

Installation Instructions

	⚠ DANGER
	Hazardous voltage. Will cause death or severe injury.
	Turn off and lock out all power supplying this device before removing cover(s) or device and while cover(s) are removed. Replace all covers and shields before power supplying this device is turned on.

	SAFETY INSTRUCTIONS
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NOTE: This instruction outlines the recommended installation procedure.

INTRODUCTION

The JD and LD Frame circuit breaker line includes types SJD6(-A), SHJD6(-A), SCJD6(-A), SLD6(-A), SHLD6(-A) and SCLD6(-A) circuit breaker types. These circuit breakers are rated for operating voltages up to 600 VAC, 50/60 Hz.

INSTALLATION

JD and LD Frame circuit breakers are for use in individual enclosures, panelboards, switchboards or other approved equipment.

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

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

- A. Turn off and lock out all power before installing or servicing this circuit breaker.
- B. Make sure that the device is suitable for the installation by comparing nameplate ratings with system requirements. Inspect the circuit breaker for completeness and check for any damage before mounting.
- C. Device must be in "TRIPPED" or "OFF" position prior to mounting. See Fig. 4.

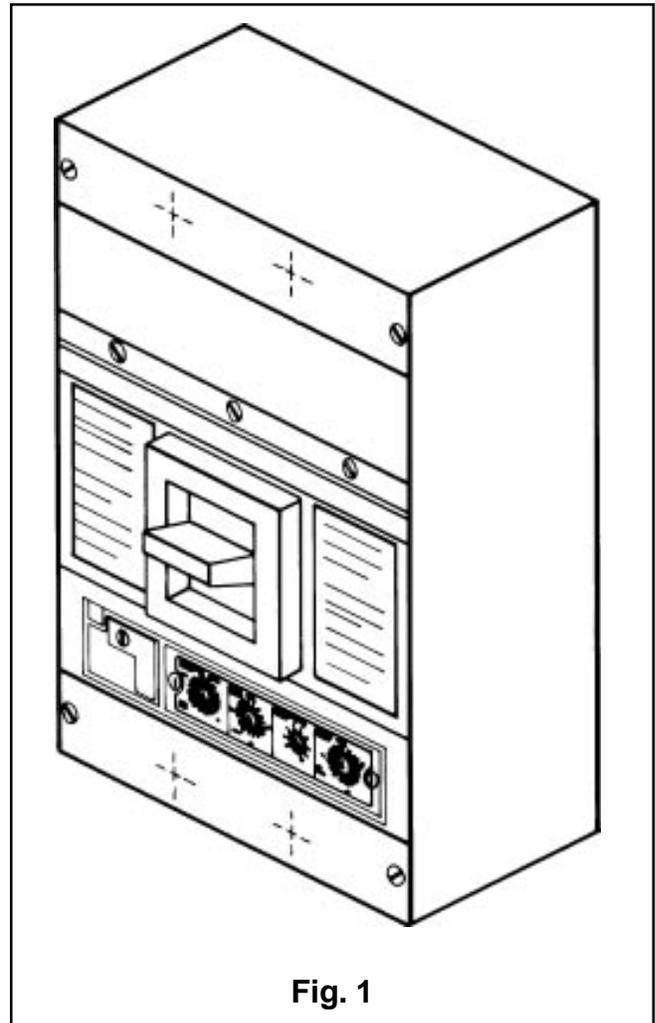
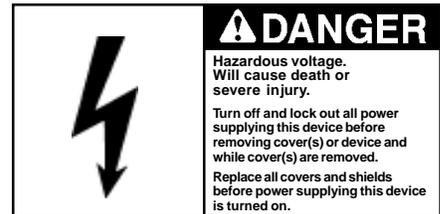


Fig. 1

- D. To mount the device perform the following steps:
 1. For individual enclosures, panelboards and switchboards manufactured by Siemens Energy & Automation, Inc., follow the instructions provided with this equipment.
 2. For those applications where mounting is on a flat surface of the customers equipment, drill and top mounting bolt holes according to the drilling plan in Fig. 2. For escutcheon cut out plans refer to Fig. 3.
 3. If device contains internal accessories, make sure terminals can be connected when the circuit breaker is mounted.

