Open/close drawout door interlock kit - RF

Instructions apply to:

UL489 : PD-RF
IEC : PD-RF, IZMX40

WARNING
(1) ONLY QUALIFIED ELECTRICAL PERSONNEL SHOULD BE PERMITTED TO WORK ON THE EQUIPMENT.
(2) ALWAYS DE-ENERGIZE PRIMARY AND SECONDARY CIRCUITS IF A CIRCUIT BREAKER CANNOT BE REMOVED TO A SAFE WORK LOCATION.
(3) DRAWOUT CIRCUIT BREAKERS SHOULD BE LEVERED (RACKED) OUT TO THE DISCONNECT POSITION.
(4) ALL CIRCUIT BREAKERS SHOULD BE SWITCHED TO THE OFF POSITION AND MECHANISM SPRINGS DISCHARGED.
FAILURE TO FOLLOW THESE STEPS FOR ALL PROCEDURES DESCRIBED IN THIS INSTRUCTION LEAFLET COULD RESULT IN DEATH, BODILY INJURY, OR PROPERTY DAMAGE.

WARNING
THE INSTRUCTIONS CONTAINED IN THIS IL AND ON PRODUCT LABELS HAVE TO BE FOLLOWED. OBSERVE THE FIVE SAFETY RULES:
– DISCONNECTING
– ENSURE THAT DEVICES CANNOT BE ACCIDENTALLY RESTARTED
– VERIFY ISOLATION FROM THE SUPPLY
– EARTHING AND SHORT-CIRCUITING
– COVERING OR PROVIDING BARRIERS TO ADJACENT LIVE PARTS.
DISCONNECT THE EQUIPMENT FROM THE SUPPLY. USE ONLY AUTHORIZED SPARE PARTS IN THE REPAIR OF THE EQUIPMENT. THE SPECIFIED MAINTENANCE INTERVALS AS WELL AS THE INSTRUCTIONS FOR REPAIR AND EXCHANGE MUST BE STRICTLY ADHERED TO PREVENT INJURY TO PERSONNEL AND DAMAGE TO THE SWITCHBOARD.
Section 1: General information

The RF open/close door interlock is an external accessory for drawout circuit breakers which consists of a mechanism interlock assembly mounted to the cassette which interfaces the breaker’s trip bar and pole shaft. A latch assembly is also mounted to the cassette and a door latch assembly mounts to the inside of the switchgear door. The interlock prevents the breaker from being closed when the switchgear door is open. When the switchgear door is closed, the breaker can be closed manually or remotely which automatically latches the door in the closed position.

In case of emergency, it is possible to disengage the latch and open the door from outside the switchgear. In this scenario, the breaker would automatically open when the door is opened.

The door interlock kit is available to mount on the left or right side of the cassette. In order for the accessory to function optimally, a kit should be purchased for the side of the cassette opposite of the switchgear door hinge.

Kit parts identification

Refer to Figure 1 for visual identification of the parts listed below.

(A) Trip pin (1)
(B) M3 x 16 mm flat-head screw (1, not shown)
(C) M6 x 12 mm hex bolt (7, not shown)
(D) Lock washer (7, not shown)
(E) Drive arm (1)
(F) M6 x 30 mm flat head screw (1, not shown)
(G) Mechanism interlock assembly (1)
(H) Latch assembly (1)
(I) Latch rod (1)
(J) E-rings (4, not shown)
(K) Over travel spring (1)
(L) Door latch mount (1)
(M) Door latch (1)
(N) M5 x 12 mm mounting screw (2, not shown)
(O) M5 lock washer (1, not shown)
(P) M5 flat washer (1, not shown)
(Q) Tube of grease (1, not shown)

Figure 1. Contents of kit.
Section 2: Installation of door interlock

Note: The steps and figures in this instruction leaflet describe installation on the right side of the cassette. Left hand installation is done in a similar fashion.

Required tools
- Round hand file
- 2 mm Allen wrench
- 4 mm Allen wrench
- 10 mm drive socket
- Pliers

Step 1: Remove the screws holding the front cover in place (four for three-pole, six for four-pole). Remove the front cover, pulling down on the charging handle to simplify removal.

Step 2: Remove the three screws holding the levering device side plate to the chassis (one in front, two in the side), then remove the levering device side plate side plate.

