Eaton FD3050

Eaton Cutler-Hammer FD3050 Circuit Breaker User Manual

Model: FD3050 | **Brand:** Eaton Cutler-Hammer

1. Introduction

This manual provides essential information for the safe and effective installation, operation, and maintenance of the Eaton Cutler-Hammer FD3050 Circuit Breaker. The FD3050 is a 3-pole, 50 Amp, 600V circuit breaker designed for industrial and commercial applications, featuring an FD frame and 35kA interrupting capacity. Please read this manual thoroughly before proceeding with any installation or operation.

2. Safety Information

WARNING: Risk of Electric Shock or Arc Flash Hazard.

- Installation and servicing must be performed by qualified electrical personnel only.
- Always de-energize the equipment before installing, removing, or servicing the circuit breaker.
- Use appropriate personal protective equipment (PPE) as required by local safety regulations.
- Verify all connections are secure and torqued to specifications to prevent overheating and potential fire hazards.
- Do not operate the circuit breaker if it appears damaged.
- Adhere to all national and local electrical codes.

3. Setup and Installation

The Eaton Cutler-Hammer FD3050 is a bolt-on mount circuit breaker. Proper installation is critical for safe and reliable operation.

3.1 Pre-Installation Checks

- Ensure the circuit breaker rating (50A, 3-pole, 600V) matches the system requirements.
- Inspect the circuit breaker for any signs of damage during shipping.

- Confirm the mounting location is clean, dry, and free from obstructions.

3.2 Mounting Procedure

1. De-energize the electrical panel or equipment where the breaker will be installed. Verify zero voltage with a suitable meter.
2. Position the FD3050 circuit breaker onto the designated mounting studs or rails.
3. Secure the breaker using appropriate fasteners for a bolt-on mount. Ensure it is firmly seated.

3.3 Wiring Connections

Connect the load and line conductors to the appropriate terminals. Refer to the terminal information for correct wire sizes and torque values.

Figure 1: Illustrative image of an Eaton FD-frame industrial circuit breaker. Note that the specific model shown (FD 65k, 200 Amps) is for visual reference only; this manual pertains to the FD3050, 50 Amp model. The image displays the ON/OFF toggle, terminal connection points, and various ratings.

Terminal Information (General Guidance - Always refer to product label)

Terminal Type	Wire Size (AWG)	Torque (lb-in)
Socket Head	(Refer to product label)	(Refer to product label)
Slotted Head	(Refer to product label)	(Refer to product label)

Note: *The specific torque values and wire size ranges for the FD3050 model should be verified directly on the product label or official Eaton documentation. The table above provides a general format.*

4. After wiring, double-check all connections for tightness and correct polarity.
5. Ensure no loose strands of wire are present that could cause short circuits.

4. Operating Instructions

The Eaton Cutler-Hammer FD3050 Circuit Breaker features a simple ON/OFF toggle mechanism.

- **To Turn ON:** Push the toggle handle firmly to the "ON" position.
- **To Turn OFF:** Push the toggle handle firmly to the "OFF" position.
- **Tripped Condition:** If an overload or short circuit occurs, the breaker will automatically trip to the center position. To reset, first push the handle fully to the "OFF" position, then push it to the "ON" position. If the breaker immediately trips again, do not force it; investigate the cause of the fault.

5. Maintenance

Regular maintenance helps ensure the longevity and reliable operation of your circuit breaker.

- **Periodic Inspection:** Annually inspect the breaker for signs of physical damage, discoloration, or loose connections.
- **Cleaning:** Keep the breaker free from dust, dirt, and moisture. Use a dry, non-conductive cloth for cleaning.
- **Connection Checks:** Periodically verify that all terminal connections remain tight and torqued to specifications.
- **Testing:** Consult with qualified electricians for periodic functional testing as per industry standards and local codes.

Caution: *Always de-energize the circuit before performing any maintenance or inspection.*

6. Troubleshooting

This section addresses common issues you might encounter with your circuit breaker.

Problem	Possible Cause	Solution
Breaker trips immediately after reset.	Persistent overload or short circuit on the protected circuit.	Identify and correct the fault (e.g., faulty appliance, wiring issue). Do not repeatedly reset the breaker without addressing the cause.
Breaker feels hot to the touch.	Loose connections, continuous overload, or internal fault.	De-energize immediately. Check terminal connections for tightness. Reduce load if continuously overloaded. If problem persists, replace the breaker.
Power loss, but breaker is not tripped.	Upstream fault, utility outage, or internal breaker failure.	Check other breakers in the panel and main service. Contact utility company. If all else fails, consult a qualified electrician.

Important: *For any persistent or complex electrical issues, always consult a qualified and licensed electrician.*

7. Specifications

Key technical specifications for the Eaton Cutler-Hammer FD3050 Circuit Breaker:

- **Model Number:** FD3050
- **Brand:** Eaton / Cutler-Hammer
- **Current Rating:** 50 Amps
- **Voltage Rating:** 600V (AC/DC, refer to product label for specific AC/DC ratings)
- **Number of Poles:** 3
- **Circuit Breaker Type:** Standard, Thermal-Magnetic
- **Frame Type:** FD Frame
- **Mounting Type:** Bolt-On Mount
- **Interrupting Capacity:** 35kA (at specified voltages, refer to product label)
- **Package Dimensions:** Approximately 8 x 5 x 5 inches
- **Weight:** Approximately 4.2 Pounds

8. Warranty and Support

For warranty information, please refer to the official Eaton Cutler-Hammer warranty statement provided with your product or visit the official Eaton website. Product support and technical assistance can be obtained through authorized Eaton distributors or by contacting Eaton customer service directly.
For further assistance, please visit the Eaton Store on Amazon or the official Eaton website.