



## DESCRIPTION

I-T-E manufactures a complete line of Navy molded-case circuit breakers. A full range of frame sizes and breaker ratings is available for 60- and 400-cycle applications, including breakers with provision for current limiting, selective trip and 1000-volt operation. They are used in load centers, lighting and distribution panelboards and switchboards. Navy molded-case circuit breakers conform to specification MIL-C-17361 (MIL-C-17588 for ALB or NLB breakers).

### CONSTRUCTION FEATURES

**Thermal time-delay trip.** Operates on the inverse-time-element principle to provide overload protection without circuit interruption on harmless overloads.

**Magnetic instantaneous trip.** Assures split-second tripping on short circuits.

**Overcenter toggle mechanism.** Imparts quick-make, quick-break operation. Breaker cannot be held closed against an overload or a short circuit.

**Silver-alloy contacts.** Breakers will carry full-rated load indefinitely without overheating.

**High contact pressure.** Assures long contact life and low power loss.

**Common tripper bar.** All poles operate simultaneously when a fault occurs on any phase, preventing a single-phase condition.

**Arc chute.** Extinguishes arc immediately, provides high interrupting capacity.

**Plug-in mounting.** Standard for all breakers. Solderless pressure wire connectors also available.

**Three-position handle.** Indicates ON, TRIPPED, or OFF.

**Totally enclosed case.** Prevents tampering and protects personnel from live parts.

**Extra-wide pole spacings.** Designed on minimum 1½-inch pole centers. Provides greater electrical clearance, allows sturdier construction and easier installation.

**Instantaneous trip adjustment.** Available on many frame sizes as indicated. Provides 5-step adjustment.

**Interchangeable trip units.** Allows changing continuous rating of breaker without replacing whole breaker on all AQB breakers with the exception of the AQB-A50, AQB-A101, and AQB-A101F.

**Enclosed terminals.** Provide added safety without hindering access to connectors.

### ANTI-SHOCK DEVICE

Consists mainly of an inertia weight, located over center pole, under the trip unit cover. It is so designed that under shock it holds the tripper bar in its latched position preventing breaker from tripping.

Under shock conditions, this device does not prevent the thermal or magnetic trip units from opening the circuit breaker under overload conditions, but does prevent the circuit breaker

from opening during shock. After each tripping operation, the anti-shock device returns to its normal position.

### SHOCK-RESISTANT MOLDED CASE

Composition of case material provides high dielectric and mechanical strength with excellent moisture resistant qualities. Eliminates distortion, cracking of case from shock or vibration. Barriers molded into rear base section isolate current carrying parts, also grooves in barriers provide increased creepage distance from phase to phase and from phase to ground.

### CURRENT-LIMITING BREAKERS

Complete thermal-magnetic protection against normal overload and short-circuit currents is combined with the protection of Amp-trap† current-limiting fuses against fault currents up to 100,000 amperes symmetrical rms.

### SELECTIVE-TRIP BREAKERS

A timer mechanism, mounted on the breaker base, provides a short time delay of the magnetic trip. This allows selective tripping in switchboard applications of limited interrupting rating where maximum continuity of service is required.

### 1000-VOLT OPERATION

Breakers have greater space between poles to increase the creepage and electrical clearance required for use in 1000-volt distribution panelboards and switchboards.

### THERMAL-TRIP CHARACTERISTICS

All thermal trip units are calibrated for a 50C ambient and are set to trip as follows for 60 cycle ac or dc breakers.

Breaker	Overcurrent, %	Tripping Time	
ALB-1 ALB-5	115	More than 1 hour	
	138	Less than 1 hour	
	200	10-100 seconds	
AQB-A50	115	More than 1 hour	
	138	Less than 1 hour	
	200	10-200 seconds	
AQB-A100 AQB-AT100 AQB-A250 AQB-A400 AQB-AT400 AQB-A600 AQB-A800 AQB-A1600	150	More than 1 hour	
	225	Less than 1 hour	
	600	20-32 seconds <sup>①</sup>	
	AQB-LF100 AQB-LF250 AQB-LF400	130	More than 1 hour
		225	Less than 1 hour
		600	20-32 seconds

① AQB-A1600 tripping time at a 600% overcurrent ranges from 20-60 seconds.

For 400 cycle or other special breakers, refer to MIL-C-17361 for thermal-trip times.

† Registered trademark, The Chase-Shawmut Co.

