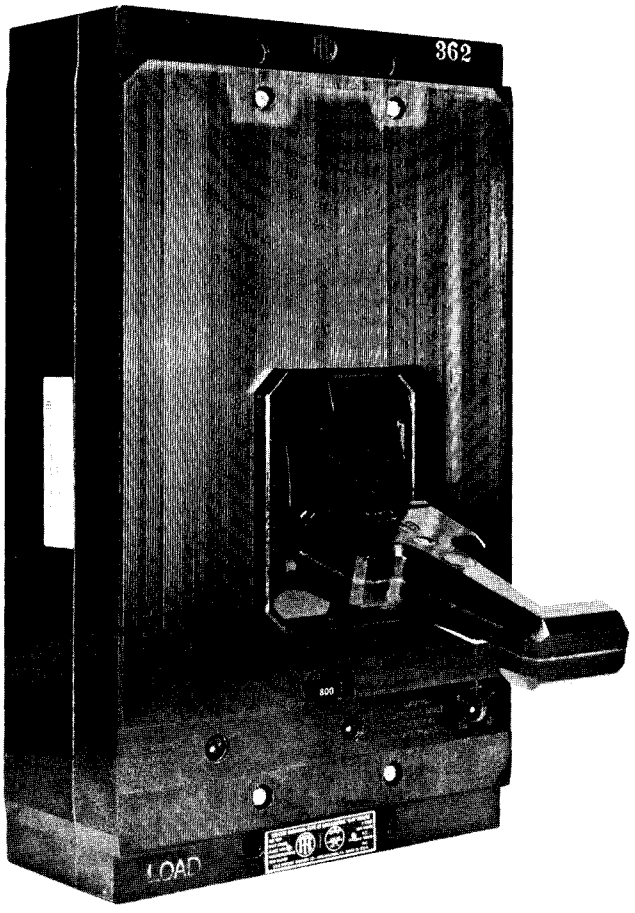
IB-2.2.7-7
ISSUE A

MOLDED-CASE CIRCUIT BREAKERS

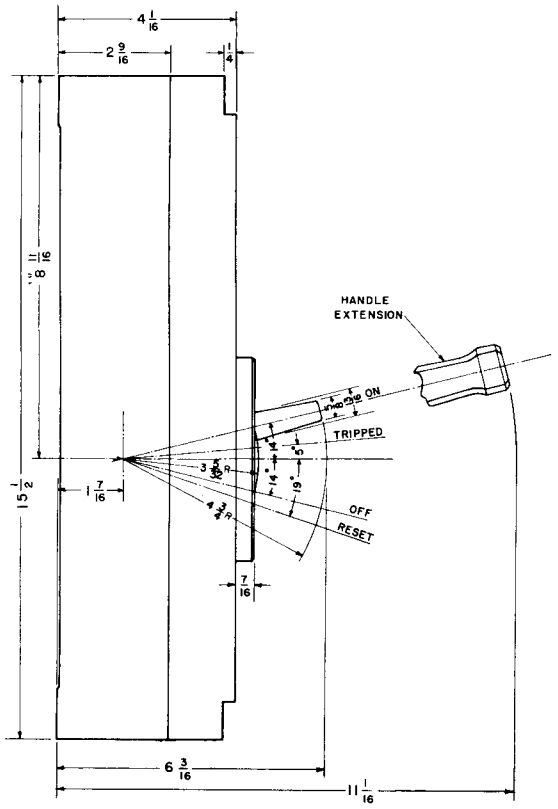
INSTRUCTIONS

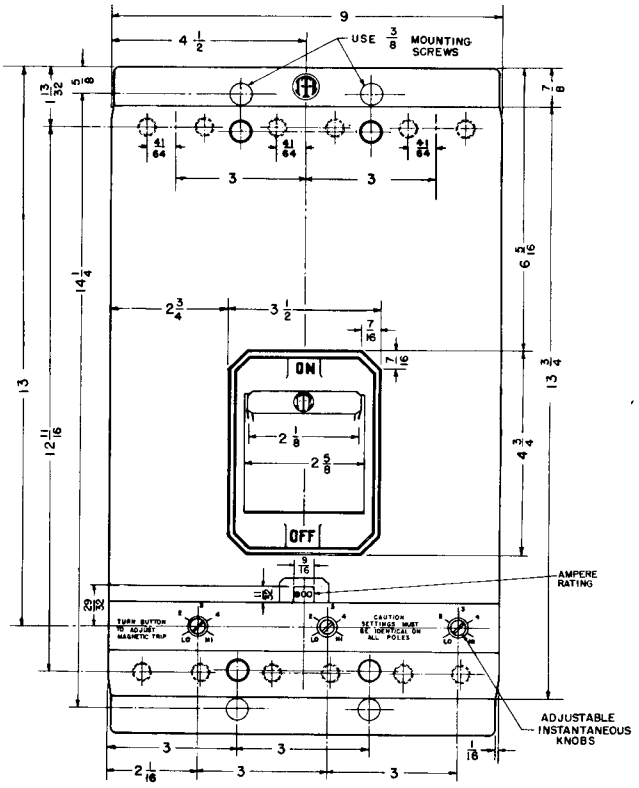
800-AMPERE
ET® KM-FRAME CIRCUIT BREAKERS
2 & 3 POLE, 250-800 AMPERES

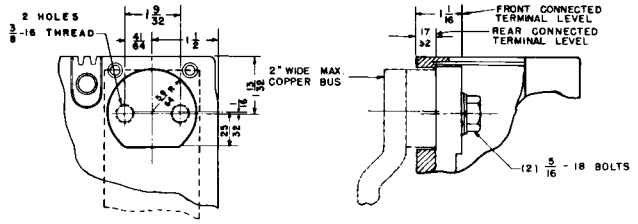


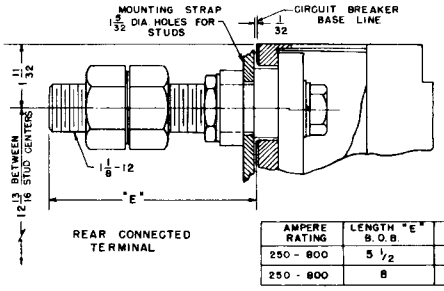
ITE Imperial Corporation

TWO POLE BREAKER SAME AS THREE POLE EXCEPT CENTER POLE OMITTED.



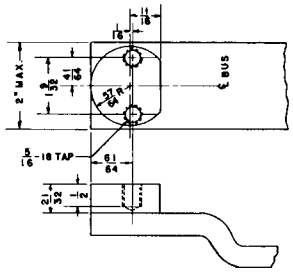


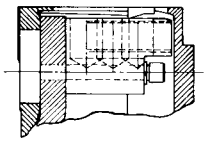




AMPERE RATING	LENGTH "E" B.O.B.	I-T-E CAT. NO.
250 - 800	5 1/2	RS - 9603
250 - 800	8	RS - 9604

TYPICAL COPPER BUS FOR PANELBOARD CONNECTION





FRONT CONNECTED TERMINAL

AMPERE RATING	CABLE RANGE	CAT. NO.
250 - 350	2 - #1 TO 2 - 500 MCM	TA2-K500
400 - 800	COPPER CABLE - 3 - 300 TO 350 MCM	TA3-K350
400 - 700	ALUMINUM CABLE 3-300 TO 350 MCM	TA3-K350
800	ALUMINUM CABLE 3 - 400 MCM	TA3-K400

800-Ampere KM-Frame Circuit Breaker Dimensional Drawings

INSTRUCTIONS FOR 800-AMPERE KM-FRAME CIRCUIT BREAKERS 2 & 3 POLE, 250-800 AMPERES

GENERAL

KM-frame circuit breakers, as shown on page 2, are for use in individual enclosures, in switchboards, and in power and distribution panelboards.

