

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-Hertz 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.

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-A101 Current Limiting.

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.

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 50°C ambient and are set to trip as follows for 60 Hertz ac or dc breakers.

Breaker	Overcurrent, %	Tripping Time
ALB-1	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-A250	150	More than 1 hour
AQB-A400		
AQB-A600		
AQB-A800		
AQB-A1600	600	20-32 seconds ①
AQB-LF250	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 Hertz or other special breakers, refer to MIL-C-17361 for thermal-trip times.

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(continued)

Gould Inc., Distribution & Controls Division
P.O. Box 100, Reading, Pa. 19602

5. Previous issue dated April, 1975

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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 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-A101, AQB-LF250 and AQB-LF400 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

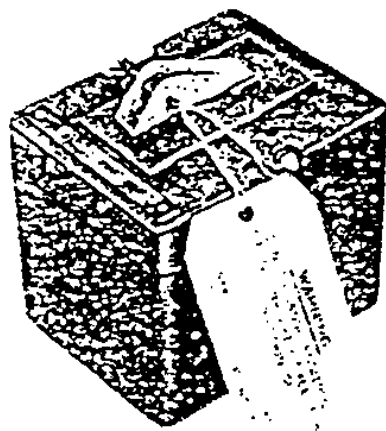
Special-feature additions are available to adapt standard breakers to specific installation requirements. These must be specified by catalog number (see Section 17.1.5.3, Pages 1-3) when ordering and they will be factory-installed to assure proper operation.

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.

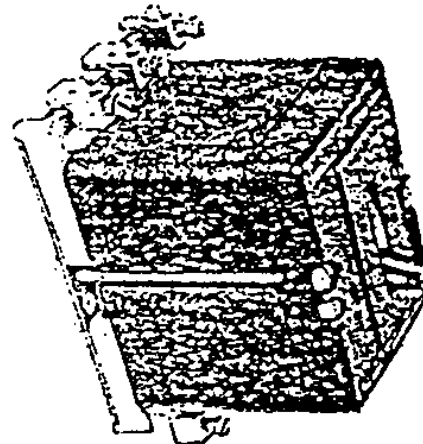
Motor Mechanism. Mounts on breaker to allow electrical operation from a remote location. An automatic reset feature is available which allows closing a tripped breaker without going through OFF stage.

Handle-Locking Devices. Available for all breakers.

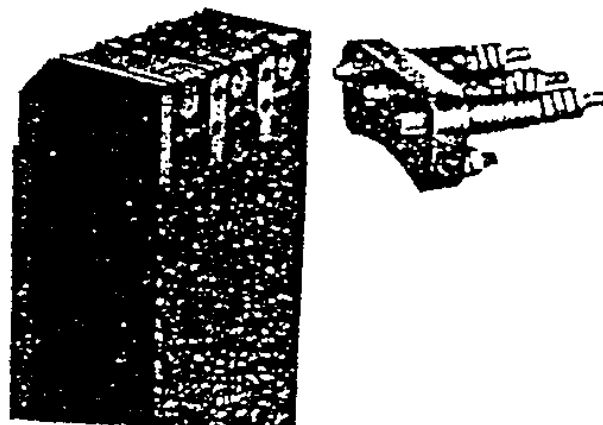


AQB-A50 circuit breaker with handle locking device and service warning tag attached. Breaker will still trip if locked in the ON position.

Mounting base units for panelboard mounting of AQB-A50 circuit breakers provide a secure and rigid base with positive, tight contact between breaker and mounting base studs.



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

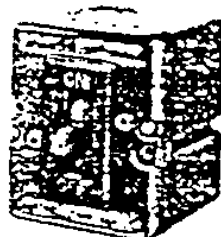
18420-R

19531-R

DESCRIPTION (Continued)



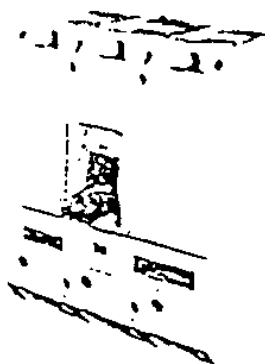
ALB-1
50 Ampere 1 Pole



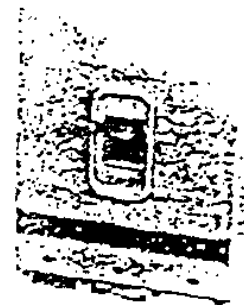
AQB-A50
50 Ampere 3 Pole



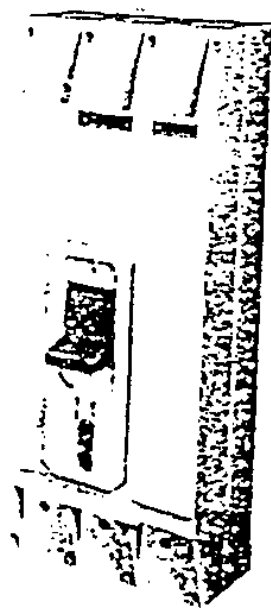
AQB-A101
100 Ampere 3 Pole



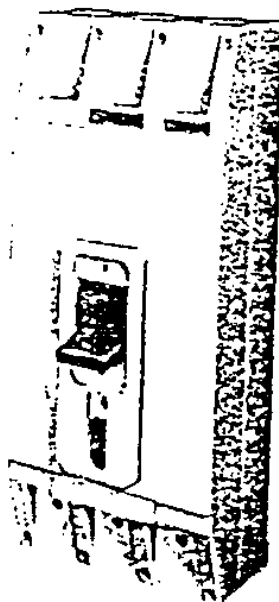
AQB-A250
250 Ampere 2, 3 Pole



AQB-A400
150 to 400 Ampere 2,3 Pole



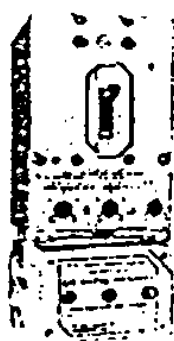
AQB-A600
250 to 600 Ampere 2, 3 Pole



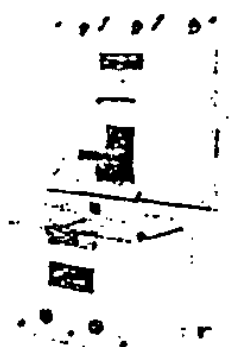
AQB-A800
400 to 800 Ampere 3 Pole



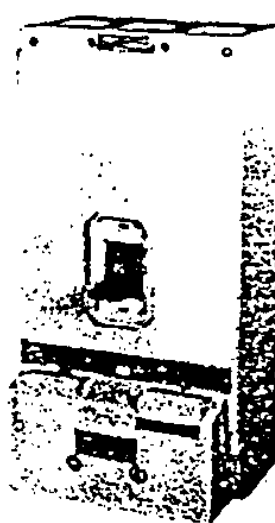
AQB-A1600
600 to 1600 Ampere 3 Pole

DESCRIPTION (Continued)

AQB-A101
100 Ampere 3 Pole
Current-Limiting



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



AQB-LF400
400 Ampere 3 Pole
Current-Limiting

DESCRIPTION (continued)

