

Standby Power Connection Solutions

Class 2200

Instruction Bulletin

2200IB1301

07/2013

Retain for future use.



by Schneider Electric

Hazard Categories and Special Symbols

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **can result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **can result in** minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol is not used with this signal word.

NOTE: Provides additional information to clarify or simplify a procedure.

Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

UL

UL (Underwriters Laboratories) are listed by the American Federal Occupational Safety and Health Administration (OSHA) under NRTL (Nationally Recognized Testing Laboratory) program. This equipment complies with standard UL 1008 Supplement SB—Requirements for Inlet Assemblies for Transfer Switch Equipment.

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Introduction

This bulletin contains instructions for the proper installation, operation, and maintenance of Square D™ Integrated Power and Control Solutions (IPaCS™) Standby Power Connection Cam-Lock (SPQCL) Tap Box solution manufactured by Schneider Electric. The purchaser's engineering, installation, and operating staff supervisors should familiarize themselves with this bulletin and become acquainted with the appearance and characteristics of the SPQCL Tap Box.

The tap box is designed to function as a permanently-installed, inlet-style assembly rated 600 V or less and complies with standard UL 1008 Supplement SB—*Requirements for Inlet Assemblies for Transfer Switch Equipment*.

Inspection and Packaging

Every SPQCL Tap Box is carefully inspected and packaged at the assembly plant. Construction is checked, both structurally and electrically, for compliance with all specifications, codes, and standards. After a complete inspection, the tap box is prepared for shipment.

Document Replacement

Contact your nearest Schneider Electric field office to replace lost or damaged wiring diagrams and instruction sheets. Use the SPQCL Tap Box Model Number as a reference.

Safety Precautions

⚠ DANGER

HAZARD OF ELECTRICAL SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Turn off all power supplying this equipment before working on or inside the equipment.
- Always use a properly-rated voltage sensing device to confirm all power is off.
- Do not connect or disconnect under load.
- Replace all covers after field wiring connections are completed before turning on power to this equipment.
- Before performing visual inspections, tests, or maintenance on this equipment, disconnect all sources of electric power. Assume all circuits are live until they are completely de-energized, tested, and tagged. Pay particular attention to the design of the power system. Consider all sources of power, including the possibility of backfeeding.
- Handle this equipment carefully and install, operate, and maintain it correctly in order for it to function properly. Neglecting fundamental installation and maintenance requirements may lead to personal injury, as well as damage to equipment or other property.
- Carefully inspect your work area and remove any tools and objects left inside the equipment.
- All instructions in this bulletin assume that the customer has taken these measures before performing maintenance or testing.

Failure to follow these instructions will result in death or serious injury.

Receiving and Storing

Upon receipt, immediately inspect the tap box for any damage that may have occurred in transit. If damage is found or suspected, file a claim with the carrier immediately and notify the nearest Schneider Electric representative.

Receiving

Claims for shortages or errors must be made in writing to Schneider Electric within 60 days after delivery. Failure to give such notice will constitute unqualified acceptance and a waiver of all such claims by the purchaser. Delivery of equipment to a carrier at any of the Schneider Electric plants or other shipping points constitutes delivery to the purchaser regardless of freight payment and title. All risk of loss or damage pass to the purchaser at that time.

For details concerning claims for equipment shortages and other errors, refer to Schneider Electric "Terms and Conditions of Sale."

Storing

If the tap box is not installed immediately, store it in a clean, dry space with a consistent temperature to prevent condensation. Preferably, store it in a heated building with adequate air circulation and protect it from dirt, fumes, water, and physical damage.

Installation

Correct installation of the tap box is essential for proper operation. Study the associated instructions and all drawings carefully.

NOTE: While installing the tap box, do not use the top of the enclosure as a support for the weight of the installer.

