



Installation Instructions

	⚠ DANGER
	Hazardous voltage. Will cause death or serious injury. Turn off and lock out all power supplying this device before removing cover or device and while cover is removed. Replace the cover before power supplying this device is turned on.



SAFETY INSTRUCTIONS

NOTE: This instruction outlines the recommended installation procedure.

INTRODUCTION

The FM Frame Circuit Breaker line includes types FM6 and FMK, available with Instantaneous Magnetic Trip Units and Thermal Magnetic Trip Units. The FMKT trip units are interchangeable and can be used with circuit breaker types FM6 and FMK, according to its application. Every trip unit has three dials, one for each pole, to adjust the magnetic pickup settings. The bimetal elements in the Thermal Magnetic Trip Units have been calibrated according to the rated continuous current and rated ambient temperature. Special calibrations and trip settings have been made to accommodate the MSHA Trailing Cable requirements.

The FM6 Instantaneous Magnetic Trip Circuit Breakers are rated for operating voltages up to 600VAC, 50/60Hz, 500VDC and continuous current from 150 to 250 amps.

The FM6 Thermal Magnetic Trip Circuit Breakers are rated for operating voltages up to 600VAC, 50/60Hz, 500VDC and continuous current from 70 to 250 amps.

The FMK Instantaneous Magnetic Trip Circuit Breakers are rated for operating voltages up to 1000VAC, 50/60Hz, 500VDC and continuous current from 150 to 250 amps.

The FMK Thermal Magnetic Trip Circuit Breakers are rated for operating voltages up to 1000VAC, 50/60Hz, 500VDC and continuous current from 70 to 250 amps.

INSTALLATION

FM frame circuit breakers are for use in individual enclosures, panel boards, switchboards or other approved equipment.

The installation procedure consists of inspecting, attaching required accessories, mounting the device and connecting and torquing the line and load wire connectors.

Mounting hardware and unmounted wire connectors (where required) are available as separate catalog items.

Note: Trip unit, accessory and phase barrier installations should be completed before the circuit breaker is mounted and connected. See the installation instructions supplied with the trip unit and accessory before proceeding. Line and load end phase barriers are **required** to be installed when the FMK Circuit Breakers are operated at 1000VAC. The phase barriers are **recommended** to be installed when the FM6 and FMK Circuit Breakers are operated at 600VAC. The phase barriers, two-part epoxy and installation instructions, for mounting the barriers, are provided in a kit with the FMK Circuit Breakers and Frames. The phase barrier kit (Cat. No. FTS) is provided as a catalog item, to be ordered separately, if it is desired to use the phase barriers with the FM6 Circuit Breakers and Frames.

Note: Do not spray or allow any petroleum based chemicals, solvents or paints to contact the molded parts or nameplates.

- A. Turn off and lock out all power before installing or servicing.
- B. WARNING! Make sure that the circuit breaker / trip unit is suitable for the installation by comparing nameplate ratings with system requirements. Inspect the device for completeness and check for any damage before mounting.
- C. The circuit breaker must be in the "Tripped" or "OFF" position prior to mounting.
- D. To mount the circuit breaker perform the following steps:
 1. For those applications where mounting is on a flat surface of the customers equipment, drill and tap mounting bolt holes according to the drilling plan in Fig. 2.
 2. If the circuit breaker contains internal accessories, make sure terminals can be connected when the circuit breaker is mounted.
 3. Position the circuit breaker on mounting surface.
 4. Install mounting screws and washers. Tighten hardware securely.
 5. After mounting the circuit breaker, line and load terminals and accessory terminals should be connected. Install wire connectors with correct torque requirements. Torque values for line and load connectors are



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provided on the circuit breaker nameplate and in Table 1, Page 2 of 3. Ensure that wire and wire connectors are fully engaged on terminals and that connectors are flush with end of terminal.

6. After the device is installed, check all mounting hardware for secureness.
- E. Interchangeable Trip Units are provided with a trip setting label (1-1/4 x 4-7/16 inch) for the load end front cover, a trip rating label (1/4 x 1-1/16 inch) applied to the raised area on the trip unit and a trip catalog label (15/16 x 3-13/16 inch) applied to the front of the trip unit. When changing or replacing a trip unit, it is important that the trip setting label be removed from the load cover and the new trip setting label be applied, to correspond with the new trip unit. The trip setting label identifies trip ratings and trip unit type (Instantaneous Magnetic Trip or Thermal Magnetic Trip) and must be applied with the corresponding trip unit to help ensure proper breaker operation. See trip unit installation instructions.

TABLE 1.

Catalog Number	Wire Range	Torque	
		lb-in.	N-m
TA1FD350A	#4-#1 kcmil Al	120	13.6
	1/0-350 kcmil Al	275	31.1
TC1FD350	#6-#1 kcmil Cu	120	13.6
	1/0-350 kcmil Cu	275	31.1
Connector Mounting Screws		275	31.1
CCF250	See Crimp Connector Instruction		

