

# FSQC SERIES 100 AMP INTERLOCKED RECEPTACLE AND SWITCH

## Installation & Maintenance Information

**IF 1429**

### SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

#### APPLICATIONS

FSQC61040 series dead front switched interlocked receptacles are designed to provide power to portable or stationary equipment. FSQC61040 is rated for 100A, 600VAC service and is available in 3 wire, 4 pole Style 2 configuration only. Use only Crouse-Hinds 100A 3 wire, 4 pole Arktite® or Krydon® series plugs to ensure proper engaging and operation of FSQC61040 receptacle and interlock mechanism.

An interlocked receptacle is designed to prevent plug insertion or withdrawal while the switch is "ON", therefore preventing the hazard of an electrical arc in any environment or circumstance where arcing is undesirable or must be prevented due to the presence of hazardous gases, vapors or dusts.

FSQC61040 series interlocked receptacles are suitable for use in

Class I, Division 1 and 2, Groups B, C, and D; Class II, Division 1 and 2, Groups F and G and Class III hazardous (classified) areas as defined by the National Electric Code®. Conduit seals must be installed within 18 inches of each conduit opening. Conduit size must not exceed 2".

Operation - The internal switch can only be activated by inserting a Crouse-Hinds Arktite® plug and then rotating the external collar located on the receptacle sleeve. Upon rotating the collar, the internal switch will be turned "ON", delivering power to the plug and the attached equipment. At the same time, the plug will be locked in place, preventing removal of the plug while the switch is "ON". To turn the power "OFF", rotate the collar counterclockwise back to its original position. The switch will be turned "OFF" and the plug will be released from the interlock mechanism, allowing removal of the plug.

#### INSTALLATION

##### **CAUTION**

The FSQC Series enclosure must be installed, inspected, operated, and maintained by qualified and competent personnel.

##### **WARNING**

To avoid electrical shock hazard, electrical power must be turned **OFF** before and during installation and maintenance.

1. Select a mounting location that will provide suitable strength and rigidity for supporting the enclosure and contained wiring (unit weight is approximately 48 lbs.).
2. Position receptacle facing downward and securely fasten enclosure to the mounting surface and attach into conduit system.

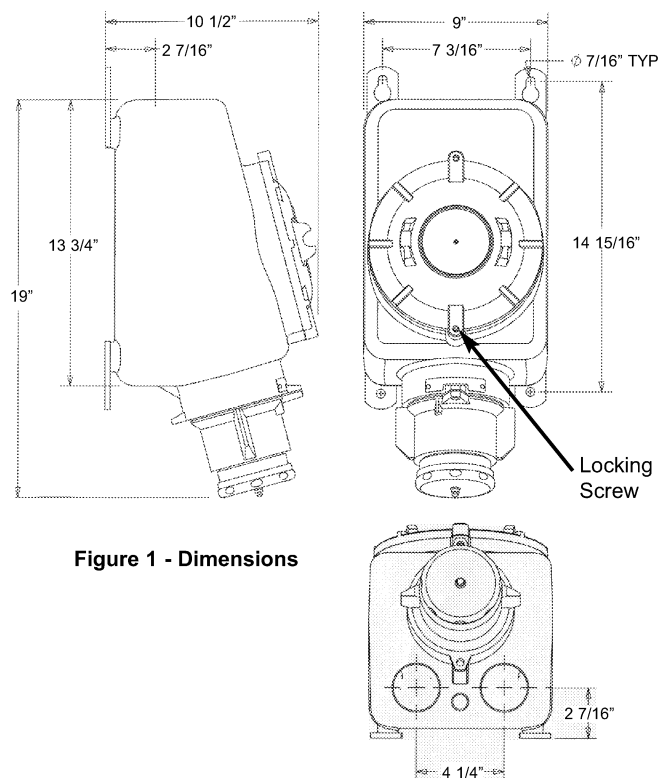
##### **CAUTION**

To comply with installation requirements of the National Electrical Code section 501-5 and 502-5 conduit sealing fittings are required within 18 inches of each conduit entry.

3. With enclosed switch in OFF position, turn cover locking screw clockwise (inward). Cover locking screw is accessible through hole located in lower edge of cover. See figure 1. Unscrew and remove cover.