Complete KM-frame circuit breakers, as listed, can be furnished with pressure wire connectors suitable for use with aluminum or copper cables for front connection or with rear connecting studs for switchboard applications. The circuit breakers can also be furnished with plug-in connector assemblies for both 2 and 3 pole types. The plug-in arrangement permits removal of the circuit breaker from its leads without physically coming in contact with the line or load terminals.

NOTE: 2 and 3 pole breakers are the same physical size; in the 2 pole breakers the current carrying parts are omitted from the center pole.

KM-frame circuit breakers provide complete overload and short circuit protection by use of a time delay thermal trip element and an instantaneous magnetic trip device. Nominal instantaneous trip values are externally adjustable with five (5) trip points as shown below:

Breaker Ampere Rating	Nominal Instantaneous Values				
	LO	2	3	4	HI
250-300	1050	1350	1650	1950	2250
350-600	1900	2300	2700	3100	3500
700-800	3200	3600	4100	5100	5600
600 ETI	1900	2300	2700	3100	3500
800 ETI	3200	3600	4100	5100	5600
800 ETI	5000	6100	6700	7400	8000

The overcenter toggle mechanism is trip free of the operating handle. The circuit breaker, therefore, cannot be held closed by means of the handle should a tripping condition exist. The handle will assume an intermediate position between "ON" and "OFF" after automatic operation, thus giving a clear indication of tripping.

