

iBusway for Data Center™

PBPQOD Plug-In Units with 15–60 A Circuit Breakers for Use On Busway Straight Sections Class 5600

Installation
S1B99523
06/2012



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 a hazardous situation which, if not avoided, **will result in death or serious injury**.

⚠ WARNING

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

⚠ CAUTION

CAUTION indicates a 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.

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Introduction

This bulletin contains instructions for the handling, storage, installation, operation, and maintenance of Powerbus™ PBPQOD circuit breaker plug-in units rated 15–60 A and 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 equipment.

Read and understand this bulletin completely before performing the installation, operation, and maintenance steps provided. For additional circuit breaker information, refer to the appropriate Square D™ brand circuit breaker bulletin supplied with the equipment.

Safety Precautions

Standard Application Precautions

⚠ DANGER
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH
<ul style="list-style-type: none">• Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E or CSA Z462.• This plug-in unit must be installed and serviced only by qualified electrical personnel.• Do not install the circuit breaker type plug-in unit onto the busway without a circuit breaker installed.• Use only Square D™ brand circuit breakers in this plug-in unit.• The circuit breaker catalog prefix must match the plug-in unit prefix on the nameplate.• Do not install, operate, or remove the plug-in unit with the cover open or removed.• Turn off power to the busway before installing or removing the plug-in unit.• Turn off power to the busway or remove the plug-in unit before opening or working inside the enclosure.• Turn off the plug-in unit before opening or working inside the enclosure.• Always use a properly rated voltage sensing device to confirm the plug-in unit is de-energized.
Failure to follow these instructions will result in death or serious injury.

Receiving, Handling, and Storage

Receiving

Upon receipt of plug-in units, check the packing list against the equipment received to ensure the order and shipment are complete. 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.

Immediately inspect the equipment for any damage which may have occurred in transit. If damage is found or suspected, file a claim with the carrier immediately and notify Schneider Electric. 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 passes to the purchaser at that time.

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

Handling

Plug-in units for use on Powerbus busway are shipped in corrugated cartons. Do not drop or perforate the cartons. Rough handling may cause damage to the electrical components contained within. Handle the plug-in units with care to avoid damage to internal components or to its finish.

Protection During Storage

⚠ WARNING

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

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E or CSA Z462.
- Protect this equipment from contaminants such as water, salts, concrete, and other corrosive environments before and during installation.
- Do not sit, walk, or stand on this equipment.

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

NOTE: If the plug-in unit is not installed and energized immediately, store it in a clean, dry space having a uniform temperature. Plug-in units should not be stored outdoors.

For additional handling and storage information, refer to NEMA bulletin BU 1.1.

Plug-In Unit Interrupting Rating

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Use only Square D brand circuit breakers in this plug-in unit.
- The circuit breaker catalog prefix must match the plug-in unit prefix.

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

Refer to Table 1 for plug-in unit rating information.

Table 1: Plug-In Unit Rating Information

Plug-In Unit Catalog Prefix	Circuit Breaker Catalog Prefix	Ampere Rating	Listed Short-Circuit Rating		Maximum Rating (Continuous Duty)	
			kA	Volts (ac)	Amperage	Volts (ac/dc)
PBPQOD	QOU	15–60	10	240	100	240 Vac
	QOUVH		22			

Installing the Plug-In Unit Onto the Busway

Standard Application Precautions

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E or CSA Z462.
- This plug-in unit must be installed and serviced only by qualified electrical personnel.
- Do not install the circuit breaker type plug-in unit onto the busway without a circuit breaker installed.
- Use only Square D brand circuit breakers in this plug-in unit.
- Do not install the plug-in unit with the cover open or removed.
- Turn off power to the busway before installing the plug-in unit.
- Always use a properly rated voltage sensing device to confirm the plug-in unit is de-energized.