Location

Find the designated area on the building plan where the tap box will be installed. It is designed to be mounted in a NEMA 3R environment. The location chosen for installation should provide working clearances complying with the National Electrical Code® (NEC®) Section 110-26.

General Installation

For all installations, the tap box should be mounted to a flat surface of sufficient strength to support its weight and should be installed such that the top of the enclosure is level.

The fastener used should be suitable for fastening to the type of material of which the mounting surface is constructed and should be of sufficient strength to support the weight of the tap box. See Table 1 for the estimated weights by model number.

Table 1: Estimated Weights of the SPQCL Tap Box

Model Number	Weight (lbs)
SPQCL204RS	160
SPQCL404RS	160
SPQCL206RS	170
SPQCL406RS	170

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

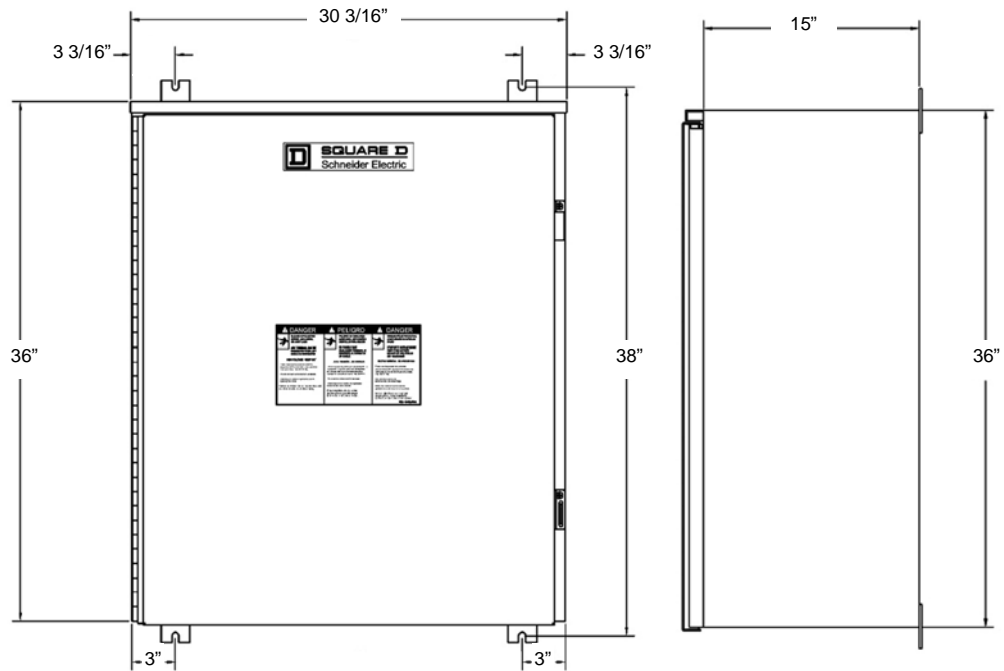
- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- Turn off all power supplying this equipment before working on or inside this equipment.
- For use only for connection of a portable generator to the source terminals of a transfer switch, such that the inlets are only energized from the generator.
- Do not connect or disconnect under load.

Failure to follow these instructions will result in death or serious injury.

Reference Dimensions for Mounting

NOTE: Dimensions in Figure 1 are typical of all SPQCL models.