The circuit breakers operate on a common trip principle so that an overcurrent or short circuit on any pole will simultaneously open all poles.

Trip units are carefully calibrated and adjusted at the factory in a temperature controlled room. Trip unit covers are sealed in place and any alteration of the calibration of the unit should not be attempted. Removing the trip unit cover will void the Underwriters' Laboratories, Inc. listing for that particular unit. All trip units of the same number of poles in this frame size are interchangeable regardless of capacity.

ETI circuit breakers (adjustable instantaneous magnetic trip only) can be furnished and are designed for use in welding circuits, motor circuits and combination starters where short circuit protection only is required. When used in combination starters, they serve in conjunction with motor protective relays to offer complete protection. The relays guard against motor overloads; the circuit breaker provides short circuit protection.

Special features such as shunt trip, auxiliary and alarm switches and undervoltage trip devices are available and are mounted internally. Information concerning these special devices is available upon request.

INTERRUPTING RATINGS

The interrupting ratings of the KM-frame circuit breakers are based on circuits adjusted to the rated short circuit current (at specified voltage) before the insertion of the circuit breaker.

Based on UL and NEMA Test Procedures		
Volts	Amperes	
	Asymmetrical	Symmetrical
240 ac	50,000	42,000
480 ac	35,000	30,000
600 ac	25,000	22,000
250 dc	20,000	

CIRCUIT BREAKER OPERATION

With the mechanism latched and the contacts open, the operating handle will be in the "OFF" position. Moving the handle to the "ON" position closes the contacts and establishes a circuit through the breaker. Under overload or short circuit conditions sufficient to trip or open the breaker automatically, the operating handle moves to a position between "ON" and "OFF" as previously described. To relatch the circuit breaker after automatic operation, move the operating handle to the extreme "OFF" position. The circuit breaker is now ready for reclosing.

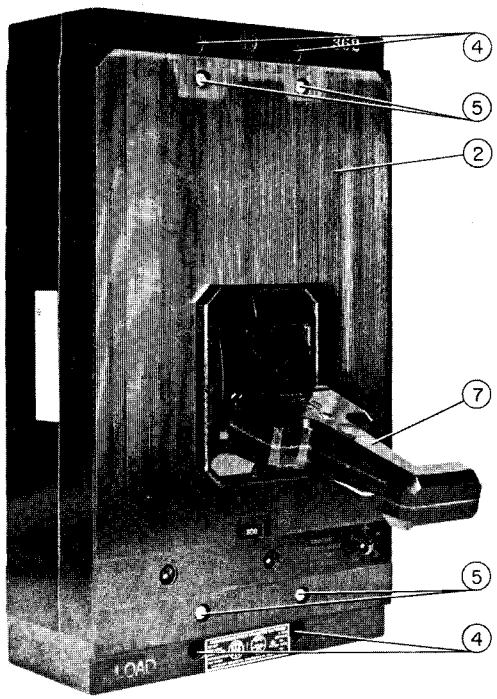


Fig. 1 — Front View of Circuit Breaker

FIG. 1 - PHOTO E39965-A

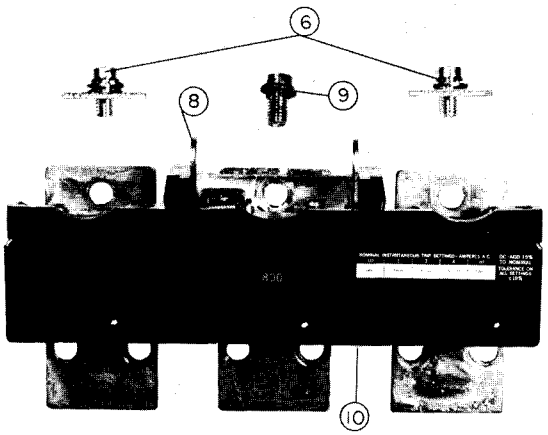


Fig. 2 — 3 Pole Trip Unit

FIG. 2 - PHOTO E39966-A

1. OPERATING HANDLE
2. CIRCUIT BREAKER COVER
3. MOUNTING ARRANGEMENT:
   EITHER NUTS OR BOLTS FOR PRESSURE WIRE CONNECTORS,
   REAR CONNECTION STUDS OR TULIP CLIP ASSEMBLIES
4. BREAKER MOUNTING SCREWS OR HOLES
5. COVER SCREWS
6. SCREWS WITH LOCKWASHERS AND HEATER PLATES (OUTSIDE POLES)
7. OPERATING HANDLE EXTENSION
8. TRIP UNIT LATCH BRACKET
9. TRIP UNIT ANCHOR SCREW (CENTER POLE)
10. METAL TRIP BUTTON
11. MECHANISM LATCH PIN