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

Schneider Electric has carefully reviewed wording in product hazard messages to alert users to potential hazards, provide instructions to avoid those hazards, and state the consequences of not following hazard messages. Workplace safety standards such as NFPA 70E and CSA Z462 clearly state that the proper method to work on or near electrical equipment is with the equipment in a de-energized state.

However, it is recognized that the standards identify exceptions where powering down the equipment is infeasible or actually introduces additional hazards. While elimination of all risk is not possible, in those situations where it can be demonstrated that energized work is necessary, certain tasks, including the installation or removal of Powerbus Circuit Breaker Plug-In Units, may be performed on an energized Powerbus busway only after the user has demonstrated that the application meets the required exceptions. These exceptions are stated in the NFPA 70E, CSA Z462, or other standards as appropriate and employs the work practices and personal protective equipment described in the standard.

Pre-Installation Testing

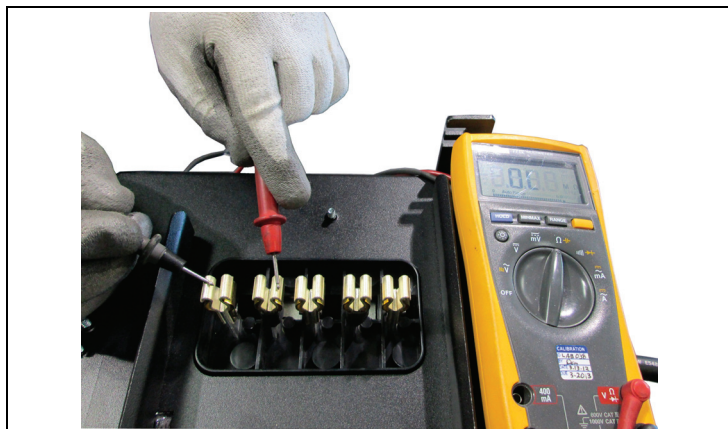
Before installing the plug-in unit onto the busway, perform the following steps to conduct a continuity test:

1. Verify the plug-in unit cover is secure (Figure 1). Do not overtighten.
2. Turn the plug-in unit circuit breaker(s) to the ON (I) position.
3. Use a continuity tester or 500 Vdc maximum megohmmeter to verify phase-to-phase, phase-to-neutral, and ground isolation (Figure 2).
4. Turn the circuit breaker(s) to the OFF (O) position.

Figure 1: Securing the Plug-In Unit Cover



Figure 2: Testing for Plug-In Unit Continuity Prior to Installation



Installing the Plug-In Unit

1. Read the safety statements at the beginning of “Installing the Plug-In Unit Onto the Busway” on page 7 for the appropriate application before installing the plug-in unit onto the busway.
2. Inspect the plug-in unit jaws for contamination. If necessary, clean the jaws and apply more joint compound (part number PJC7201). See Figure 3.
3. Remove the plug-in opening door (see Figure 4). Retain the plug-in opening door inside the plug-in unit for future use.