Step 3: The drive window must be removed from the right side of the front cover. Either use a utility knife to cut the window away from the cover, or use a punch and a hammer to carefully punch out the window. Once the window is removed, use a small file to remove any burrs that remain. Make certain that all pieces and/or particles are cleaned up and removed before proceeding.

Step 4: Install the drive arm (E) to the right end of the pole shaft with the drive arm lever extending upward as shown. Use a M6 x 30 mm flat-head screw (F) and 4 mm Allen wrench. Torque to 65-85 in-lbs (7.3-9.6 N•m).

Step 5: Install the trip pin to the end of the trip arm on the right side as the drive arm. Use a M3 x 16 mm flat-head screw and 2 mm Allen wrench. Torque to 3-5 in-lbs (0.3-0.6 N•m).

Step 6: Replace Lev-in side plate removed in Step 2 and then reinstall the front cover removed in Step 1.
Step 7: Fasten the mechanism interlock assembly (G) to the right sidesheet of the cassette as shown using a 10 mm drive socket, four M6 x 12 mm hex bolts (C), and lock washers (D). Torque to 40-50 in-lbs (4.5-5.6 N•m).

Step 8: Assemble the e-rings (J) in the two middle slots of the latch rod (I) using pliers. Insert the latch rod through the latch assembly swivel hole, oriented as shown. Place the over-travel spring (K) on the rod below the swivel and secure with an e-ring (J) in the lower slot.

Step 9: Insert the latch rod through the swivel hole on the lever of the mechanism interlock assembly. Seat the latch assembly (H) against the right cassette side sheet (below the interlock assembly mounted in Step 7), then fasten it using a 10 mm drive socket, three M6 x 12 mm hex bolts (C), and lock washers (D). Torque to 40-50 in-lbs (4.5-5.6 N•m).

Step 10: Secure the latch rod by installing an e-ring (J) in the top slot. Apply a small amount of grease to the latch rod/latch assembly swivel interface to ensure it moves smoothly.
Section 3: Installation of the latch

Step 1: Orient door latch mount (M) and door latch (N) as shown in Figure 9.

Step 2: Insert the door latch fully into the door latch mounting plate, then rotate counter clockwise until the holes in each part line up. Install the M5 screw (O) without washers to secure the parts together.

Step 3: Drill the mounting and clearance holes in the switchgear door required for the latch assembly (see Figures 10, 11, and 12).

Step 4: From inside the switchgear door, align the door latch assembly to the holes as shown in Figure 13. Install the M5 screw (O) and washers (P,Q) from the outside of the door. Torque the mounting screw to 35 in-lbs (4 N·m).
Section 4: Functional tests of the interlock assembly

Complete the following steps to test the functionality of the assembly. If breaker does not exhibit the expected behavior, review the installation instructions. After review, if the breaker still does not function as expected, consult Eaton for additional instructions. To reach an Eaton Care representative, call (877) 386-2273.

**Step 1:** Return the breaker to the cassette, which should be installed in the switchgear, and rack breaker to the CONNECT position.

**Step 2:** Charge the breaker with the switchgear door open. Ensure that the NOT READY flag is displayed.

**Step 3:** With the switchgear door still open, press the CLOSE button on the breaker. Ensure that the breaker does not close (no spring discharge or contact motion).

**Step 4:** Manually push and hold the mechanism interlock rod to the full extent of its travel. Ensure that the READY flag is displayed. Press the CLOSE button. Ensure that the breaker closes.

**Step 5:** Release the push rod. Ensure that the breaker opens.

**Step 6:** Close the switchgear door then charge the breaker. Ensure that the READY flag is displayed then press the CLOSE button. Ensure that the breaker closes and the switchgear door is latched.

**Step 7:** Trip the breaker by pressing the OPEN button. Ensure that the switchgear door can now be opened.

**Note:** Utilize a light amount of the supplied lubricant grease if any interlock parts were sticking during functional testing.
Section 5: Emergency access

**Step 1:** In the event of an emergency, the latch can be defeated by removing the screw on the left of the latch assembly. This will release the door latch and allow it to rotate down out of the way of the latch assembly mounted to the cassette, releasing the door.

**Note:** The breaker contacts will open automatically when door is opened.

![Figure 15. Section 5, Step 1.](image)

**Step 2:** To replace the latch, rotate it up (as shown in Figure 9) and reinstall the screw that was removed in Step 1 of this section.
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