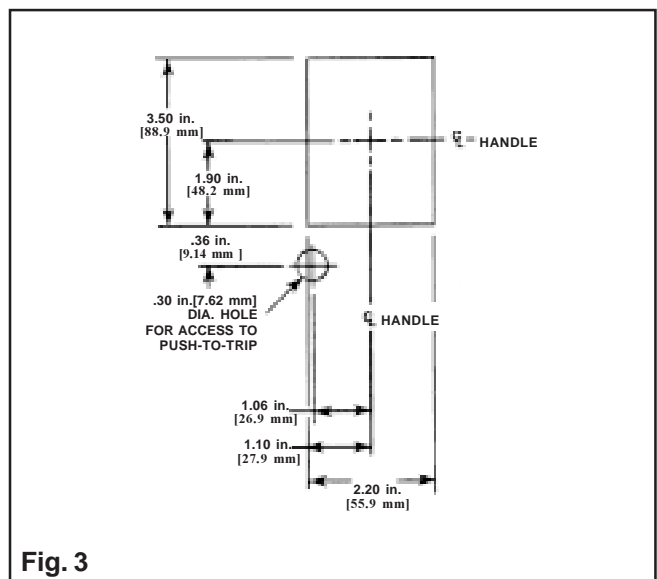
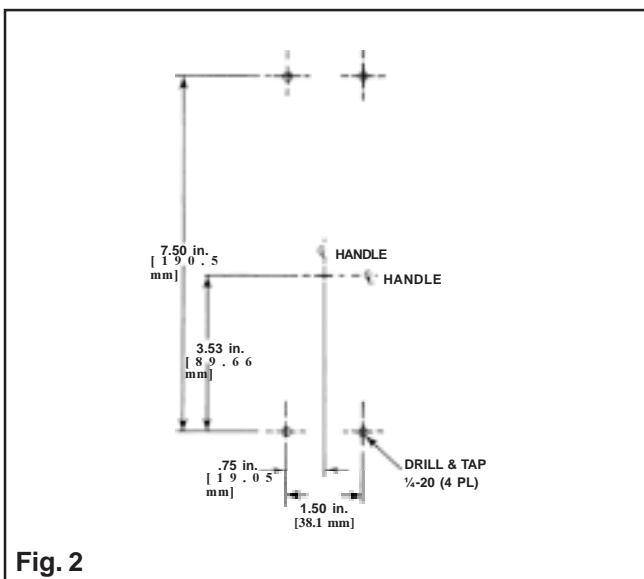


Fig. 2

Fig. 3



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MANUAL OPERATION

Manual operation of the device is controlled by the circuit breaker handle and the PUSH-TO-TRIP button. The circuit breaker handle has three indicating positions, two of which are molded into the handle to indicate ON and OFF. The third position indicates a TRIP position and is between the ON and OFF positions. (See Fig. 4)

A. Circuit Breaker Reset

After tripping, the circuit breaker is reset by moving the handle to the reset position and then moving the handle to the ON position.

NOTE: In the event of a thermal trip, the circuit breaker cannot be reset until the thermal element cools.

B. PUSH-TO-TRIP Button

The PUSH-TO-TRIP button checks the tripping function and is used to manually exercise the operating mechanism.

INSPECTION AND FIELD TESTING

FM Frame Circuit Breakers are designed to provide maintenance free service. Any inspection and field testing should be conducted in accordance with NEMA AB2 : Procedures for Field Inspection and Performance Verification of Molded Case Circuit Breakers ; also NEMA AB4 : Guidelines for Inspection and Preventive Maintenance of Molded Case Circuit Breakers.

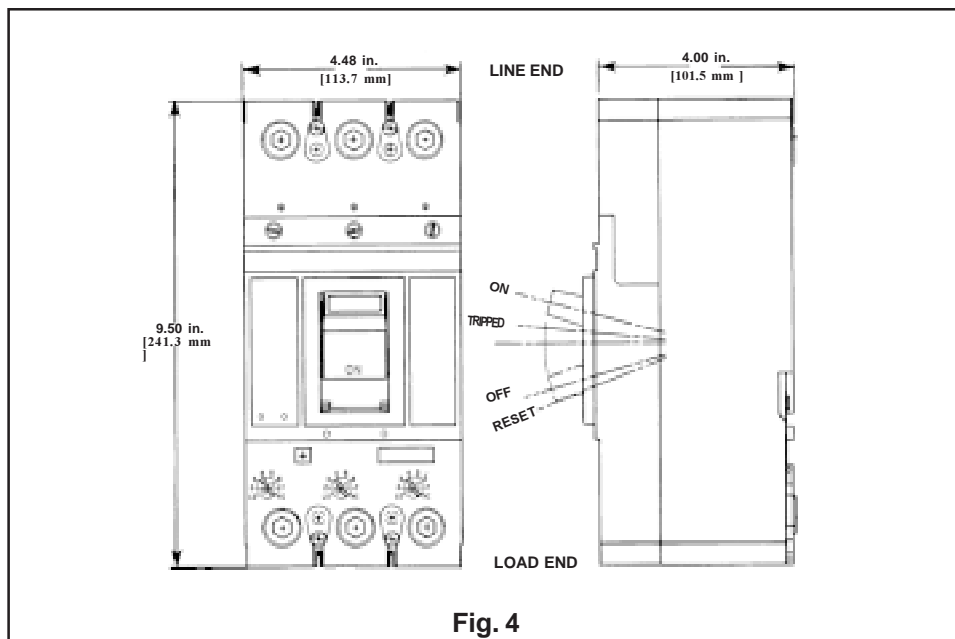


Fig. 4

Manufactured Under One or More of the Following U.S. Patents: 4,260,861; 4,266,209; 4,300,030; 4,458,224.