Figure 3: Inspect Plug-In Jaws

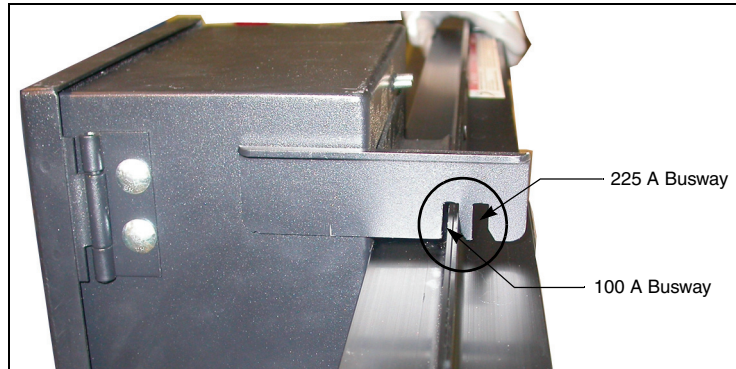


Figure 4: Removing Plug-In Unit Door



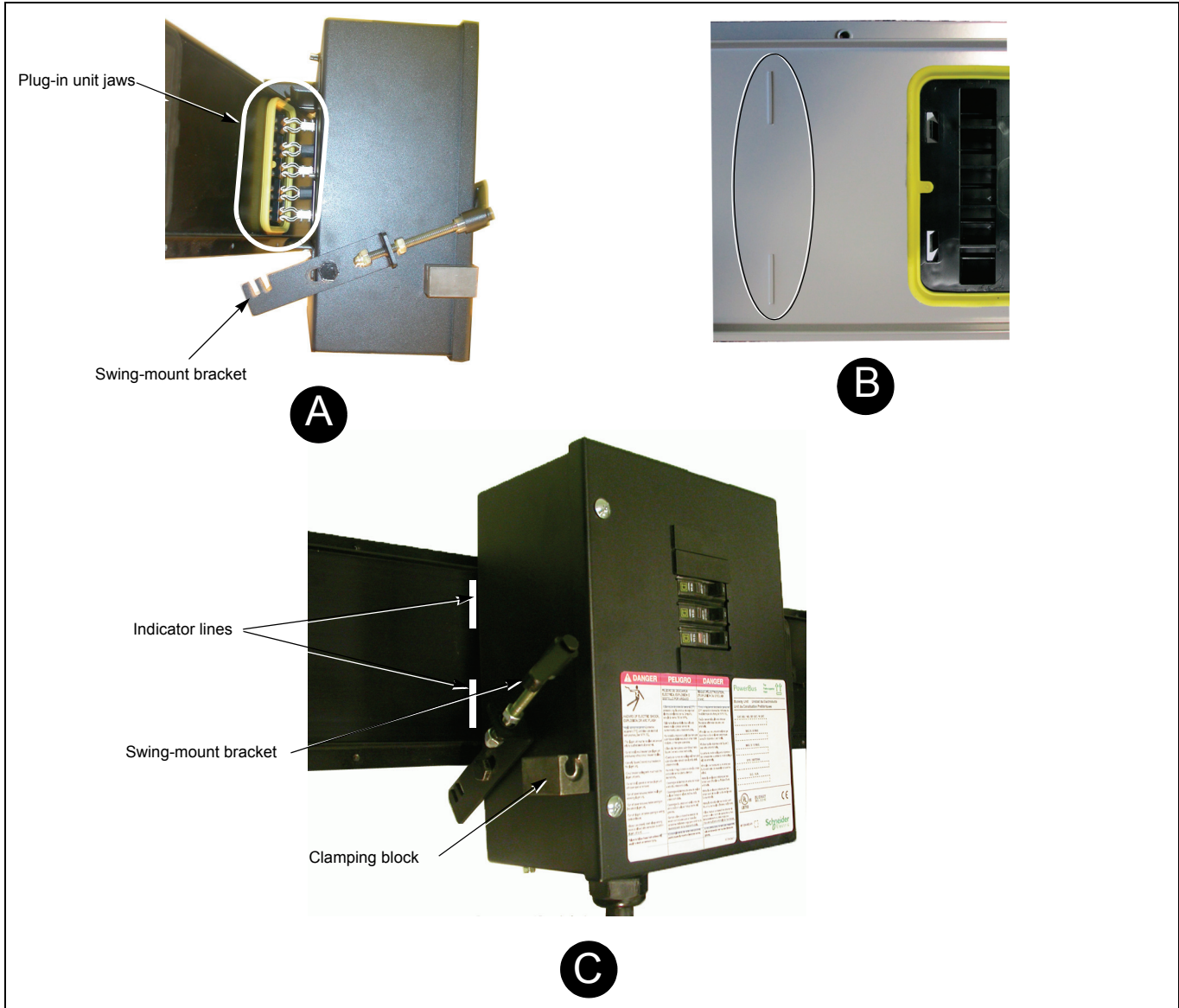
4. Prior to installing the plug-in unit, orient the swing-mount bracket as shown in Figure 6, A on page 10.
5. Orient the plug-in unit so the “TOP” indication on the plug-in unit nameplate matches the “TOP” orientation of the busway (Figure 5).
6. Angle the plug-in unit so the load side mounting bracket can be hooked over the top flange of the busway (Figure 5).