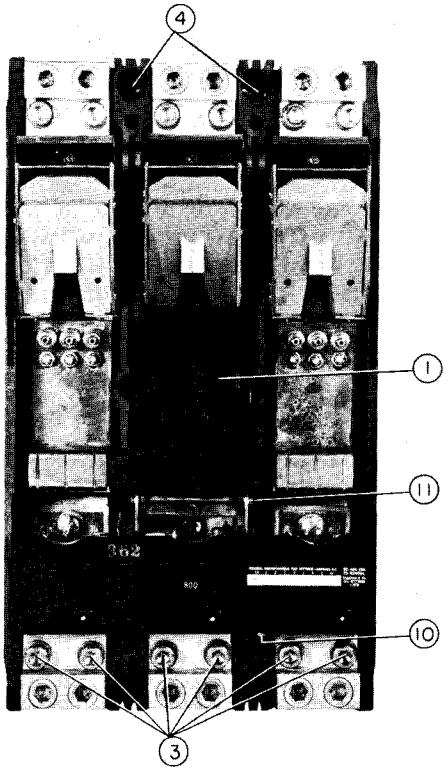


Fig. 3 — Front View of Circuit Breaker Cover Removed

FIG. 3 - PHOTO E39967-A

WARNING FOR CIRCUIT BREAKER REMOVAL

THE CIRCUIT BREAKER SHOULD BE IN THE "OFF" POSITION AND, IF PRACTICABLE, THE SWITCHBOARD DE-ENERGIZED BEFORE INSPECTING, CHANGING, INSTALLING OR REMOVING THE CIRCUIT BREAKER OR TRIP UNITS. IF THE BUS CANNOT BE DE-ENERGIZED, USE INSULATED HANDLE TOOLS, RUBBER GLOVES AND A RUBBER FLOORMAT.

TO REMOVE A REAR-CONNECTED CIRCUIT BREAKER FROM ITS MOUNTING

See WARNING FOR CIRCUIT BREAKER REMOVAL.

1. Remove extension handle (7, Fig. 1).
2. Remove four cover screws (5, Fig. 1) and circuit breaker cover (2, Fig. 1).
3. Remove rear connection stud terminal bolts (3, Fig. 3) and pull circuit breaker forward or away from rear connection studs.

TO REMOVE A FRONT-CONNECTED CIRCUIT BREAKER FROM ITS MOUNTING

See WARNING FOR CIRCUIT BREAKER REMOVAL.

1. Remove extension handle (7, Fig. 1).
2. Remove four cover screws (5, Fig. 1) and circuit breaker cover (2, Fig. 1).
3. Remove pressure wire connector mounting bolts (3, Fig. 3) and bend cables with connectors clear of circuit breaker.
4. Release circuit breaker mounting screws (4, Figs. 1 and 3); breaker is now free of its mounting.

TO REMOVE A CIRCUIT BREAKER EQUIPPED WITH PLUG-IN CONNECTOR ASSEMBLIES FROM ITS MOUNTING

See WARNING FOR CIRCUIT BREAKER REMOVAL.

1. Loosen four breaker mounting screws (4, Figs. 1 and 3) and pull circuit breaker forward or away from mounting surface.

ADDING A TRIP UNIT TO A BREAKER FRAME

See WARNING FOR CIRCUIT BREAKER REMOVAL.

1. Remove four cover screws (5, Fig. 1) and breaker cover (2, Fig. 1).
2. On outside poles, remove screws with lockwashers and heater plates (6, Fig. 2), which hold mechanism braid terminals to base.
3. Hold breaker operating handle (1, Fig. 3) away from trip unit area. Lower trip unit carefully into base. Make sure that slots in trip unit latch bracket (8, Fig. 2) engage latch pin on mechanism (11, Fig. 3).
4. Tighten trip unit anchor screw (9, Fig. 2) (center pole) securely to base.
5. Replace screws, lockwashers and heater plates (6, Fig. 2) on outside poles, previously removed in Step 2, and tighten securely.
6. Replace cover, cover screws (2 and 5, Fig. 1) and add operating handle extension (7, Fig. 1).
7. Move operating handle to extreme "OFF" (reset) position. Circuit breaker is now ready for use.

TRIP UNIT REPLACEMENT

See WARNING FOR CIRCUIT BREAKER REMOVAL.