RATINGS

Breaker Type	Poles Available	Ampere Rating (60 Hertz and DC)	Voltage Rating (60 Hertz and DC)	Voltage Rating 400 Hertz①	Interrupting Rating②	For Dimensions, See Cat. Sec. 17.1.2 Page	For Prices③ See Cat. Sec. 17.1.5.1 Page
ALB-1 NLB-1	1	5-50 50	125V ac, 125V dc 125V ac, 125V dc		5000A ac,③ 2500A dc — —	1	1
AQB-A50 NQB-A50	3	10-50 50	500V ac, 250V dc 500V ac, 250V dc		5000A ac, 2500A dc — —	2,3	1
AQB-A101 NQB-A101	3	15-100 100	500V ac, 250V dc 500V ac, 250V dc	500V ac	15000A ac, 10000A dc — —	4	1
AQB-A250 NQB-A250	2 or 3	100-250 250	500V ac, 250V dc 500V ac, 250V dc	500V ac	20000A ac, 15000A dc — —	6	3
AQB-A400 NQB-A400	2 or 3	150-400 400	500V ac, 250V dc 500V ac, 250V dc	500V ac	30000A ac, 20000A dc — —	7	5
AQB-A600 NQB-A600	2 or 3	250-600 600	500V ac, 250V dc 500V ac, 250V dc	—	30000A ac, 20000A dc — —	8	6
AQB-A800 NQB-A800	3	400-800 800	500V ac, 250V dc 500V ac, 250V dc	500V ac	50000A ac — — —	9	6
AQB-A1600 NQB-A1600	3	600-1600 1600	500V ac	—	75000A ac —	10	7
CIRCUIT BREAKERS WITH CURRENT-LIMITING FUSES							
AQB-A101 AQB-LF250 AQB-LF400	3 2 or 3 3	15-100 125-250 250-400	500V ac	—	100,000A ac	11 13 14	8 9 9

① ALB1-AQB-A50 400 Hertz Obsolete.
② Asymmetrical rms amperes.
③ Interrupting rating of 5-ampere ALB-1 is 1500 amperes at 125 volts ac/dc.

SPECIFICATION FOR ALB-1 BREAKERS IS MIL-C-17588
SPECIFICATION FOR ALL OTHER BREAKERS IS MIL-C-17361

DESCRIPTION (continued) ORDERING INFORMATION

SPECIAL DESIGN FEATURES

It is no longer necessary to assign a serial number (number assigned to an order for a special item) to orders for so-called "standard-special" Navy circuit breaker modifications.

As all circuit breaker catalog numbers require a combination of seven letters and digits, by simply inserting code numbers or letters in five additional spaces, the majority of the special breakers can be handled within our catalog numbering system. By using Chart A, on Section 17.1.1 Page 7, the

different combinations of the features which are available can be found as well as the corresponding code numbers and letters.

Unless otherwise specified, auxiliary switches are wired with one "a" and one "b" contact, allowing the customer to eliminate one lead when it is not required. Shunt trips are wired with one "a" contact auxiliary switch only. When ordering a shunt trip, the customer should specify only the total number of additional auxiliary switches required, exclusive of the auxiliary switch included with the shunt trip.

TYPICAL ORDERING EXAMPLES USING CHART A ON OPPOSITE PAGE

1. A 175N ampere AQB-A250 is to be supplied with one auxiliary switch. By looking across from AQB-A250 and under the one (1) auxiliary switch column, there is the code number "10". This code number would be added to the catalog number, or ETN595610. Leave the last 3 places blank as no shunt trip or undervoltage trip is to be ordered.
2. A 250N ampere AQB-A250 is to be supplied with a 115Vac 60Hz. shunt trip. By looking across from AQB-A250, we would first need to add "00" as no auxiliary switch is to be ordered. Next, an "S" for shunt trip and "31" for the 115 Vac device voltage. The complete number would be ETN595600S31.
3. A 175N ampere AQB-A250 is to be supplied with two auxiliary switches and a 450Vac 60Hz. undervoltage trip. The catalog number would be ETN595620U06.

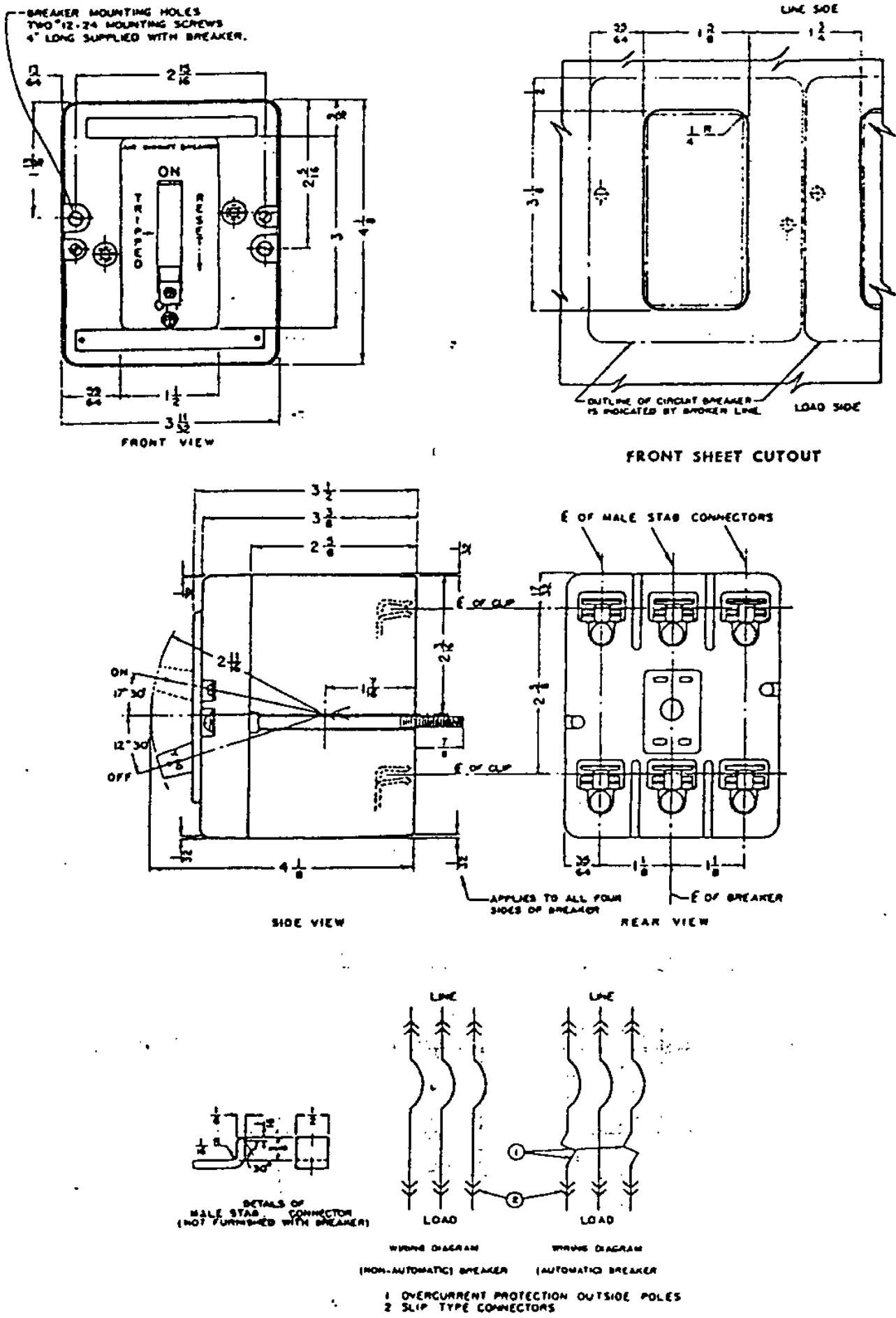
4. The AQB-A101 series breakers can have an auxiliary switch mounted in the left and/or right pole of the breaker. For example: if one auxiliary switch is to be mounted in left pole (which is the more common installation) by looking across from AQB-A101, the code number 10 would be used. If one switch is to be mounted in the right pole, the code number 01 would be used. If two switches are required, use code number 11, i.e., one auxiliary switch will be mounted in the left pole and the second switch will be mounted in the right pole.