Note: Turning cover locking screw clockwise (inward) engages a groove in the receptacle interior, preventing its rotation. This added safety feature prevents the enclosed switch from being operated by the plug when the cover is removed.

4. Establish a wiring pattern for your system.



**Figure 1 - Dimensions**

##### **WARNING**

Before installing a FSQC Series receptacle, a wiring pattern must be established for your system. Locations having different voltages, frequencies, or types of current (AC or DC) must not have interchangeable attachment plugs per the National Electrical Code. For each system the same colored wire must be put into the same numbered contact on all plugs and receptacles in that system. This will assure correct system polarity and eliminate the possibility of equipment damage and / or personal injury due to misphasing or shorts. Always test before energizing.

The FSQC is suitable for use on circuits capable of delivering 10,000 amps (RMS symmetrical).

FSQC Series receptacles are polarized so plug enters receptacle only one way. This provides for proper polarity of conductors through plug and receptacle.

Note: Receptacles identified with the addition of Suffix S4 to catalog number are supplied with receptacle contacts rotated 22-1/2 degrees for special polarity application. They are compatible only with plugs built with the same feature.

Contacts in the receptacle insulating body are identified by number. Corresponding plug contacts must always mate with those in receptacle identified by the same contact number.

#### ⚠ CAUTION

To avoid fire hazard or accelerated degradation of insulation, use copper conductors only with an insulation rating of 75 degrees C min. Size conductors for 60 degrees C ampacity.

5. Pull all branch circuit and ground conductors into enclosure, providing sufficient length to connect to enclosed switch terminals.
6. Make electrical connections utilizing the wiring pattern established for your system. Connect branch circuit conductors to enclosed switch screw terminals with corresponding terminals per 6A or 6B.

Note: Avoid conductors of excessive length which may crowd the switch contacts and restrict proper switch operation.

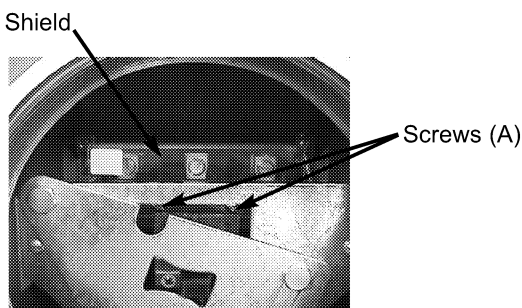
#### 6A. WIRING WITHOUT AUXILIARY CONTACTS

- Remove clear plexi-glass terminal shield and auxiliary contact switch assembly by loosening two screws (A) and then sliding shield up and out of the way. Line side terminal lugs can now be easily accessed. **Note: Do not** back screws (A) out all the way.
- Attach conductors to proper terminal lugs and tighten to torque per figure 2.
- Slide shield back in place and tighten two screws (A).

#### ⚠ WARNING

To prevent accidental contact with the line side terminals, terminal shield must be installed back to original position before turning on power.

- Connect green grounding conductor to green grounding lug.



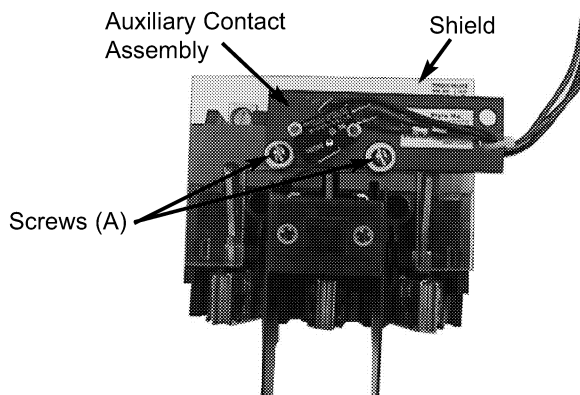
#### 6B. WIRING WITH AUXILIARY CONTACTS

- Remove clear plexi-glass terminal shield and auxiliary contact switch assembly by loosening two screws (A). Then slide shield and auxiliary contact up and out of the way. Line side terminal lugs can now be accessed. **Note: Do not** back screws (A) out all the way.
- Attach conductors to proper terminal lugs and tighten to torque per figure 2.
- Slide shield and auxiliary contact assembly back in place & tighten two screws (A).

#### ⚠ WARNING

To prevent accidental contact with the line side terminals, terminal shield must be installed back to original position before turning on power.