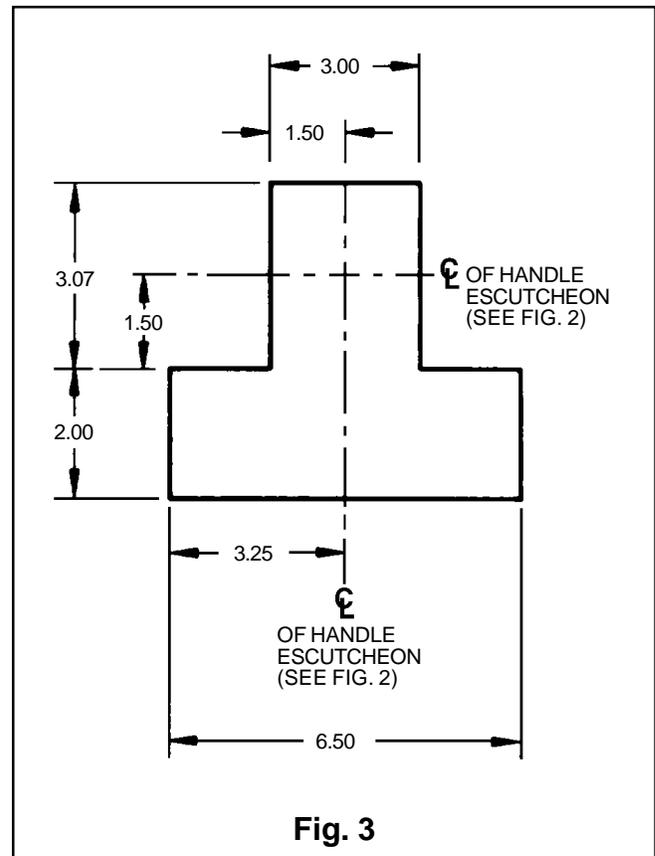
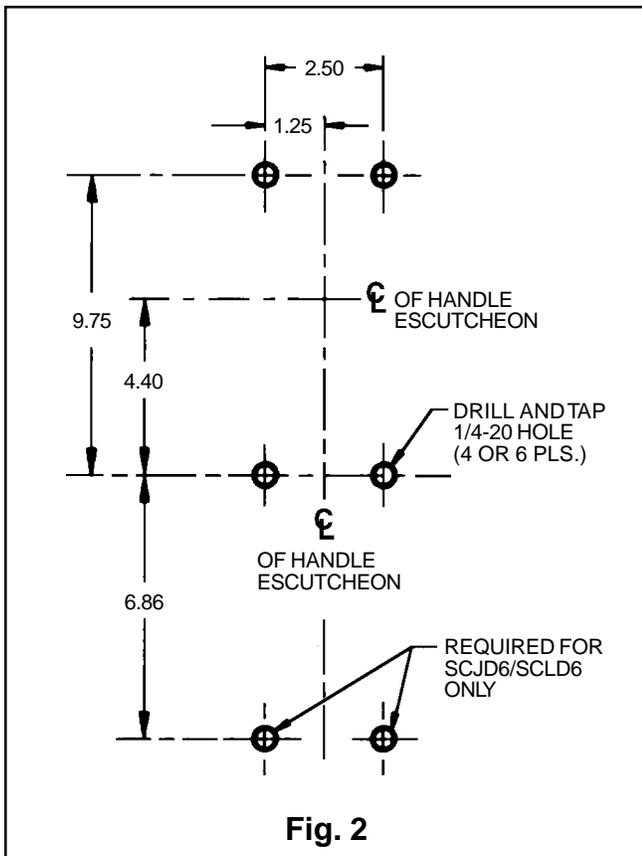


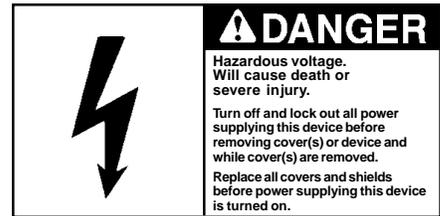
Installation Instructions

4. Remove the line and load terminal shields (see Fig. 4) by loosening the shield screws that attach them to the circuit breaker.
5. Position the circuit breaker on the mounting surfaces, install the mounting hardware and tighten securely.
6. After mounting the circuit breaker, the line and load terminal accessory terminals should be connected.
7. After the circuit breaker is installed, check all mounting hardware for secureness. Check wire connectors for correct torque requirements. Torque values for line and load connectors are provided on the circuit breaker nameplate.