NON-STANDARD ITEMS

For the availability of any non-standard item that cannot be ordered within the catalog numbering system as outlined in Chart A, consult the factory.

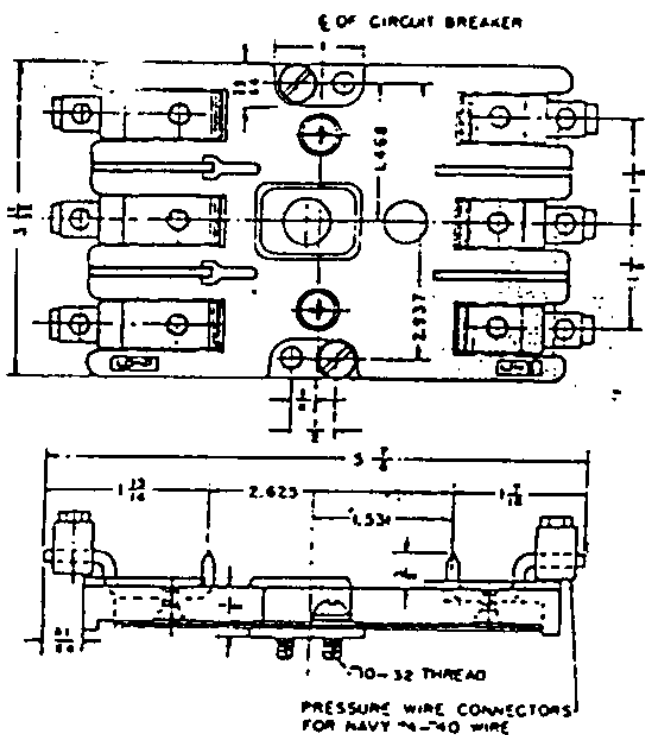
DIMENSIONS
AOB-A50

Dwg. 99350 (AOB-50)

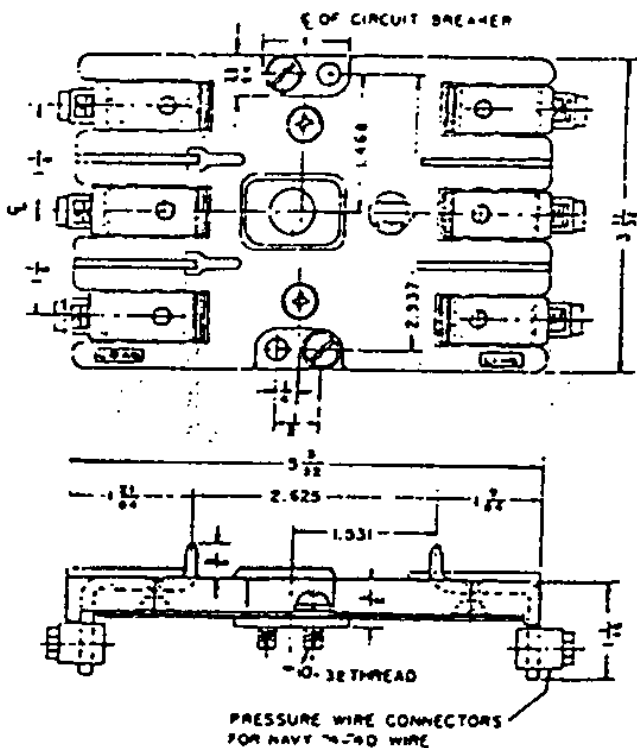


DIMENSIONS
AQB-A50
MOUNTING ASSEMBLIES

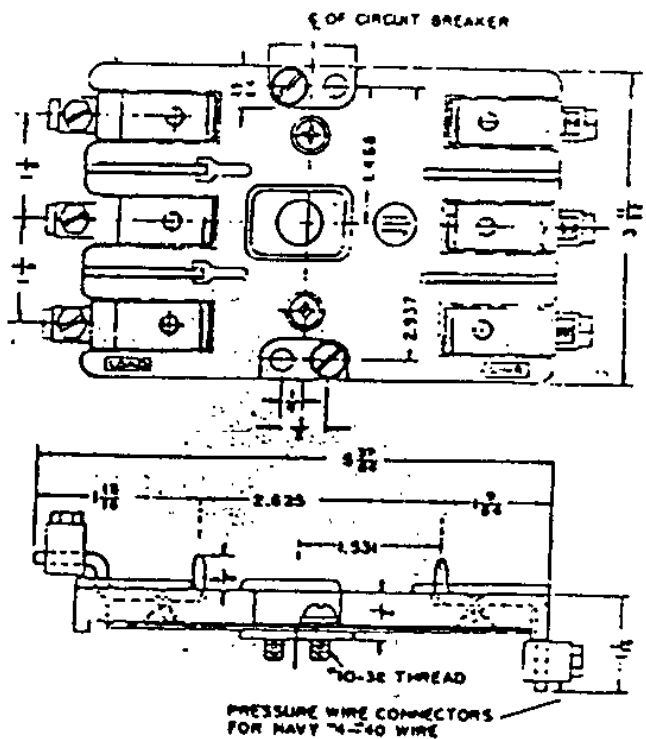
Dwg. No. S-13677



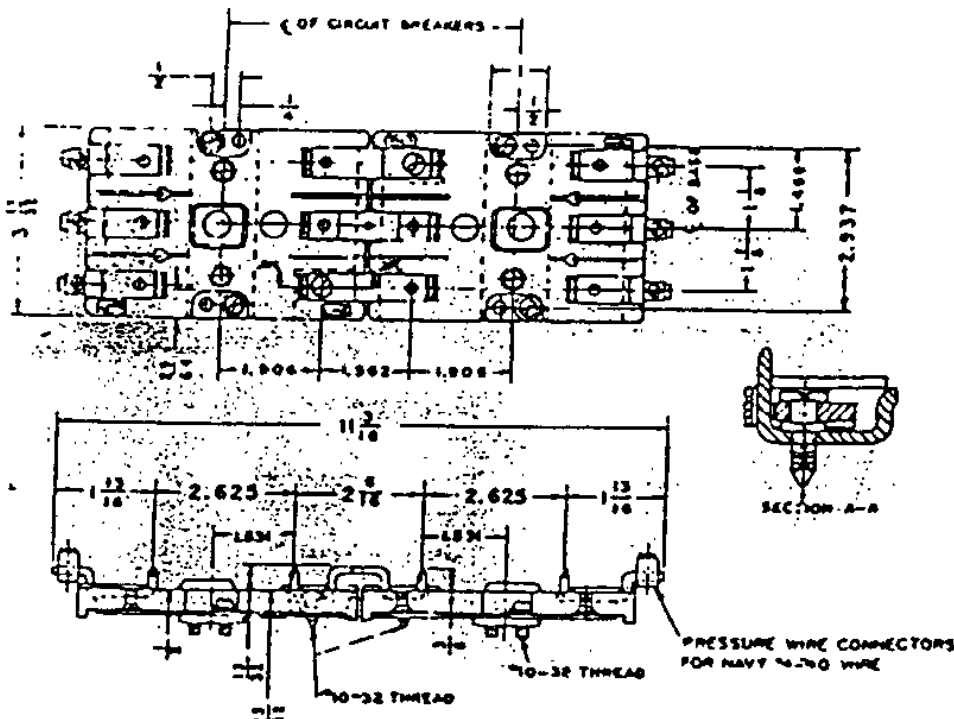
Single block front connected assembly
I-T-E Cat. No. ETN-1011



