Installation instructions for Kirk Key Interlock Kit (2C12891G21) in Magnum® low-voltage circuit breakers

**WARNING**

1. ONLY QUALIFIED ELECTRICAL PERSONNEL SHOULD BE PERMITTED TO WORK ON THE EQUIPMENT.

2. DO NOT ATTEMPT TO INSTALL OR PERFORM MAINTENANCE ON THE EQUIPMENT WHILE ENERGIZED. ALWAYS VERIFY THAT NO VOLTAGE IS PRESENT BEFORE PROCEEDING.

3. ALWAYS DE-ENERGIZE PRIMARY AND SECONDARY CIRCUITS BEFORE REMOVING CIRCUIT BREAKER.

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

This key interlock provides the following safety features:

1. With no key, the breaker is “OPEN” and cannot close.
2. With the key “ON”, the breaker is fully functional.
3. The key cannot be removed when the breaker is “ON”. The key cannot turn the breaker “OFF”.

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

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#### Required tools

- 1/4 inch socket drive
- 10 mm socket
- #2 Phillips head screwdriver
- 1 7/16 inch (36 mm) hole saw
- 3/32 hex key
- 9/64 hex key
- Needle nose pliers
- Arbor press, bench vise, or equivalent
- Spring puller (such as Moody Tool item #6HAR6)

(Steps 1–5) can be pre-assembled if no portable Arbor press, bench vise, or equivalent is available on job site.

#### Kit parts identification

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

- (A) Kirk® Key Lock #KC40.10 (Kirk key lock not supplied).
- (B) Bushing
- (C) Kirk lock mounting plate
- (D) Torsion spring
- (E) Guide pin
- (F) Cylinder interlock adapter
- (G) Hex standoff
- (H) 1/2 inch cap screw
- (I) Interlock cable
- (J) Shoulder screw 1/8 inch
- (K) #3–48 x 3/8 flathead screw (2)
- (L) Interlock arm assembly
- (M) #5–40 x 0.25 inch machine screw (3)
- (N) Extension spring (2, 1 spare)
- (O) D-latch trip lever (NOT ALWAYS NEEDED)
- (P) E-clip (NOT ALWAYS NEEDED)
- (Q) M3.5 x 10 tapping screw

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Figure 1. Contents of kit 2C12891G21
Section 2: Installation of key locks

Proceed with the following 14 steps:

\[ \text{\textbf{IMPORTANT}} \]
\[ \text{DO NOT REINSERT KEY UNTIL STEP 6.} \]

Step 1: First remove key from key lock (A). Then remove two screws from back of key lock and discard the cam arm and screws. Remove one knurled nut from barrel of lock.

\[ \begin{align*}
\text{Figure 2. Step 1}
\end{align*} \]

Step 2: Remove second knurled nut from key lock body and place bushing (B) on cylinder body. Note orientation of key lock, and then mount to lock mounting plate (C) with the knurled nut.

\[ \text{\textbf{IMPORTANT}} \]
\[ \text{DO NOT INSERT KEY.} \]

\[ \begin{align*}
\text{Figure 3. Step 2}
\end{align*} \]

Step 3: Put torsion spring (D) on guide pin (E). Note the orientation of spring legs, and carefully press the knurled end of guide pin into hole in key lock body to the depth of the knurl. This step requires an Arbor press, vise, or equivalent.

\[ \text{\textbf{IMPORTANT}} \]
\[ \text{DO NOT INSERT KEY.} \]

\[ \begin{align*}
\text{Figure 4. Step 3}
\end{align*} \]

Step 4. Mount cylinder interlock adapter (F) to hexagonal standoff (G) with 1/2 inch long cap head screw (H) and tighten securely. Attach cable assembly (I) to other end of hexagonal standoff with shoulder screw (J).

\[ \text{\textbf{IMPORTANT}} \]
\[ \text{DO NOT INSERT KEY.} \]

\[ \begin{align*}
\text{Figure 5. Step 4}
\end{align*} \]
Step 5: Mount interlock assembly to rear of key lock with two #3-48 x 3/8 inch long flathead screws (K).

**IMPORTANT**

**DO NOT INSERT KEY.**

Step 6: Using pliers, wind free leg of torsion spring (D) clockwise approximately 360 degrees, and hook under lip of interlock adapter as shown.

Step 7: Check that the breaker is "OPEN" and discharged. Using the 10 mm socket and 1/4 inch driver, remove the front cover of the breaker by loosening four mounting bolts (six bolts if four-pole breaker), and holding the charging handle down approximately 45 degrees to simplify removal.

Step 8: Remove plug from key lock hole. If hole does not exist, use a 1-7/16 inch (36 mm) hole saw to drill a hole using existing drill point countersink on inside of cover as a pilot guide.

Step 9: Remove existing key lock mounting plate (if installed) from the universal mounting bracket and discard it. If there is an operations counter mounted to it, remove it before discarding and save for Step 13.
Step 10: Snap interlock arm assembly (L) into place on shaft, with steel spring flush against mechanism side plate.

Step 11: Mount lock/interlock assembly to plate mounting bracket with three machine screws (M) supplied.

Step 12: Connect extension spring (N) between the interlock arm assembly (L) and lock mounting plate (C). Attach one end of the spring to the interlock arm assembly such that the free end of the spring is facing downward, as shown.

Step 12a: Using a spring hook or similar tool, hook the free end of the spring and rotate it 90 degrees clockwise. The open end of the spring hook should be facing inwards towards the mechanism.
Step 12b: Pull the spring through and attach to the mounting plate, as shown.

Figure 14. Step 12b

**IMPORTANT**

ATTACHING THE SPRING IN THIS MANNER WILL CAUSE MALFUNCTION OF THIS KIT.

The spring SHALL NOT be mounted in this orientation.

Figure 15. Incorrect spring mounting

Step 13: Insert key and rotate lock and standoff assembly. Connect cable assembly to new trip lever with tapping screw (Q). (DO NOT OVERTIGHTEN.) See Step 13a for old lever replacement.

Step 13a: If installed trip lever (O) is not provisioned to accept tapping screw (Q), replace it by prying off existing e-clip and sliding off the trip lever. Install new trip lever (O) and install e-clip (P).

Figure 16. Steps 13 and 13a

Step 14: If the breaker includes an operations counter, mount it to the back of the lock mounting plate with two M3.5 x 8 mm self tapping screws. Refer to IL2C14767H01 for complete operations counter installation instructions.

Step 15: Before reinstalling front cover, perform the following functional checks:

1. Verify if a UVR is installed. It may have to be temporarily removed to perform checks.
2. With no key, the breaker is “OPEN” and cannot “CLOSE”.
3. With the key installed and rotated 90 degrees clockwise, the breaker is fully functional.
4. The key cannot be removed when the breaker is “CLOSED”.
5. The key cannot turn the breaker “OFF”.
6. Key removal only occurs when breaker is “OFF”.

Step 12b: Pull the spring through and attach to the mounting plate, as shown.
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