Figure 1: Reference Dimensions



Accessing Field Wiring Terminals

⚠ DANGER

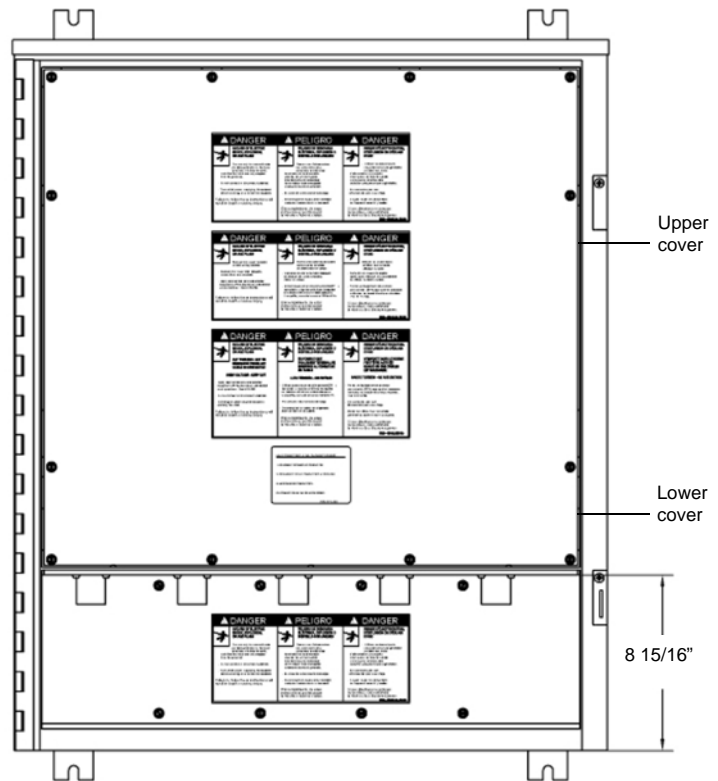
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- Remove the upper cover for access to field wiring terminals,
- Replace the upper cover after field wiring connections are completed.

Failure to follow these instructions will result in death or serious injury.

Figure 2 shows the upper cover that can be removed for access to the field wiring terminals. Cover must be replaced prior to operation, once field wiring connections are completed.

Figure 2: Upper Cover Installed



Field Wiring for Load Conductors

NOTE: The specified conduit entry area for load conductors is typical for all SPQCL models.

Figure 3: Interior View for Field Wiring (Upper Cover Removed)

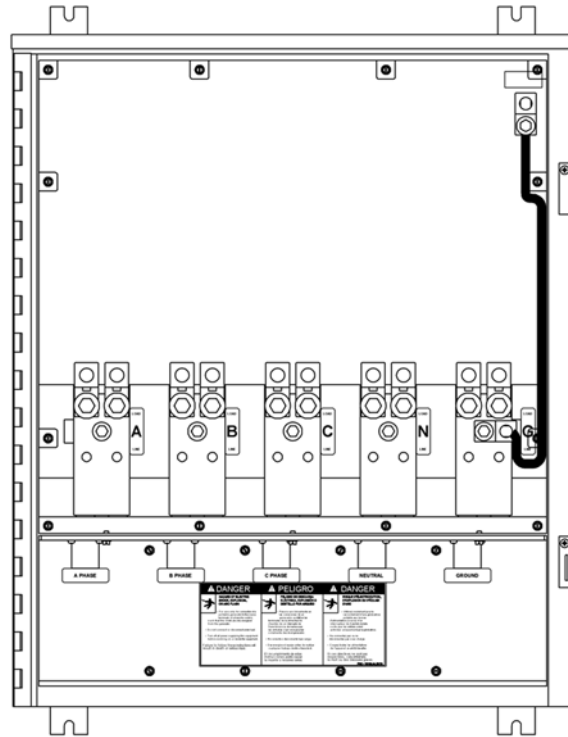
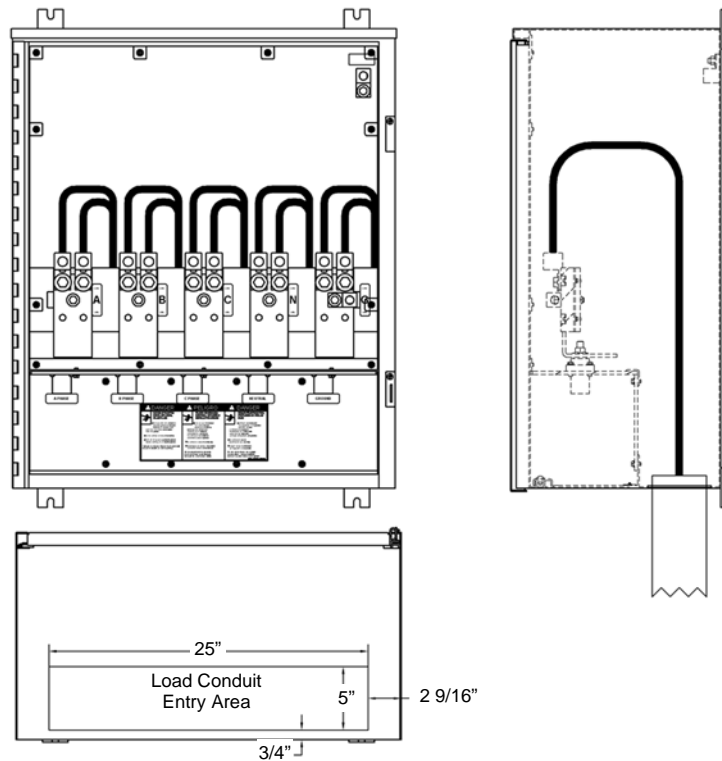