Single block back connected assembly
I-T-E Cat. No. ETN-1012



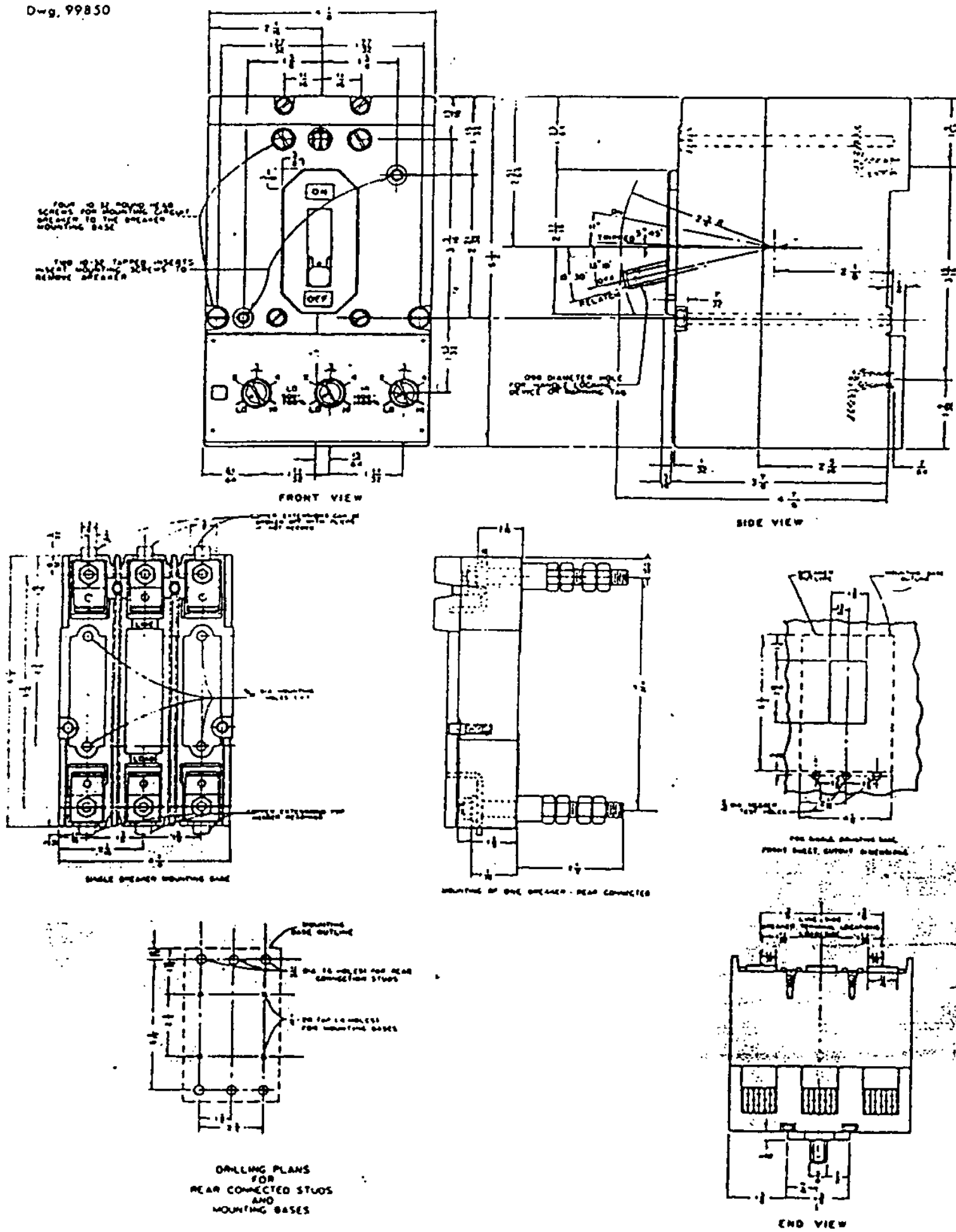
Front connected load, Back connected line assembly
I-T-E Cat. No. ETN-1013