MANUAL OPERATION

Manual operation of the circuit breaker 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)





Installation Instructions

- A. **Circuit Breaker Reset**
 After tripping, the circuit breaker is reset by moving the circuit breaker handle to the reset position and then moving the handle to the ON position.
- B. **The PUSH-TO-TRIP Button**
 The PUSH-TO-TRIP button checks the tripping function and is used to manually exercise the operating mechanism.

the Continuous Current setting of the circuit breaker and sets the Long Time Delay. This setting (I_r) is a percentage of the Maximum Continuous Current rating (I_n). Two long time delay settings are available. These are delay times of 3 seconds or 25 seconds at 6 times the Continuous Current Setting (I_r). These are selected by using the appropriate area of the setting. See Figure 5.

ELECTRONIC OPERATION

The setting dials on the face of the electronic trip unit are rotary switches that must be properly set to mechanical detent (click stop) positions. An improper switch setting will cause the trip unit to default (as a fail safe condition) to the lowest permissive setting and, consequently, may result in unintentional or nuisance tripping.

Continuous Current (I_r) and Long Time Delay
 All models have a Continuous Current and Long Time Delay adjustment. This single knob adjusts

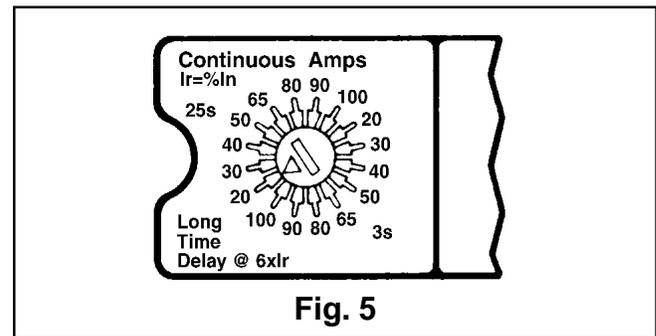


Fig. 5

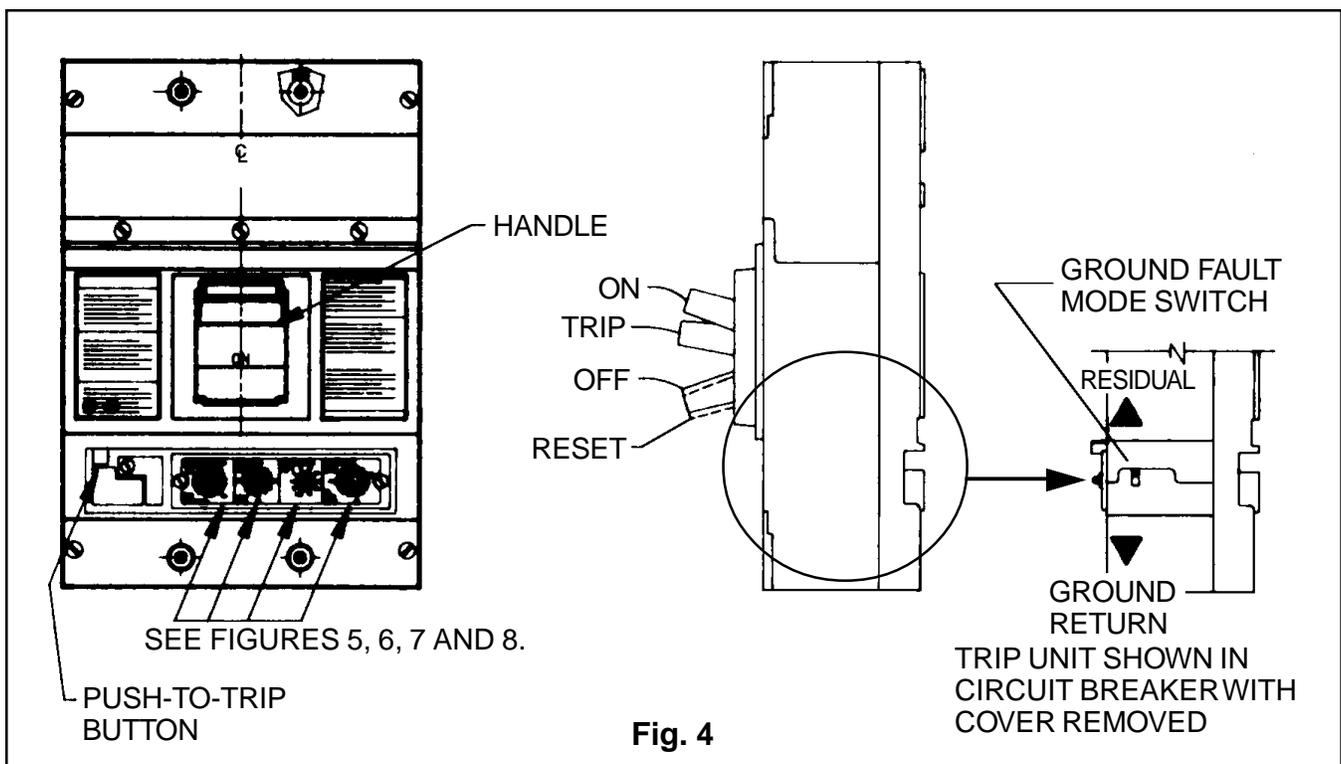
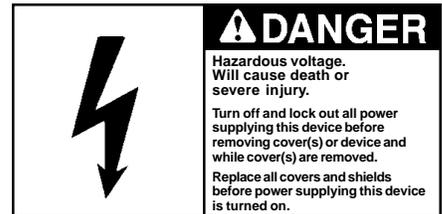


Fig. 4



Installation Instructions

Instantaneous Pickup

All models have an Instantaneous Pickup adjustment. This adjustment sets the Instantaneous Pickup of the circuit breaker. The settings are multiples of the Continuous Current Setting (I_r). These devices have a fixed instantaneous override of approximately 10.5 times the Maximum Continuous Current rating (I_n) of the circuit breaker. When set to "MAX" the Instantaneous Pickup defaults to the instantaneous override value. See Figure 6.

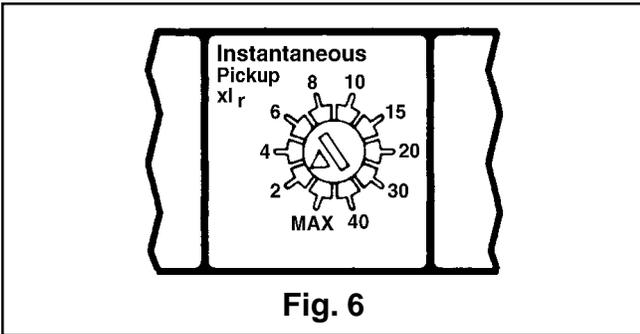


Fig. 6

Short Time Pickup/Short Time Delay (Optional)

Circuit breakers with the letters "NT" in the catalog number have an adjustment to set both the Short Time Pickup and the Short Time Delay. This single knob sets both pickup and delay at the same time. Four delays are available. These are fixed delays of 0.05, 0.1, or 0.2 seconds or an I^2t delay slope at 0.2 seconds at 6 times the Continuous Current Setting (I_r). The delay is selected by using the appropriate area of the setting knob. The pickup settings are multiples of the Continuous Current Setting (I_r) of the circuit breaker. See Figure 7.

