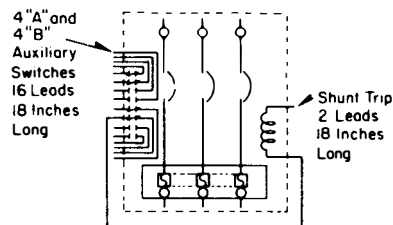
NQB



When undervoltage release and auxiliary switches are provided



When shunt trip and auxiliary switch are provided



Note: The auxiliary switch must be used with each shunt trip. Connect one side of shunt trip in series with "A" contact (closed when breaker is closed) of auxiliary switch when connecting to power supply.



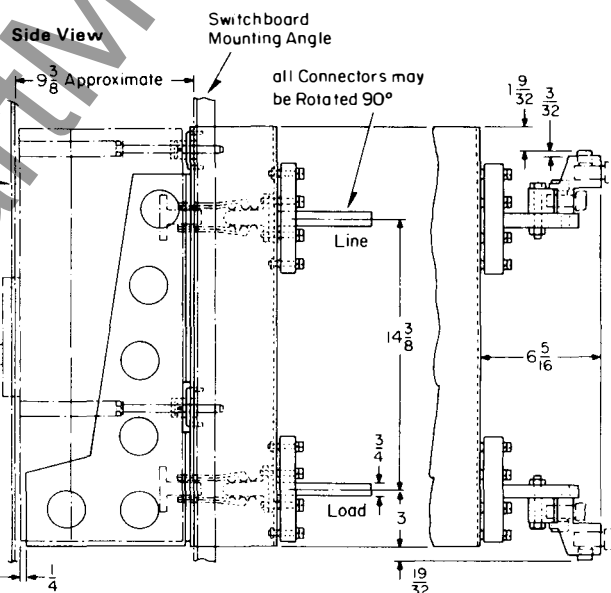
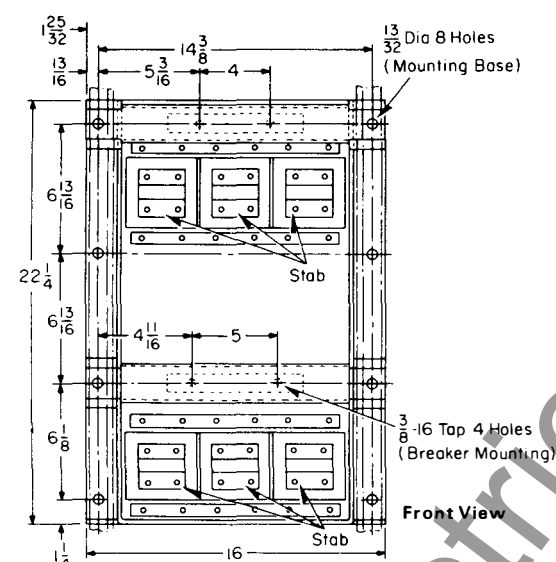
Top View

Switchboard Mounting Angle

Switchboard Back Panel

Dimensions:

- Overall width: $12\frac{7}{16}$
- Overall height: $13\frac{5}{8}$
- Top section width segments: $2\frac{1}{2}$, 4 , 4 , 4
- Top section height segments: $1\frac{1}{16}$, $5\frac{1}{8}$, $4\frac{5}{8}$
- Top section width segments (inner): $3\frac{3}{4}$, 1 , 3 , $1\frac{1}{2}$, $1\frac{1}{2}$, $3\frac{3}{4}$
- Top section height segments (inner): $7\frac{1}{16}$ Dia, 1
- Bottom section height segments: $1\frac{1}{4}$, 9
- Bottom section width segments: $25\frac{13}{32}$



Technical drawing of a square mounting base. The drawing shows a square plate with a central square hole. The outer dimensions are 14 ³/₈ inches by 22 ¹/₂ inches. The inner dimensions of the central hole are 12 ⁷/₈ inches by 6 ⁷/₈ inches. The distance from the center of the hole to the outer edge is 6 ¹³/₁₆ inches. The thickness of the plate is 1 ¹/₈ inches. The drawing includes a label 'Outline of Mounting Base' and a note '13/32 Dia 8 Holes'.

Diagram illustrating the dimensions and components of a 11 kV switchgear:

- Top End of Breaker**: Indicated by an arrow pointing to the top edge of the main enclosure.
- Radius**: Indicated by an arrow pointing to the rounded corner of the internal component.
- 3 Holes for Megger Test - $\frac{5}{16}$ Diameter**: Indicated by an arrow pointing to three small circular holes at the bottom of the enclosure.
- Dimensions**:
 - Overall width: 32 $\frac{1}{32}$
 - Internal width (excluding breakers): 4 $\frac{11}{16}$
 - Distance between breakers: 2 $\frac{11}{32}$
 - Overall height: 7 $\frac{25}{32}$
 - Internal height (excluding breakers): 6 $\frac{7}{16}$
 - Distance from bottom to holes: 6 $\frac{21}{32}$
 - Distance between holes: 4
 - Overall distance between holes: 8

With cable connectors style 505C706G03
lug capacity—four 600 MCM cables per lug