Figure 5: Plug-In Unit Top Flange Engagement



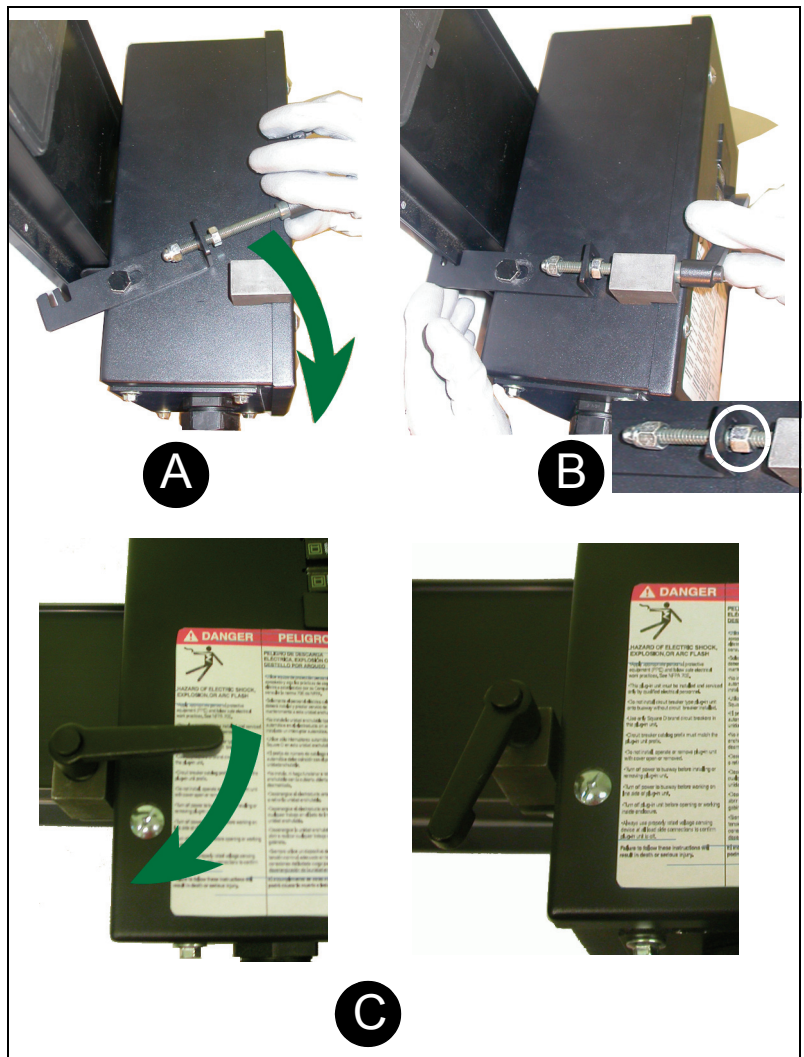
- Align the plug-in unit jaws with the busway plug-in opening (see Figure 6, A). Align using the indicator lines on the busway, located left of the plug-in opening with the left plug-in end wall (Figure 6, B and C). Press the line side of the plug-in unit toward the busway to fully engage the plug-in jaws (Figure 6, C).