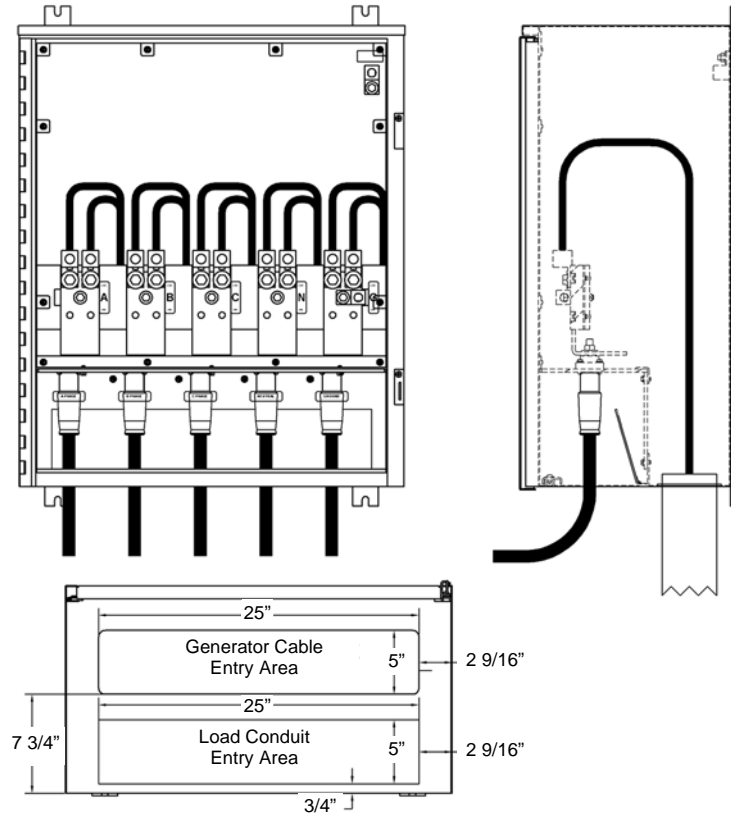
Figure 4: Interior View with Typical Load Conductors



Generator Cable Entry

NOTE: The specified generator cable entry area is typical for all SPQCL models.

Figure 5: Generator Cable Entry



Checkout Procedure

⚠ DANGER

**HAZARD OF ELECTRIC SHOCK,
EXPLOSION, OR ARC FLASH**

**ANY TERMINAL MAY BE ENERGIZED
WHEN ANY CABLE IS CONNECTED**

HIGH VOLTAGE—KEEP OUT

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- Do not connect or disconnect under load.
- Deenergize cables at generator prior to opening this cover.