Double block, Front connection
I-T-E Cat. No. ETN-1014

DIMENSIONS

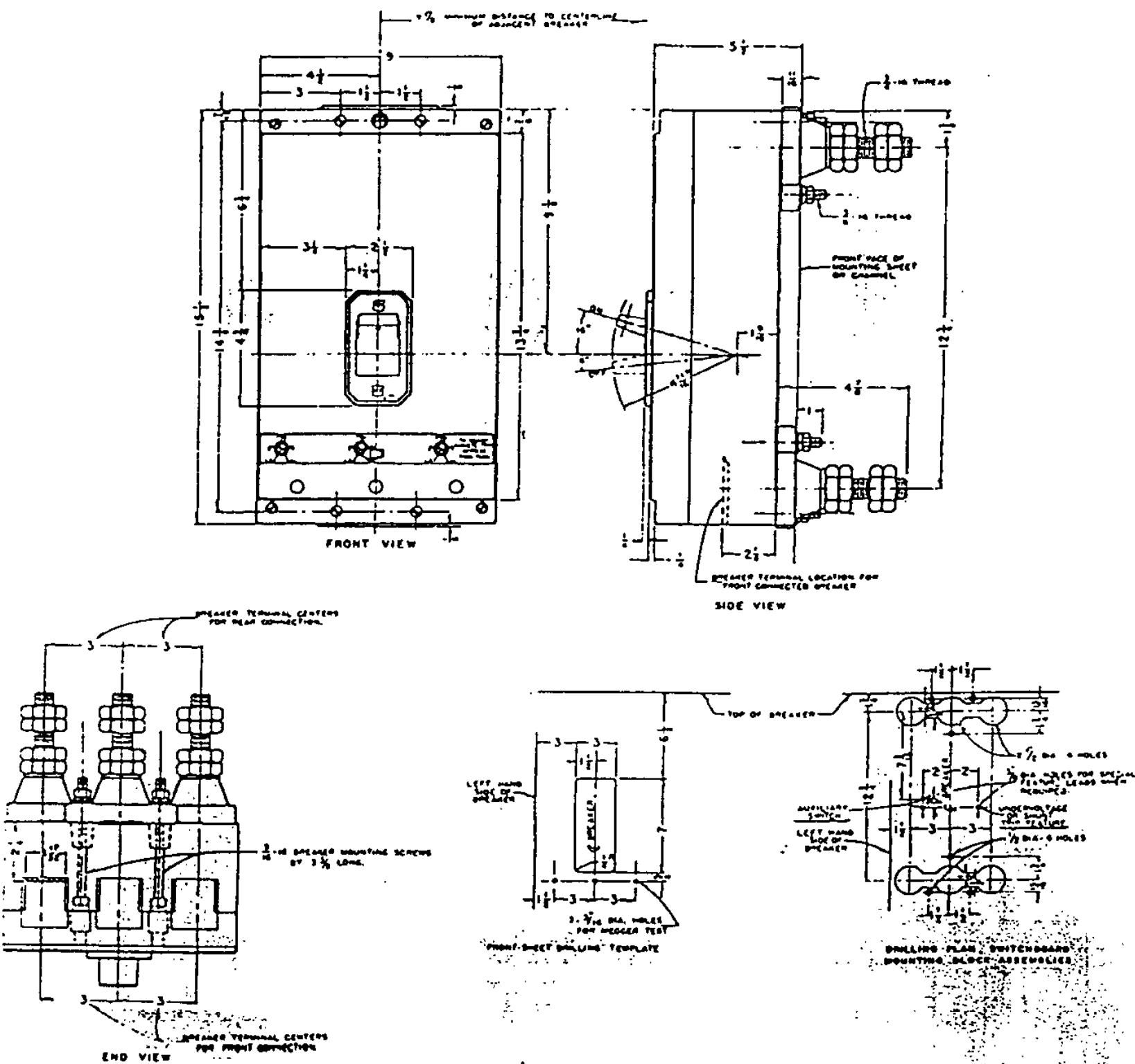
Dwg. 99850



July, 1979

DIMENSIONS
AOB-A400

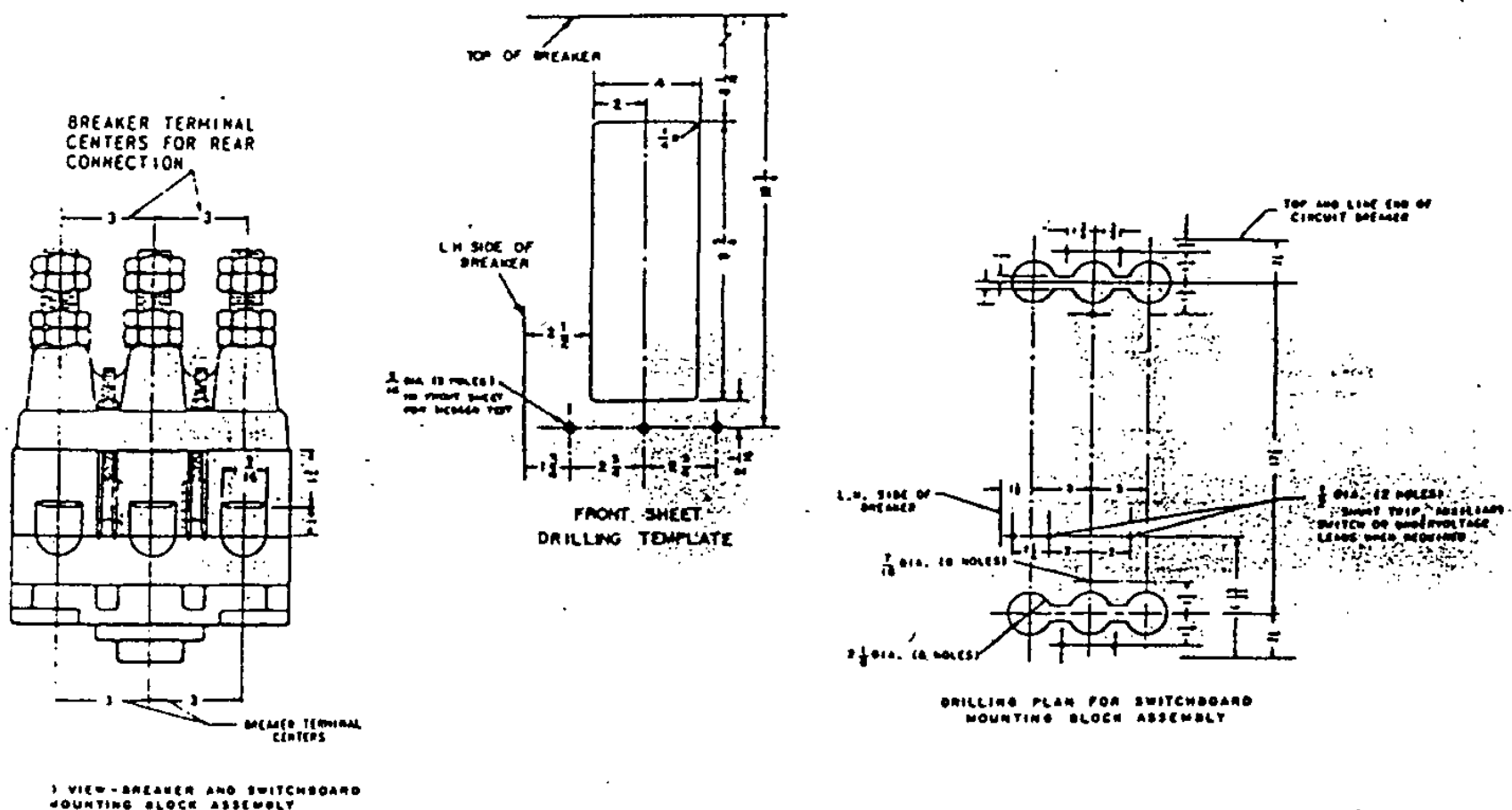
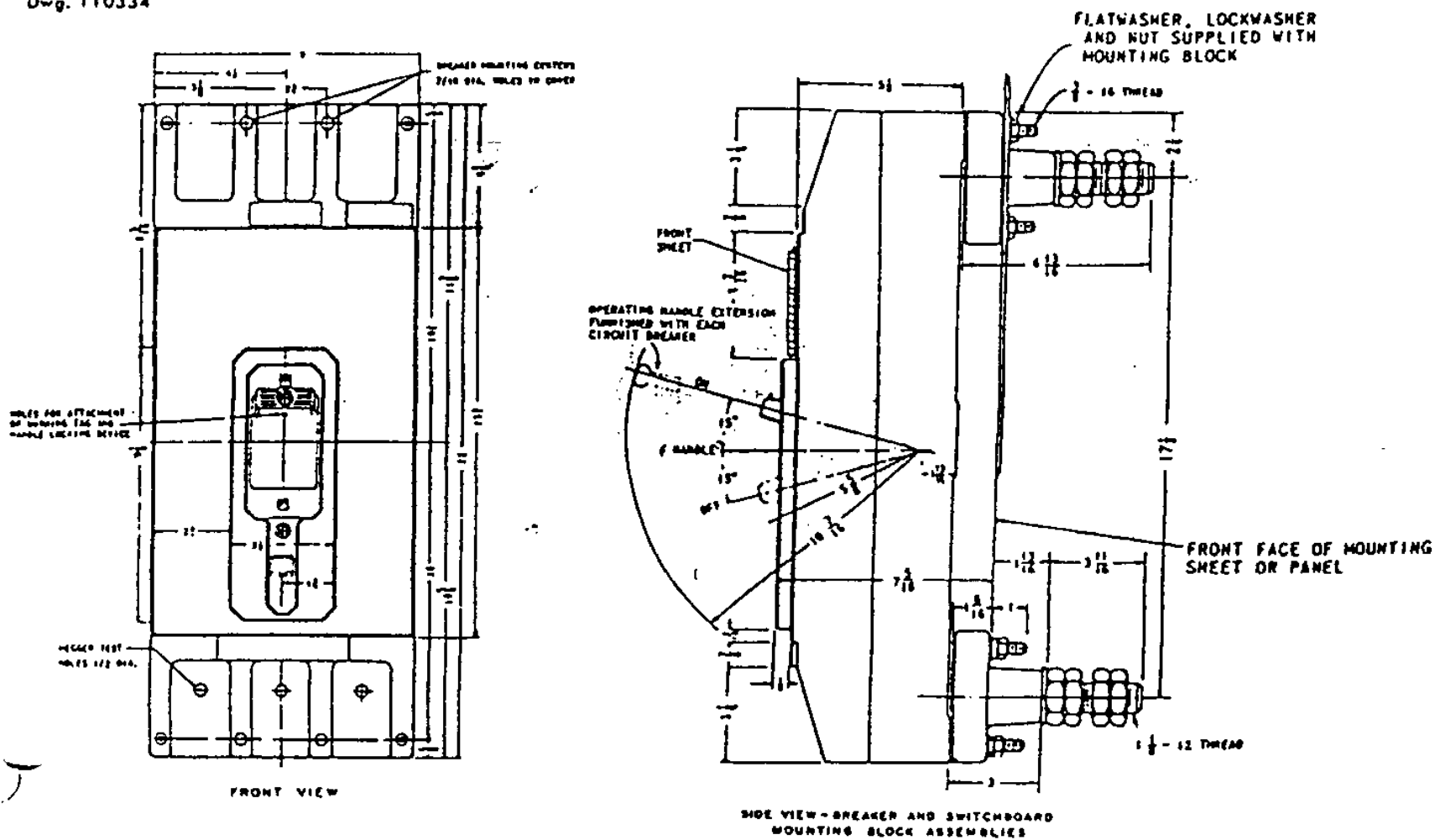
Dwg. S-15465