Figure 6: Plug-In Location



8. Rotate the swing-mount bracket into the clamping block on the plug-in unit and ensure that the hook engages the busway (see Figure 6, B on page 10 and Figure 7, A and B).
9. Hand tighten the handle of the swing-mount bracket by turning the handle clockwise until the plug-in unit is securely fastened to the busway (Figure 7, B and C). DO NOT overtighten.
10. Tighten the jam nut securely against the bracket after the handle is turned (Figure 7, B).
11. If the swing-mount bracket handle is oriented over the plug-in unit cover, pull the spring loaded handle and rotate it away from the cover (Figure 7, C).

Figure 7: Securing the Plug-In Unit Onto the Busway



12. The plug-in unit is wired at the factory, so no additional wiring is necessary.
13. The PBPQOD plug-in unit is ready for operation.

Removing the Plug-In Unit From the Busway

Standard Application Precautions

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E or CSA Z462.
- This plug-in unit must be installed and serviced only by qualified electrical personnel.
- Before removing a circuit breaker from inside the plug-in unit:
 - Turn off power to the busway.
 - The circuit breaker must be installed in the plug-in before turning on power to the busway.
- Do not install, operate, or remove the plug-in unit with the cover open or removed.
- Always use a properly rated voltage sensing device at all load side connections to confirm the plug-in unit is de-energized.

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

Schneider Electric has carefully reviewed wording in product hazard messages to alert users to potential hazards, provide instructions to avoid those hazards, and state the consequences of not following hazard messages. Workplace safety standards such as NFPA 70E and CSA Z462 clearly state that the proper method to work on or near electrical equipment is with the equipment in a de-energized state.

However, it is recognized that the standards identify exceptions where powering down the equipment is infeasible or actually introduces additional hazards. While elimination of all risk is not possible, in those situations where it can be demonstrated that energized work is necessary, certain tasks, including the installation or removal of Powerbus Circuit Breaker Plug-In Units, may be performed on an energized Powerbus busway only after the user has demonstrated that the application meets the required exceptions. These exceptions are stated in the NFPA 70E, CSA Z462, or other standards as appropriate and employs the work practices and personal protective equipment described in the standard.

NOTE: Drop cord plug-in units are not available for reverse feed applications.

1. Turn the circuit breaker handle to the **OFF (O)** position (see Figure 8, A on page 14).
2. Turn off the power to the busway.
3. Turn the swing-mount bracket handle counterclockwise until it loosens from the busway (see Figure 7, C on page 11).
4. Lift the swing-mount bracket out of the clamping block.
5. Rotate the plug-in unit outward, away from the busway until the plug-in unit jaws are disengaged from the busway plug-in opening.
6. Lift the plug-in unit upward and slide the mounting hook away from the top rail of the busway (see Figure 5 on page 9).
7. Remove the plug-in unit from the busway.
8. Replace the plug-in opening door of the busway (see Figure 4 on page 9).

Removing/Replacing the QOU Circuit Breaker from a Plug-In Unit

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E or CSA Z462.
- This equipment must be installed and serviced only by qualified electrical personnel.
- Do not install the circuit breaker with the OFF (O) position of circuit breaker(s) toward the line side of base connectors.
- Never install a circuit breaker type of plug-in unit onto the busway without a circuit breaker installed.
- Use only Square D brand circuit breaker in this plug-in unit.
- The circuit breaker catalog prefix must match the plug-in unit prefix on the nameplate.
- Do not cross-thread the line side terminal screws when tightening.
- Visually inspect all QOU circuit breaker line side installations to ensure proper and secure connections.
- Visually inspect the inside of the plug-in unit to verify all components are installed and all tools have been removed.
- Never install, operate, or remove the plug-in unit with the cover open or removed.

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

The QOU circuit breaker is factory-installed. However, if for some reason the circuit breaker must be removed and replaced, please follow the instructions below.

Removing the QOU Circuit Breaker

Before removing the QOU circuit breaker, it is necessary to follow all safety precautions and steps in “Removing the Plug-In Unit From the Busway” on page 12.

