**CES key interlock kit in Magnum low voltage circuit breakers**

**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.

**Section 1: General information**

This key interlock provides the following safety features:

- With no key, the breaker is OPEN and cannot close.
- With the key ON (in cylinder) and rotated, the breaker is fully functional.
- The key cannot be removed when the breaker is ON (closed). The key cannot turn the breaker OFF.

**Note:** To remove the key, press the breaker OFF button, and rotate the key 90 degrees counterclockwise.

**Required tools**

- 1/4-inch drive socket
- 10 mm socket
- #2 Phillips head screwdriver
- Adjustable crescent wrench
- Needle nose pliers
- 3 mm wrench
- Small blade screwdriver

**Kit parts identification**

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

- (A) Interlock arm assembly
- (B) CES lock #5256E with CES Key (CES keylock not supplied)
- (C) Bushing
- (D) Lock mounting plate
- (E) Torsion spring
- (F) Interlock adapter assembly
- (G) Retainer nut
- (H) M3.2 retaining ring
- (I) Cable assembly
- (J) M3 x 6 self-thread screw (three)
- (K) Extension spring
- (L) Hex standoff
- (M) Trip lever (only used if necessary)

**Note:** Used only when necessary to replace an existing older design trip lever.

- (N) Trip lever screw
- (P) Adapter plate
- (Q) and (R) Standoff mounting screws
- (S) Adapter plate screws (two)

*Figure 1. Contents of Kit*
Section 2: Installation of key interlock

Proceed with the following 16 steps:

**Step 1:** Remove the front cover of the breaker by loosening four mounting bolts (six bolts if four-pole breaker), and hold the charging handle down approximately 45 degrees to simplify removal.

**Step 2:** Remove plug from keylock hole. If hole does not exist, drill a 1-7/16-inch (36 mm) hole using existing countersink on inside of cover as a pilot guide. Use a hole saw, such as a Starrett #KAVH0176.

**Step 3:** If there is an operations counter and operation spring installed, remove and save these items for later re-installation. Remove existing counter/lock mounting plate and discard it.

**Step 4:** Snap the interlock arm assembly (A) into place on the shaft as shown.

**Step 5:** Place bushing (C) on keylock body (B). Note orientation of keylock and mount to lock mounting plate (D) with hex nut supplied with lock. Discard other hardware supplied with keylock—collar, small hex nut, cam arm.

**Step 6:** Place torsion spring (E) on rear of keylock. The leg of the spring fits into hole in lock mounting plate assembly above keylock mounting nut.

**Step 7:** Place interlock adapter assembly (F) on rear of keylock.

**Step 8:** Screw retainer nut (G) onto rear of keylock assembly.
Step 9: Using pliers, wind free leg of spring counterclockwise approximately 100 degrees and hook onto leg of interlock adapter as shown.

Figure 9. Step 9

Step 10: Attach adapter plate (P) to keylock assembly with adapter plate screws (S).

Figure 10. Step 10

Step 11: Mount the hex standoff (L) and cable assembly (I) with the hex standoff mounting screw (Q) and screw (R) as shown.

Figure 11. Step 11

Step 12: Mount lock assembly to back side of universal mounting bracket with three M3 screws (J) provided with kit and torque to 10–12 in-lbs (1.1–1.3 Nm). Attach extension spring (K) between installed interlock adapter and lock plate assembly tab as shown.

Figure 12. Step 12

Step 13: If it is necessary to replace the existing trip lever, remove the existing E-Clip (retaining ring) from shaft of mechanism, and slide old trip lever off of mechanism shaft. Slide new trip lever (M) onto mechanism shaft. Fasten lever in place with M3.2 retaining ring (H) as shown. Attach remaining end of cable assembly to mounting hole on trip lever with trip lever screw (N).

Figure 13. Step 13

Step 13a: Note operation of trip lever when rotating key. When the key is rotated clockwise to the vertical position, the trip lever is pulled down, which locks out the breaker.

Figure 14. Step 13a

Step 14: If the breaker includes an operations counter, install it to the back of the lock mounting plate with two M3.5 x 8 mm self-tapping screws. Refer to Operations Counter IL for installation instructions.

Step 15: Reinstall the front cover.
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