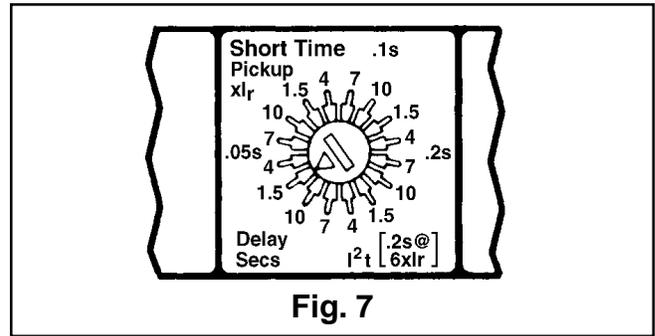


Fig. 7

Ground Fault Pickup (I_g) (Optional)

Circuit breakers with the letter "G" included in the catalog number have integral equipment ground fault protection. These circuit breakers have an adjustment to set the Ground Fault Pickup current (I_g) as a percentage of the Maximum Continuous Current rating (I_n). The pickup has a built in time delay. Three time delays are available of 0.1, 0.2, or 0.4 seconds. These are selected by using the appropriate area of the setting. Below 50% Maximum Continuous Current rating (I_n) the pickup delay has an I^2t slope. See Figure 8.

The ground fault option has two modes of operation. The mode is set by a switch on the side of the trip unit with the settings identified as RESIDUAL and GROUND RETURN. See Figure 4 for switch location. These function as follows:

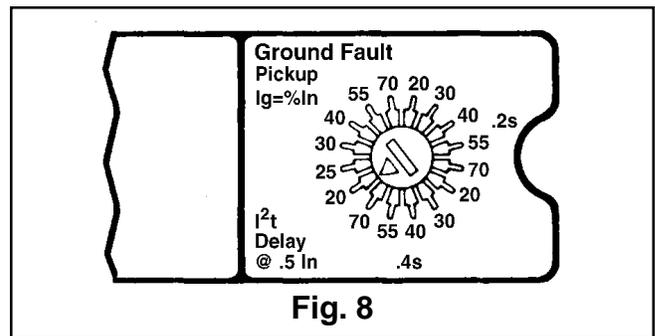


Fig. 8



Installation Instructions

RESIDUAL SETTING (OUTGOING CIRCUIT METHOD)– This is the standard position to which the breaker is set when shipped from the factory. With the switch in this position the circuit breaker may be used on 3 phase 3 wire or, with the addition of an external neutral sensing transformer, on 3 phase 4 wire systems. See Neutral Sensing Transformer section for more information.

GROUND RETURN SETTING (GROUND RETURN METHOD) – This setting may only be used for service disconnects or separately derived systems. With the switch in this position, the circuit breaker may be used on 3 phase 3 wire and 3 phase 4 wire systems. An external sensing transformer, which is installed on the main bonding jumper, is required for this method. See Neutral Sensing Transformer section for more information.

Neutral Sensing Transformer

An external transformer is required for circuit breakers equipped with ground fault protection when operating in the RESIDUAL mode on 3 phase 4 wire systems and when operating in the GROUND RETURN mode on any system. The sensors listed below must be used for these applications. The sensor catalog number must be matched to the circuit breaker Maximum Continuous Current rating (In) as shown in the table. Please note that sensors used with other breaker types cannot be used with the SJD/SLD circuit breakers. Installation instructions are included with the sensors.

<u>Transformer Catalog No.</u>	<u>Circuit Breaker Rating</u>	<u>Transformer Color</u>
N02SJD	200 Amps	GREEN
N03SJD	300 Amps	GREEN
N04SJD	400 Amps	GREEN
N05SLD	500 Amps	GREEN
N06SLD	600 Amps	GREEN

Electronic Testing

Sensitrip III solid state molded case circuit breakers may be tested for electronic functionality by the use of a TS-31 test set available from local Siemens sales offices.

NOTE: Time current characteristic curves and information on factory installed accessories can be obtained from local Siemens sales offices.

Maintenance

JD and LD frame circuit breakers are designed to provide years of maintenance free service. Experience has shown that properly applied molded case circuit breakers normally do not require maintenance. However, some industrial users may choose to establish an inspection and maintenance procedure to be carried out on a regular basis. For detailed information, consult applicable NEMA publication or your local Siemens sales office.

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