(continued)



**DESCRIPTION (Continued)**

**NON-AUTOMATIC CIRCUIT INTERRUPTER**

All breakers, except current-limiting or selective-trip types, offer a version, designated NLB or NQB, which does not contain a trip unit and therefore serves a switching function without providing automatic overload protection. For all AQB breakers with the exception of AQB-A50 and AQB-A101, kits are available which convert the breaker frame to an NQB non-automatic circuit interrupter.

**MOUNTING ARRANGEMENTS**

For ALB-1, ALB-5 and AQB-A50 breakers, mounting-base units are available for panelboard mounting. For three-pole breakers single units offer front or back connection for line and load terminals or line back-connected and load front-connected. Pressure-type connections are used and pressure wire connectors are attached to mounting-block conductors for fast, simple cable connections.

Current-limiting breakers—AQB-LF100, AQB-LF250 and AQB-LF400 and the selective trip AQB-AT400—are designed for back connection only using stud assemblies and plug-in tulip connectors.

All other breakers are designed for front connection using solderless connectors, or for normal back connection in removable construction using stud assemblies and plug-in tulip connectors, except the AQB-A1600 breaker which utilizes a special mounting unit.

**ACCESSORIES, ADDITIONS**

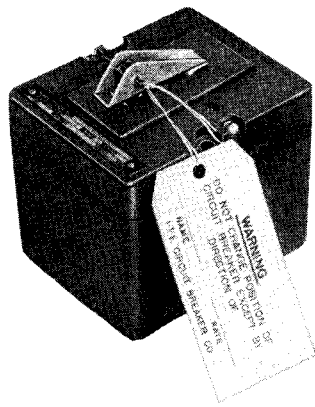
Special-feature additions are available to adapt standard breakers to specific installation requirements. These must be specified by catalog number (see Section 17.1.5.3, Pages 1-3) when ordering and they will be factory-installed to assure proper operation.

**Shunt Trip.** Operates through an auxiliary switch contact to provide remote tripping of the breaker.

**Auxiliary Switch.** Provides contacts for applications requiring remote ON and OFF indication or electrical interlocking.

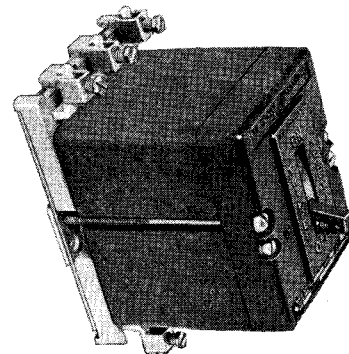
**Motor Mechanism.** Mounts on breaker to allow electrical operation from a remote location. An automatic reset feature is available which allows closing a tripped breaker without going through OFF stage.

**Handle-Locking Devices.** Available for all breakers.



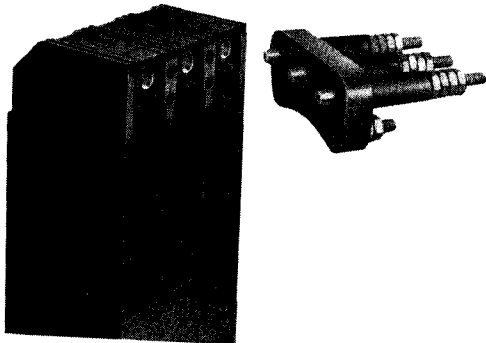
ALB-5 circuit breaker with handle locking device and service warning tag attached. Breaker will still trip if locked in the ON position.

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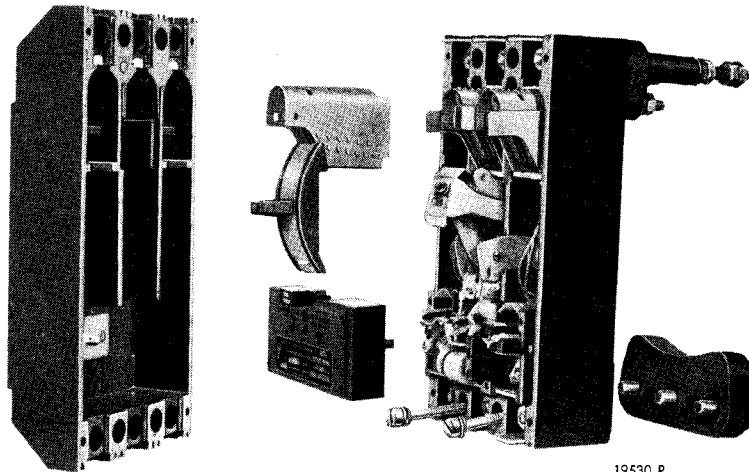
Mounting base units for panelboard mounting of ALB-5 circuit breakers provide a secure and rigid base with positive, tight contact between breaker and mounting base stabs.