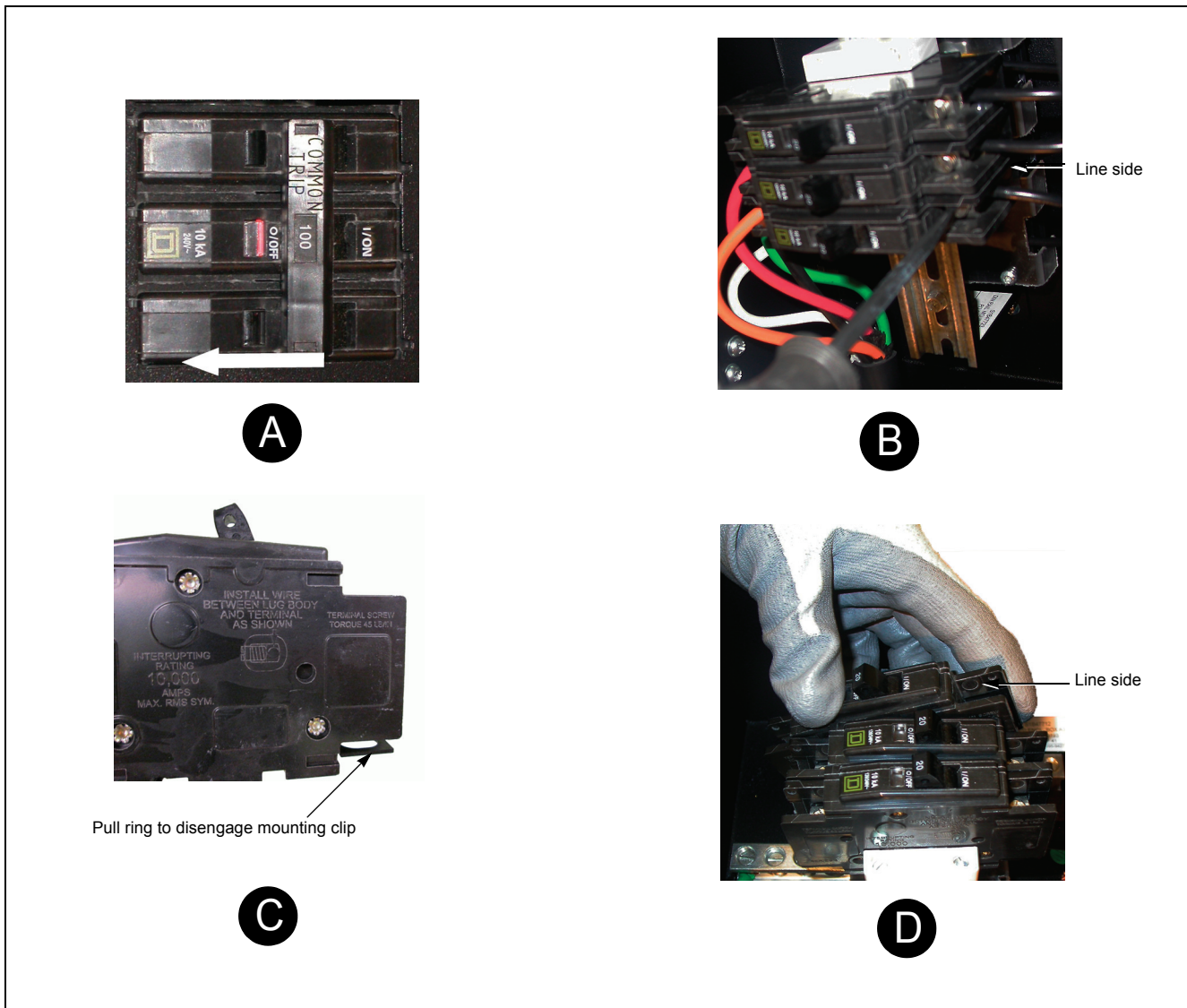
1. Follow steps 1–8 on page 12.
2. Remove the cover screws and open the enclosure cover. Retain the screws for future use (Figure 1 on page 8).
3. Disconnect the load and line cables from the QOU circuit breaker(s), if applicable (Figure 8, B on page 14).
4. Pull on the ring located on the line side of the circuit breaker to disengage the mounting clip that secures the circuit breaker to the DIN rail (Figure 8, C on page 14).
5. Rotate the line side of the circuit breaker to disengage the circuit breaker from the DIN rail (Figure 8, D on page 14).
6. For the installation of a replacement circuit breaker, refer to the section “Replacing the QOU Circuit Breaker” on page 14.