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DIMENSIONS AOB-A800

Dwg. 110334



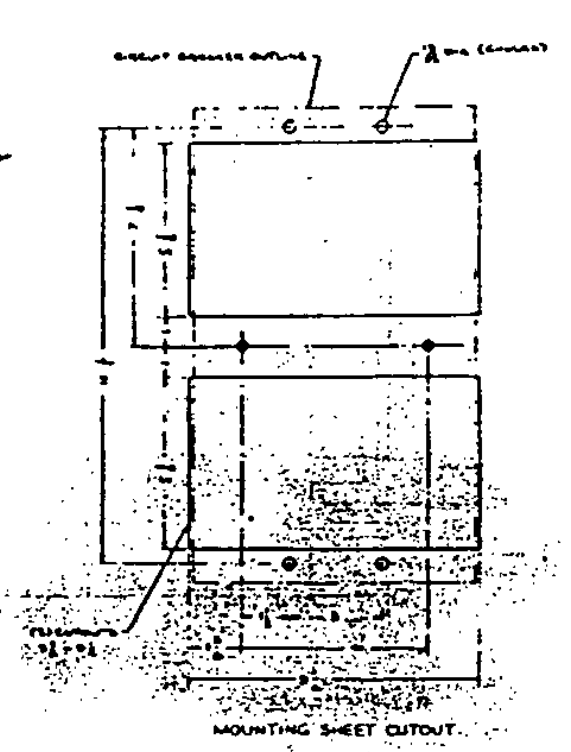
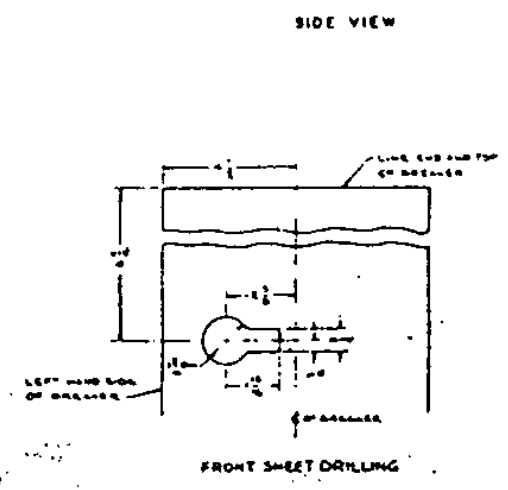
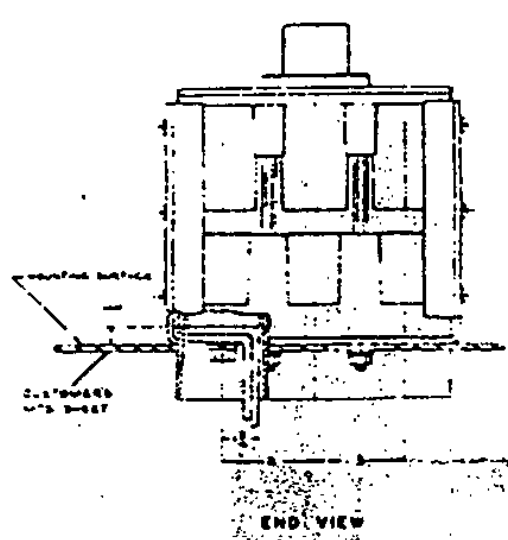
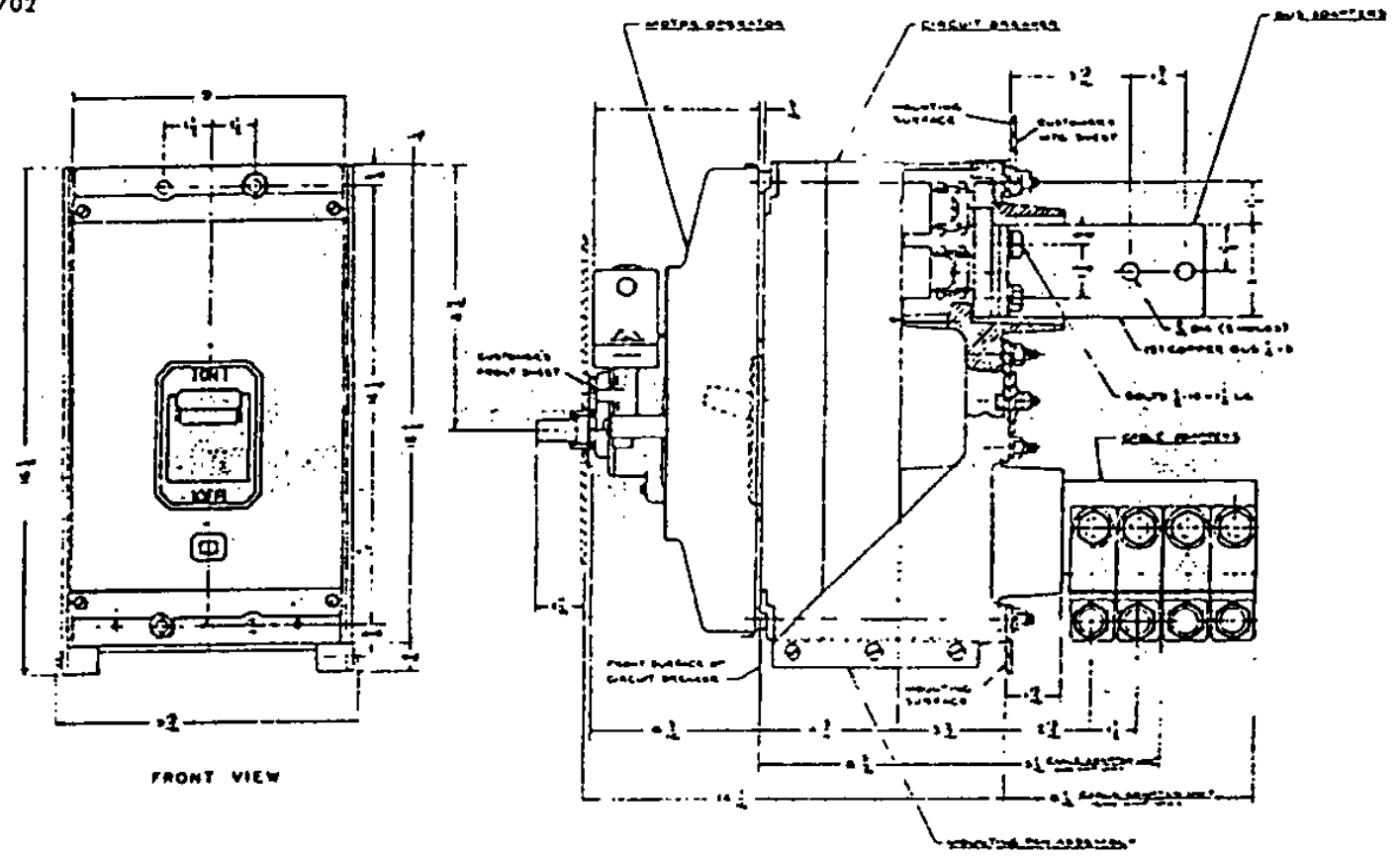
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Plymouth Meeting, Pa. 19462