- Connect green grounding conductor to green grounding lug.
- Connect auxiliary contact wires as required.



| Terminal | Wire Size | Torque     |
|----------|-----------|------------|
| Switch   | #2 - 1/0  | 50 in./lb. |
| Switch   | #6 - #4   | 45 in./lb. |
| Switch   | #8        | 40 in./lb. |
| Ground   | #2 - #8   | 40 in./lb. |

Figure 2

#### ⚠ CAUTION

Receptacle housing must be securely attached into a permanently grounded conduit system in accordance with Article 250 of the National Electrical Code.

7. Rethread cover into housing. Tighten cover until cover flange contacts body face. Back off slightly to align access hole in lower edge cover with cover locking screw.

#### ⚠ CAUTION

Check for dirt, grit, or other foreign material on the threads. If any such material settles on these threads, clean them with kerosene or Stoddard slovent, then relubricate with Crouse-Hinds type STL thread lubricant. To avoid the possibilities of an explosion, oxidation, and corrosion, do not use gasoline or similar solvents.

8. Turn cover locking screw counterclockwise (outward). This will lock cover in place and release the receptacle interior so that the switch can be operated.

9. Test mechanically by aligning and inserting mating plug fully. Rotate collar as indicated on receptacle plate. Rotate counterclockwise and withdraw plug.

Note: Lockout holes are aligned when in the "OFF" position.

**⚠ WARNING**

Do not connect to power until the following electrical tests have been performed:

Make continuity check of wiring to verify correct phasing and grounding connectors.

Check insulation resistance to be sure system does not have any short circuits or unwanted grounds.

**⚠ WARNING**

To avoid electrical shock hazard, always disconnect primary power source before opening enclosure for inspection or service.

## BREATHER / DRAIN

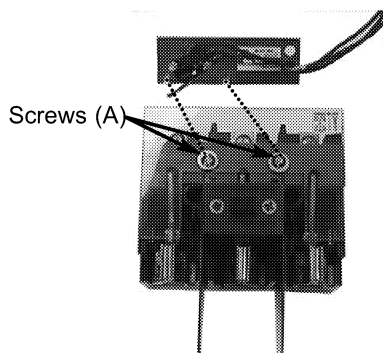
Provisions are provided to add breather / drain in the enclosure. A 1/2" NPT tapped hole is located on the receptacle end of the enclosure and is sealed with a factory installed plug.

Remove plug and replace with desired breather / drain if required. See Crouse-Hinds catalog section 8F to select the appropriate breather / drain suitably certified for application.

## FSQC 100A FIELD INSTALLATION OF AUXILIARY CONTACT

**Note:** Install line side conductors to switch terminals before installing auxiliary contact.

1. Loosen two screws (A).
2. Slide auxiliary contact assembly underneath washers (A) by lining up two notches in brown fiber plate with two screws (A).
3. Re-tighten two screws (A).
4. Attach auxiliary contact wires as required.



## MAINTENANCE

Electrical and mechanical inspection of all components must be performed on a regular schedule determined by the environment and frequency of use. It is recommended that inspection be performed a minimum of once a year.

**⚠ WARNING**

If any parts of the plug, receptacle, or connectors appear to be missing, broken, or show signs of damage, DISCONTINUE USE IMMEDIATELY. Replace with the proper replacement part(s) before continuing service.

1. Inspect switch wire terminals for tightness. Discoloration due to excessive heat is an indicator of a possible problem and should be thoroughly investigated and repaired as necessary.
2. Check grounding and bonding for correct installation and secure connection.
3. Clean exterior surfaces making sure nameplates remain legible.
4. Check tightness of all screws before using.
5. Inspect housings and replace complete unit for those which are broken.
6. Check contacts for signs of arcing or burning. Discontinue use and replace complete unit if arcing is evident.

In addition to these required maintenance procedures, we recommend an Electrical Preventative Maintenance program as described in the National Fire Protection Association Bulletin NFPA No. 70B.

All statements, technical information and recommendations contained herein are based on information and tests we believe to be reliable. The accuracy or completeness thereof are not guaranteed. In accordance with Crouse-Hinds "Terms and Conditions of Sale", and since conditions of use are outside our control, the purchaser should determine the suitability of the product for his intended use and assumes all risk and liability whatsoever in connection therewith.