18422-R



19531-R

Contact studs of switchboard mounting block assemblies provide snug, silver to silver contact with slip-type connectors in circuit breaker case.



19530-R

Exploded view of AQB-A100 circuit breaker showing: front case cover interior, magnetic arc chute, operating handle, interchangeable trip cover, rear case section assembly and terminal mounting blocks.

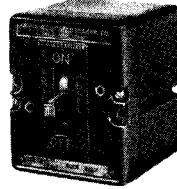


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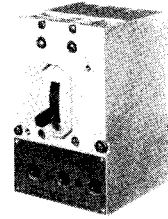
E40480-R

ALB-1  
50 Ampere 1 Pole



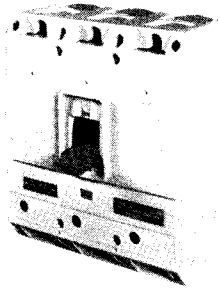
17853-R

ALB-5, AQB-A50  
50 Ampere 3 Pole



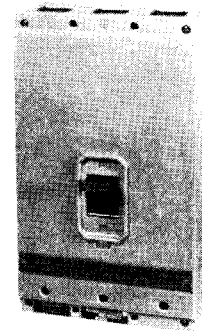
E40490

AQB-A101  
100 Ampere 3 Pole



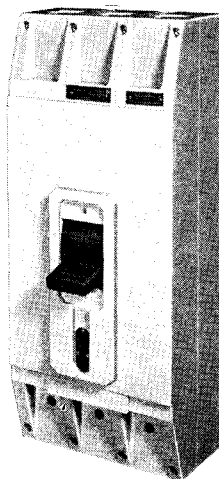
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AQB-A250  
250 Ampere 2, 3 Pole



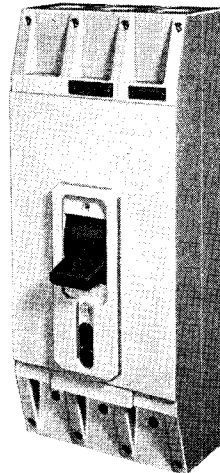
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AQB-A400  
150 to 400 Ampere 2, 3 Pole



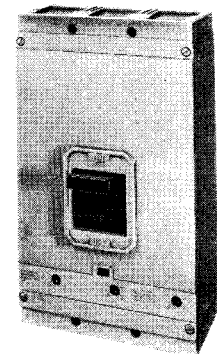
E40479-R

AQB-A600  
250 to 600 Ampere 2, 3 Pole



E40479

AQB-A800  
400 to 800 Ampere 3 Pole

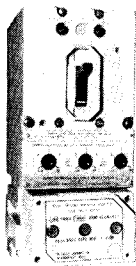


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AQB-A1600  
600 to 1600 Ampere 3 Pole

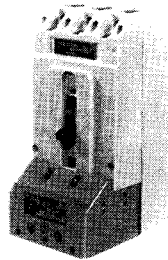


DESCRIPTION (Continued)



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AQB-A101F  
100 Ampere 3 Pole



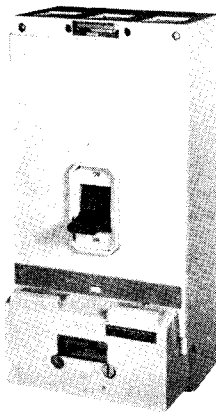
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AQB-LF100  
100 Ampere 2, 3 Pole