Supersedes issue dated April, 1975

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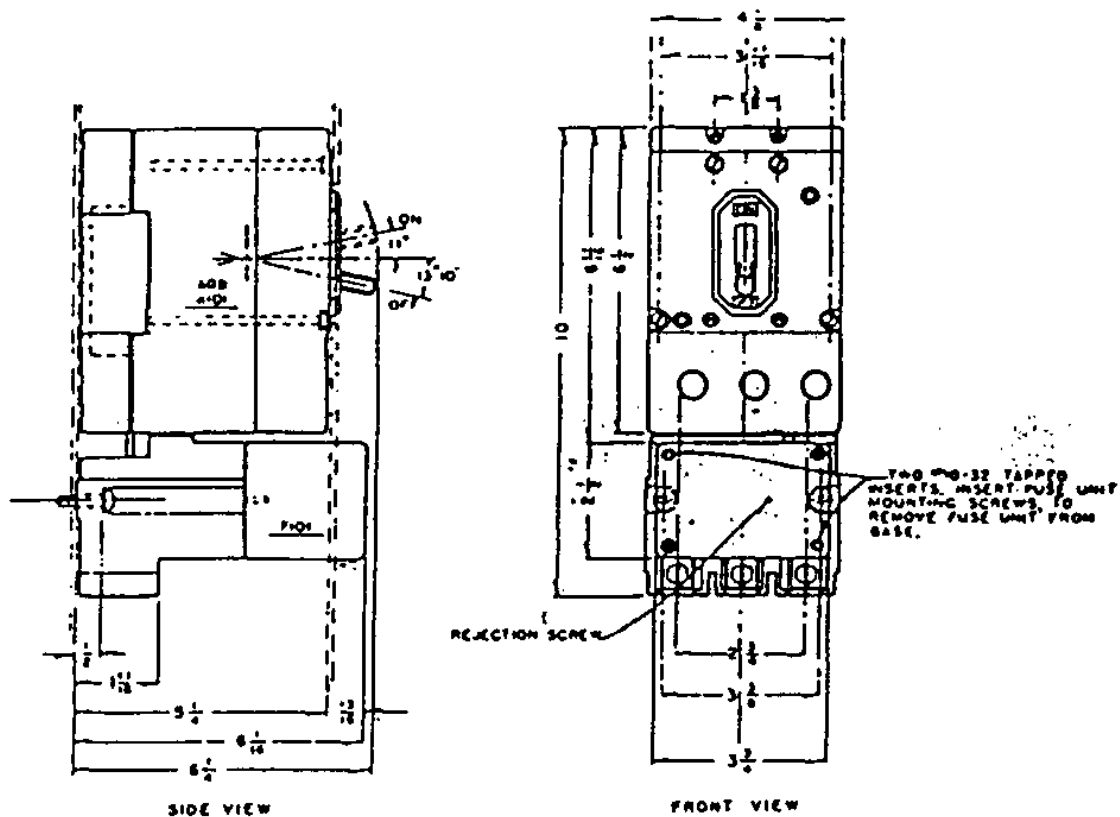
DIMENSIONS AQB-A1600