**Failure to follow these instructions will
result in death or serious injury.**

Conduct a complete inspection to ensure that all components function and operate properly before the tap box is energized. Complete every step of the check list below, before energizing the tap box.

1. Check all accessible connections for tightness.
2. Check the tap box enclosure for dents or other damage that reduces electrical clearances inside the tap box.
3. Inspect all cables to ensure the insulation has not been damaged.
4. Verify all connections are grounded.
5. Verify all proper field wiring is installed.
6. Vacuum to remove any dust, scrap wire, or other debris.

NOTE: The tap box **does not** include any interlock equipment to prevent an operator from inadvertently energizing multiple power sources on the same panelboard. This condition could result in extensive equipment damage and serious personal injury.

NOTE: Any system that includes multiple sources of power should be designed to ensure that the system can be safely transitioned between sources.

The tap box is intended to feed the transition equipment.

Typical Sequence of Operation for Temporary Connection of Generator to System with Key Interlocks

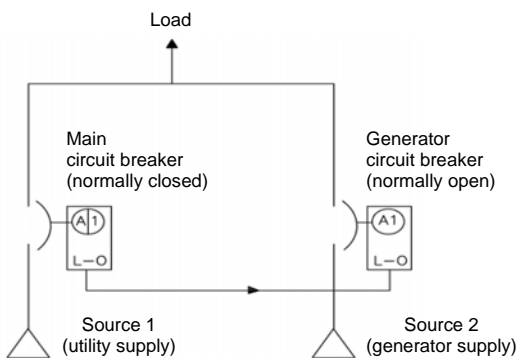
Loss of Utility Power

1. Open all distribution circuit breakers.
2. Open the main circuit breaker and rotate the key A1 to lock the circuit breaker in the open position—key is now removable.
3. Open the tap box outer hinged door to access the generator receptacles. Open the lower generator cable access area by removing the screws, allowing generator cables to be brought in to the tap box for temporary power.
4. Connect generator cables in the following sequence:
 - a. equipment grounding conductor
 - b. grounded circuit conductors (if provided)
 - c. ungrounded conductors
5. Verify proper phase and voltage connection.
6. Close the tap box outer hinged door.
7. Remove the key from the lock and insert it into the lock on the generator circuit breaker.
8. Rotate key A1 to unlock the generator circuit breaker—key is now held captive.
9. Start generator.
10. Verify proper voltage L-L and L-N and proper phase rotation.
11. Close generator circuit breaker and close appropriate distribution circuit breakers.

Return of Utility Power

1. Open distribution circuit breakers.
2. Open generator circuit breaker and rotate the key A1 to lock the circuit breaker in the open position—key is now removable.
3. Remove key from the lock and insert into the lock on the main circuit breaker.
4. Shut down generator.
5. Disconnect generator in the following sequence:
 - a. ungrounded conductors
 - b. grounded circuit conductors (if provided)
 - c. equipment grounding conductor
6. Open the tap box outer hinged door to access the generator receptacles and disconnect the generator cables. Remove the cables from the tap box and close the lower access area by reinstalling the screws, fastening the lower generator cable access shut. Close the tap box outer hinged door.
7. Rotate key A1 to unlock the main circuit breaker—key is now held captive.
8. Close main circuit breaker and close all distribution circuit breakers.

Figure 6: Standby Power Electrical Schematic



Maintaining the Product

Periodic maintenance of the tap box includes cleaning component parts. The interval between maintenance checks can vary depending upon the amount of usage and environmental conditions of each installation. The maximum recommended inspection interval is one year. This definition for periodic maintenance applies throughout this bulletin, unless otherwise noted.

General Inspection and Cleaning

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- Always practice lock-out/tag-out procedures according to OSHA requirements.
- Inspect and perform preventive maintenance only on equipment to which power has been turned to the OFF position, disconnected, and electrically isolated (unless otherwise specified) so that no accidental contact can be made with energized parts.