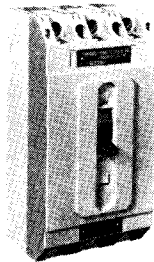
28925

AQB-LF250  
250 Ampere 2, 3 Pole  
Current-Limiting



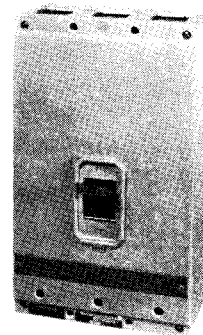
E40486

AQB-LF400  
400 Ampere 3 Pole  
Current-Limiting



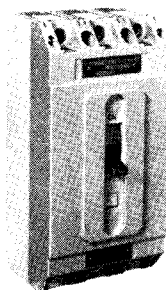
E40489-R

AQB-AT100  
100 Ampere 3 Pole  
Selective Trip



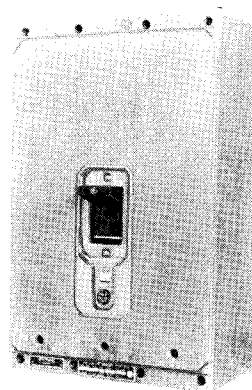
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AQB-AT400  
250 to 400 Ampere 3 Pole  
Selective Trip



E40489-R

AQB-C100  
100 Ampere 3 Pole  
1000 Volt



16132-R

AQB-C225  
100 to 225 Ampere 3 Pole  
1000 Volt



**DESCRIPTION (Continued)**

**RATINGS**

Breaker Type	Poles Available	Ampere Rating (60 Cycles and DC)	Voltage Rating (60 Cycles and DC)	Voltage Rating 400 Cycles <sup>①</sup>	Interrupting Rating <sup>②</sup>	For Dimensions, See Cat. Sec. 17.1.2 Page	For Prices <sup>①</sup> See Cat. Sec. 17.1.5.1 Page
ALB-1	1	5-50	125V ac, 125V dc	125V ac	5000A ac, <sup>③</sup> 2500A dc	1	1
NLB-1		50	125V ac, 125V dc		—		
ALB-5	3	10-50	125V ac, 125V dc	125V ac	5000A ac, 2500A dc	2, 3	1
NLB-5		50	125V ac, 125V dc		—		
AQB-A50	3	10-50	500V ac, 250V dc	500V ac	5000A ac, 2500A dc	2, 3	1
NQB-A50		50	500V ac, 250V dc		—		
AQB-A100	2 or 3	15-100	500V ac, 250V dc	500V ac	15000A ac, 10000A dc	5	2
NQB-A100		100	500V ac, 250V dc		—		
AQB-C100	3	15-100	—	1000V ac	—	17	(Cat. Sec. 17.1.5.2) 2
NQB-C100		100	—		—		
AQB-A101	3	15-100	500V ac, 250V dc	500V ac	15000A ac, 10000A dc	4	1
NQB-A101		100	500V ac, 250V dc		—		
AQB-C225	3	125-225	—	1000V ac	—	18	(Cat. Sec. 17.1.5.2) 2
NQB-C225		225	—		—		
AQB-A250	2 or 3	100-250	500V ac, 250V dc	500V ac	20000A ac, 15000A dc	6	3
NQB-A250		250	500V ac, 250V dc		—		
AQB-A400	2 or 3	150-400	500V ac, 250V dc	500V ac	30000A ac, 20000A dc	7	5
NQB-A400		400	500V ac, 250V dc		—		
AQB-A600	2 or 3	250-600	500V ac, 250V dc	—	30000A ac, 20000A dc	8	6
NQB-A600		600	500V ac, 250V dc		—		
AQB-A800	3	400-800	500V ac, 250V dc	500V ac	50000A ac	9	6
NQB-A800		800	500V ac, 250V dc		—		
AQB-A1600	3	600-1600	500V ac	—	75000A ac	10	7
NQB-A1600		1600	500V ac		—		
<b>CIRCUIT BREAKERS WITH SELECTIVE-TRIP DEVICES</b>							
AQB-AT100	3	100	500V ac	—	4000A ac	15	10
AQB-AT400		250-400			15000A ac	16	10
<b>CIRCUIT BREAKERS WITH CURRENT-LIMITING FUSES</b>							
AQB-LF100	2 or 3	15-100	500V ac	—	100,000A ac	12	8
AQB-A101F	3	15-100				11	8
AQB-LF250	2 or 3	125-250				13	9
AQB-LF400	3	250-400				14	9

① For prices of 400-cycle, 125 and 500-volt breakers, see Section 17.1.5.2, Pages 1-3.

② Asymmetrical rms amperes.

③ Interrupting rating of 5-ampere ALB-1 is 1500 amperes at 125 volts ac/dc.

SPECIFICATION FOR ALB-1 AND ALB-5 BREAKERS IS MIL-C-17588

SPECIFICATION FOR ALL OTHER BREAKERS IS MIL-C-17361