Replacing the QOU Circuit Breaker

NOTE: The circuit breaker must be replaced with a QOU breaker of the same amperage.

1. Position the circuit breaker into the plug-in unit (refer to Figure 8).
 - a. Turn the circuit breaker handle to the OFF (O) position (Figure 8, A).
 - b. Orient the circuit breaker so the line side terminals are facing the line side cables. Hook the load side over the DIN rail and press the line side until the mounting clip snaps into place (Figure 8, D).
 - c. Refer to the appropriate circuit breaker instruction bulletin provided with the circuit breaker.
2. Close the enclosure cover and reinstall the hardware retained from step 2 in the section “Removing the QOU Circuit Breaker” on page 13.

Figure 8: Removing/Replacing the QOU Circuit Breaker

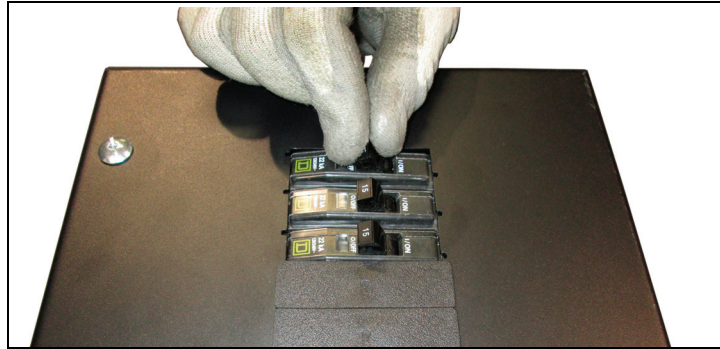


Operation

Turning the Plug-In Unit to the ON (I) and OFF (O) Positions

Operate the plug-in unit circuit breaker(s) in a quick, steady motion (Figure 9).

Figure 9: Turning the Plug-In Unit to the ON (I) and OFF (O) Positions



Accessories and Replacement Parts

Refer to Table 2 for accessories and replacement parts:

Table 2: Accessories and Replacement Parts

Description	Catalog Number
Busway plug-in opening door	PBCVR
Circuit breaker padlock attachment kit	Single pole: QOHPL 2 and 3 pole: QO1HPL
Hookstick accessory ¹	Contact your local Schneider Electric representative
Joint compound	PJC7201
PBQO plug-in unit hookstick operator	PBFO100QO

¹ The hookstick accessory must be factory ordered with the plug-in unit.

Accessories—Padlocking

Standard Application Precautions

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E or CSA Z462.
- This plug-in unit must be installed and serviced only by qualified electrical personnel.
- Padlock the plug-in handle in the OFF (O) position.
- Follow all required lock-out and tag-out operations.
- Do not install, operate, or remove the plug-in unit with the cover open or removed.
- Always use a properly rated voltage sensing device at all load side connections to confirm the plug-in unit is off.

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

General Maintenance

Refer to NEMA bulletin BU 1.1 for maintenance instructions.

When relocating the plug-in unit, inspect the joint compound on the plug-in jaws for contamination. If necessary, replace the joint compound (part number PJC7201).

To order accessories and replacement parts, refer to Table 2 on page 15, or contact your local Schneider Electric representative.

**PBPQOD Plug-In Units with 15–60 A Circuit Breakers
Instruction Bulletin**

ENGLISH

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