Failure to follow these instructions will result in death or serious injury.

1. Turn off all power supplying this equipment before working on or inside equipment.
2. Always practice lock-out/tag-out procedures according to OSHA requirements.
3. Always use a properly rated voltage sensing device to confirm all power is off.
4. Vacuum the tap box interior to remove any dirt or dust deposits. Wipe all components, insulators, cables, and so on, with a clean, dry, lint-free cloth.
5. Check the tap box interior carefully for moisture, condensation build-up, or signs of any previous moisture buildup. Moisture can cause insulation failures and rapid oxidation of current-carrying parts. Inspect all conduit entrances and cracks between the enclosure panels for dripping leaks. Condensation in conduits may be a source of moisture and must not be allowed to drip onto live parts or insulating material. Take the necessary steps to eliminate the moisture and seal off all leaks.
6. Inspect the tap box for any signs of overheating. Discoloration, flaking, and cracking of insulation or metal parts are indications of overheating.
NOTE: If overheating occurs, be sure that all conditions that caused the overheating have been corrected. Loose or contaminated connections can cause overheating.
7. Check for signs of rodent nesting in the tap box. If required, use a good exterminating technique in the general area of the tap box.
NOTE: Do not place or use exterminating substances and chemicals inside the tap box. Some of these products attract rodents.
8. Carefully inspect all devices for any visibly worn-out, cracked, or missing parts.

Adverse Circumstances

This section includes, but is not limited to, all components of the SPQCL Tap Box.

Water-Soaked Equipment

Do not clean or repair a SPQCL Tap Box product that has been exposed to large volumes of water or submerged at any time. Current-carrying parts, insulation systems, and electrical components may be damaged beyond repair. Do not energize the tap box. Contact Square D Services, and also refer to Schneider Electric Data Bulletin 0110DB0401Rxx/xx.

Reference Publications

Schneider Electric publications are available through your local Schneider Electric field office. These publications include device replacement procedures and spare parts listings to make ordering and servicing of replacement parts quick and convenient.

Contact the Schneider Electric Customer Information Center at 1-888-778-2733 for information in the US (or 1-800-565-6699 in Canada). Refer to the Technical Library at www.schneider-electric.us/sites/us/en/support/documents-downloads.page to obtain the appropriate publications.

For information about obtaining NEMA documents, write to:

National Electrical Manufacturers Association (NEMA)
Attention: Customer Service
1300 North 17th Street
Suite 1847
Rosslyn, VA 22209

Other Reference Publications	Publication Number
Electrical Equipment Maintenance	NFPA 70B

User Notes

**Standby Power Connection Solutions
Instruction Bulletin**

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California Proposition 65 Warning—Nickel Compounds and Bisphenol A (BPA)

Advertencia de la Proposición 65 de California— compuestos de níquel y Bisfenol A (BPA)

Avertissement concernant la Proposition 65 de Californie— composés de nickel et Bisphénol A (BPA)

⚠️ WARNING: This product can expose you to chemicals including Nickel compounds, which are known to the State of California to cause cancer, and Bisphenol A (BPA), which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

⚠️ ADVERTENCIA: Este producto puede exponerle a químicos incluyendo compuestos de níquel, que son conocidos por el Estado de California como causantes de cáncer, y Bisfenol A (BPA), que es conocido por el Estado de California como causante de defectos de nacimiento u otros daños reproductivos. Para mayor información, visite www.P65Warnings.ca.gov.

⚠️ AVERTISSEMENT: Ce produit peut vous exposer à des agents chimiques, y compris composés de nickel, identifiés par l'État de Californie comme pouvant causer le cancer, et Bisphénol A (BPA) reconnus par l'État de Californie comme pouvant causer des malformations congénitales ou autres troubles de l'appareil reproducteur. Pour de plus amples informations, prière de consulter www.P65Warnings.ca.gov.

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