Dwg. S-15702

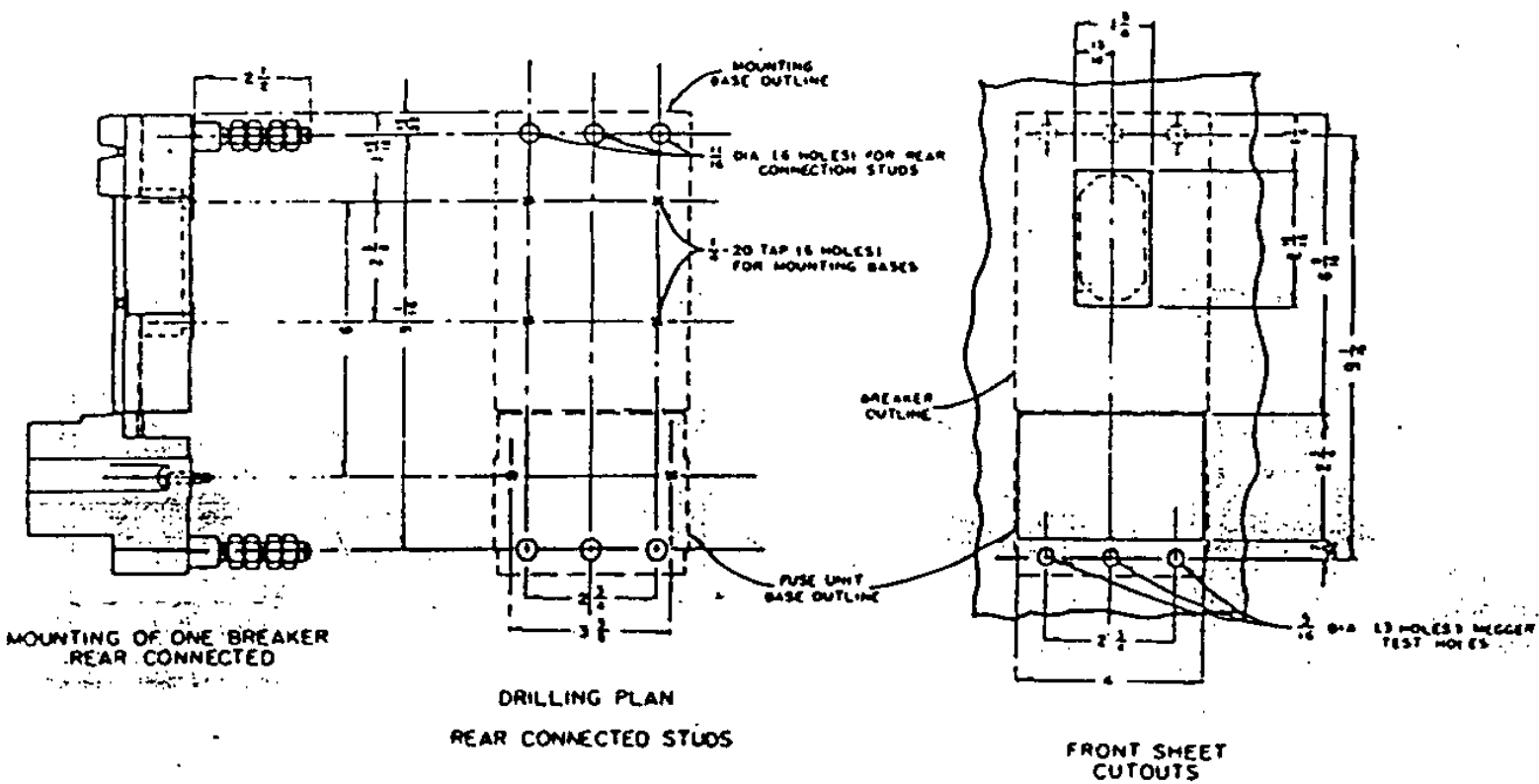


DIMENSIONS
AOB-A101
Current-Limiting

Dwg. 110150



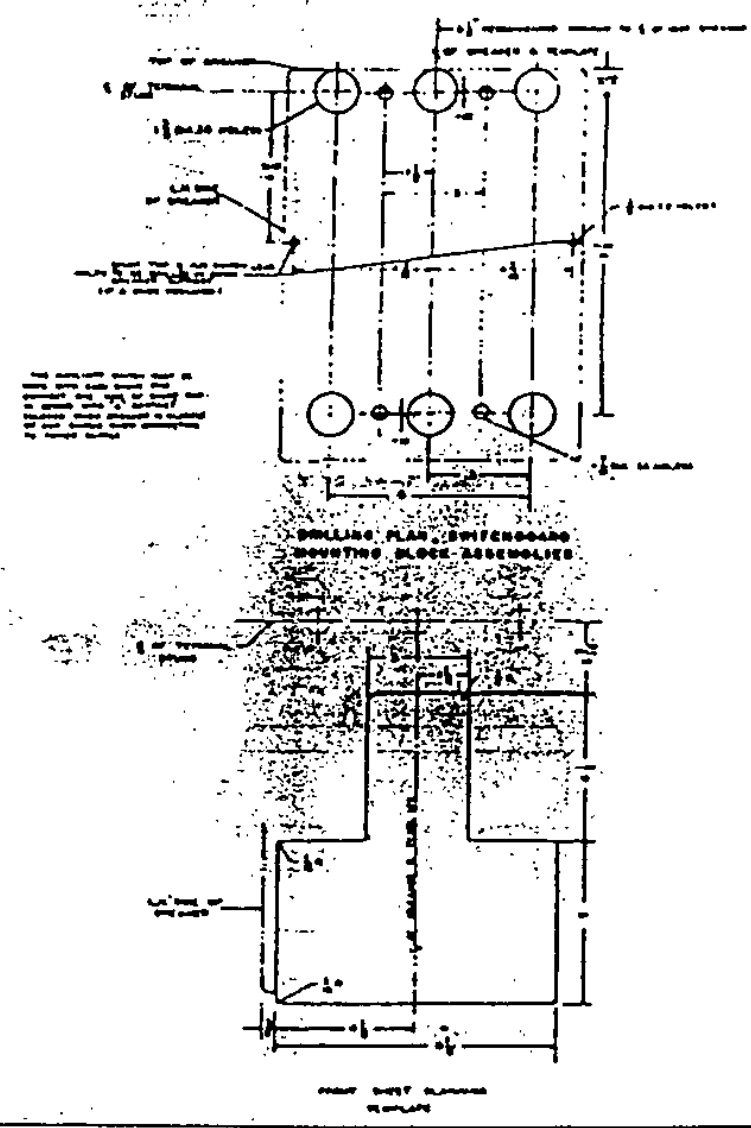
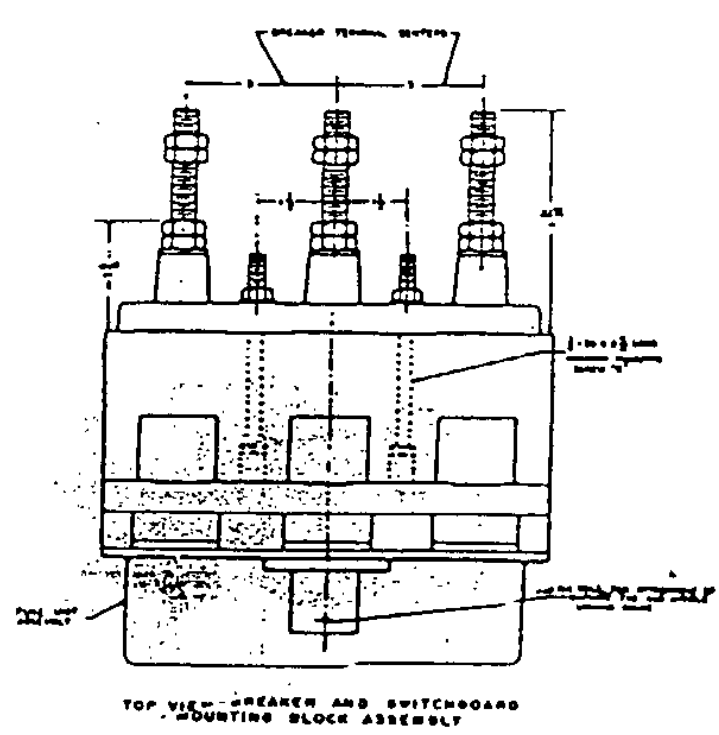
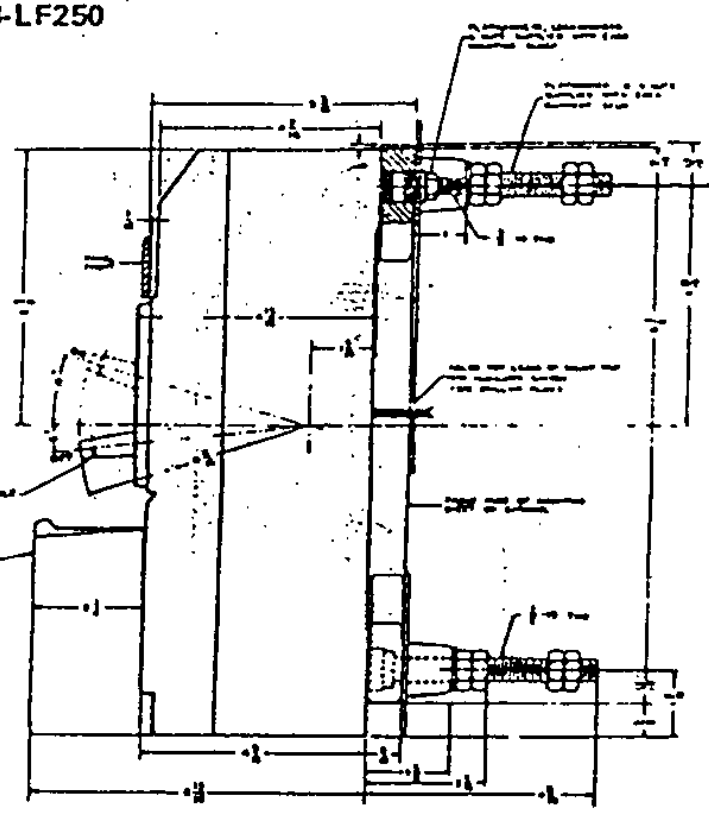
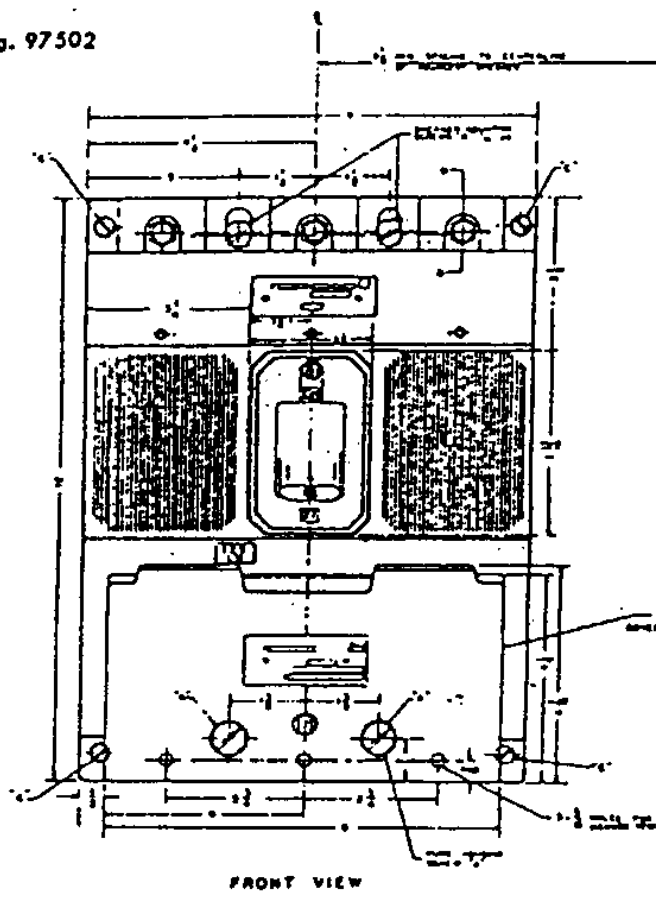
MOUNTING OF ONE BREAKER
FRONT CONNECTED



Note: For mounting block dimensions, see Section 17.1.2, Page 4.

Dwg. 97502

DIMENSIONS
AOB-LF250



DIMENSIONS

Dwg. 110333