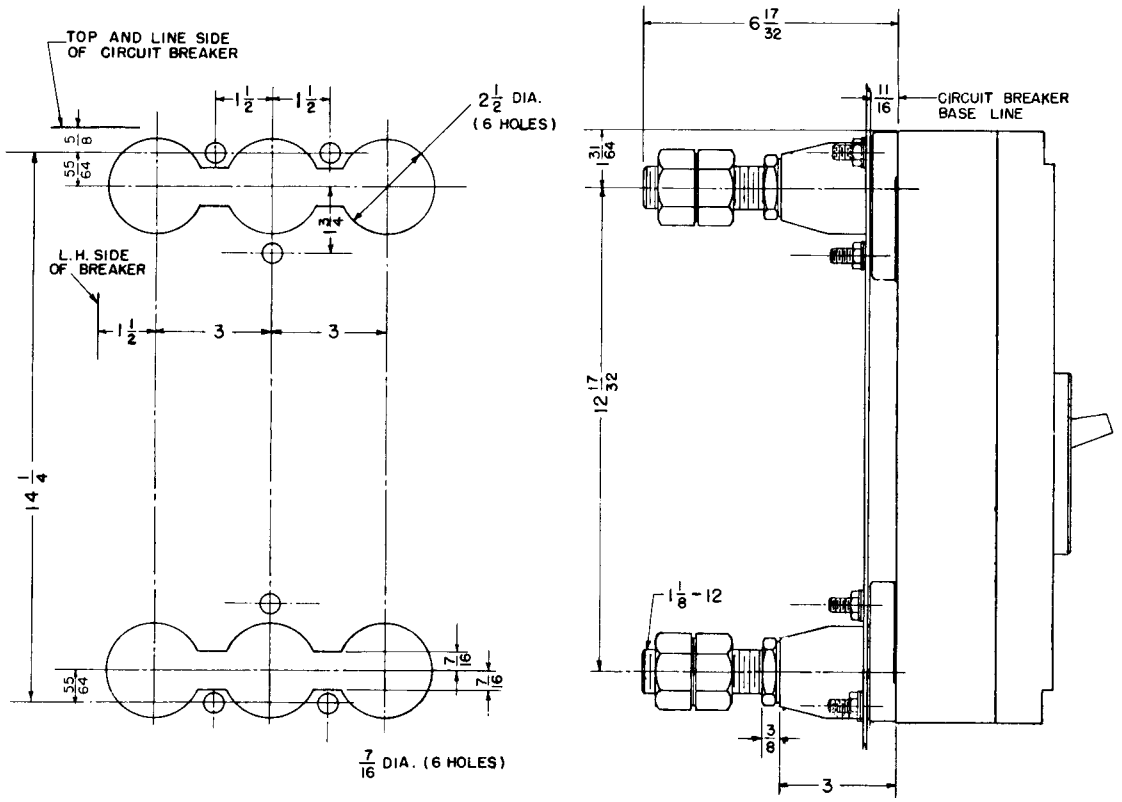
1. Remove operating handle extension (7, Fig. 1), cover screws (5, Fig. 1) and circuit breaker cover (2, Fig. 1).
2. Remove load end rear connection stud terminal bolts (3, Fig. 3) if circuit breaker is rear connected, pressure wire connector mounting bolts (3, Fig. 3) if circuit breaker is front connected, or tulip assembly mounting nuts, washers and lockwashers (3, Fig. 3) if circuit breaker is plug-in mounted.
3. Press metal button (10, Fig. 2) on right hand underside of trip unit cover. This will trip the breaker mechanism and the circuit breaker handle will move to the "TRIPPED" position.
4. Remove screws, lockwashers and heater plates (6, Fig. 2) on outside poles.
5. Remove trip unit anchor screw and lockwasher (9, Fig. 2) on mechanism pole.
6. Hold circuit breaker operating handle away from trip unit area. Lift trip unit out of circuit breaker base while holding the "TRIP" button (10, Fig. 2) depressed.
7. Add new trip unit as outlined under Steps 3 to 7 of "TRIP UNIT ADDITION".

INSPECTION AND MAINTENANCE

See WARNING FOR CIRCUIT BREAKER REMOVAL.

Should the circuit breaker appear to be overheating, inspect for any loose or otherwise defective terminal connections.

When a circuit breaker is not operated for long periods of time, a high resistance film may form on the contact surfaces which will also result in overheating. This high resistance film may be minimized, and in most cases removed, by opening and closing the circuit breaker several times under load.



DRILLING PLAN FOR PLUG-IN CONNECTOR ASSEMBLIES

Plug-In Connector Assemblies & Drilling Plan Dimensional Drawings

DWG. S-15382 SHT. 2 - REV. 2

NOTES

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