Operation

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Qualified Persons

⚠ WARNING

Only qualified persons knowledgeable in the installation, operation, and maintenance of overhead and underground electric distribution equipment, along with all associated hazards, may install, operate, and maintain the equipment covered by this publication. A qualified person is someone trained and competent in:

- The skills and techniques necessary to distinguish exposed live parts from nonlive parts of electrical equipment
- The skills and techniques necessary to determine the proper approach distances corresponding to the voltages to which the qualified person will be exposed
- The proper use of special precautionary techniques, personal protective equipment, insulated and shielding materials, and insulated tools for working on or near exposed energized parts of electrical equipment

These instructions are intended only for such qualified persons. They are not intended to be a substitute for adequate training and experience in safety procedures for this type of equipment.

Read this Instruction Sheet

NOTICE

Thoroughly and carefully read this instruction sheet and all materials included in the product's instruction handbook before installing or operating the remote supervisory PME Pad-Mounted Gear. Become familiar with the Safety Information on page 4 and Safety Precautions on page 6. The latest version of this publication is available online in PDF format at **sandc.com/en/contact-us/product-literature/**.

Retain this Instruction Sheet

This instruction sheet is a permanent part of the remote supervisory PME Pad-Mounted Gear. Designate a location where users can easily retrieve and refer to this publication.

Proper Application

⚠ WARNING

The equipment in this publication is only intended for a specific application. The application must be within the ratings furnished for the equipment. Ratings for remote supervisory S&C PME Pad-Mounted Gear are listed in the ratings table in S&C Specification Bulletin 666-31. The ratings are also on the nameplate affixed to the product. Ratings for this gear are listed on the ratings label on the interior of the doors (right-hand door only for double-door models).

Warranty

The warranty and/or obligations described in S&C's Price Sheet 150, "Standard Conditions of Sale—Immediate Purchasers in the United States," (or Price Sheet 153, "Standard Conditions of Sale—Immediate Purchasers Outside the United States"), plus any special warranty provisions, as set forth in the applicable product-line specification bulletin, are exclusive. The remedies provided in the former for breach of these warranties shall constitute the immediate purchaser's or end user's exclusive remedy and a fulfillment of the seller's entire liability. In no event shall the seller's liability to the immediate purchaser or end user exceed the price of the specific product that gives rise to the immediate purchaser's or end user's claim. All other warranties, whether express or implied or arising by operation of law, course of dealing, usage of trade or otherwise, are excluded. The only warranties are those stated in Price Sheet 150 (or Price Sheet 153), and THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ANY EXPRESS WARRANTY OR OTHER OBLIGATION PROVIDED IN PRICE SHEET 150 (OR PRICE SHEET 153) IS GRANTED ONLY TO THE IMMEDIATE PURCHASER AND END USER, AS DEFINED THEREIN. OTHER THAN AN END USER, NO REMOTE PURCHASER MAY RELY ON ANY AFFIRMATION OF FACT OR PROMISE THAT RELATES TO THE GOODS DESCRIBED HEREIN, ANY DESCRIPTION THAT RELATES TO THE GOODS, OR ANY REMEDIAL PROMISE INCLUDED IN PRICE SHEET 150 (OR PRICE SHEET 153)

Warranty Qualifications

The standard warranty contained in the seller's standard conditions of sale (as set forth in Price Sheet 150) does not apply to remote supervisory PME Pad-Mounted Gear where fuse units, fuse unit end-fittings, holders, refill units, or switch blades of other than S&C manufacture are used in conjunction with S&C SME Mountings. Nor does it apply to remote supervisory PME Pad-Mounted Gear where other than Fault Fiter® Electronic Power Fuses, S&C Switch Blades, or the current-limiting fuses listed in Table 2 of S&C Information Bulletin 660-50 are used in conjunction with Fault Fiter fuse mountings and S&C Holders designed therefore, or when current-limiting fuses are applied other than as set forth in the "Recommended Voltage Ratings" section in S&C Information Bulletin 660-50.

The seller's standard warranty does not apply to major components not of S&C manufacture, such as remote terminal units and communication devices, including hardware, software, resolution of protocol-related matters, and notification of upgrades or fixes for those devices.

Understanding Safety-Alert Messages

Several types of safety-alert messages may appear throughout this instruction sheet and on labels attached to remote supervisory PME Pad-Mounted Gear. Become familiar with these types of messages and the importance of these various signal words:

⚠ DANGER

"DANGER" identifies the most serious and immediate hazards that will likely result in serious personal injury or death if instructions, including recommended precautions, are not followed.

⚠ WARNING

"WARNING" identifies hazards or unsafe practices that can result in serious personal injury or death if instructions, including recommended precautions, are not followed.

⚠ CAUTION

"CAUTION" identifies hazards or unsafe practices that can result in minor personal injury if instructions, including recommended precautions, are not followed.

NOTICE

"NOTICE" identifies important procedures or requirements that can result in product or property damage if instructions are not followed.

Following Safety Instructions

If any portion of this instruction sheet is unclear and assistance is needed, contact the nearest S&C Sales Office or S&C Authorized Distributor. Their telephone numbers are listed on S&C's website **sandc.com**, or call the S&C Global Support and Monitoring Center at 1-888-762-1100.

NOTICE

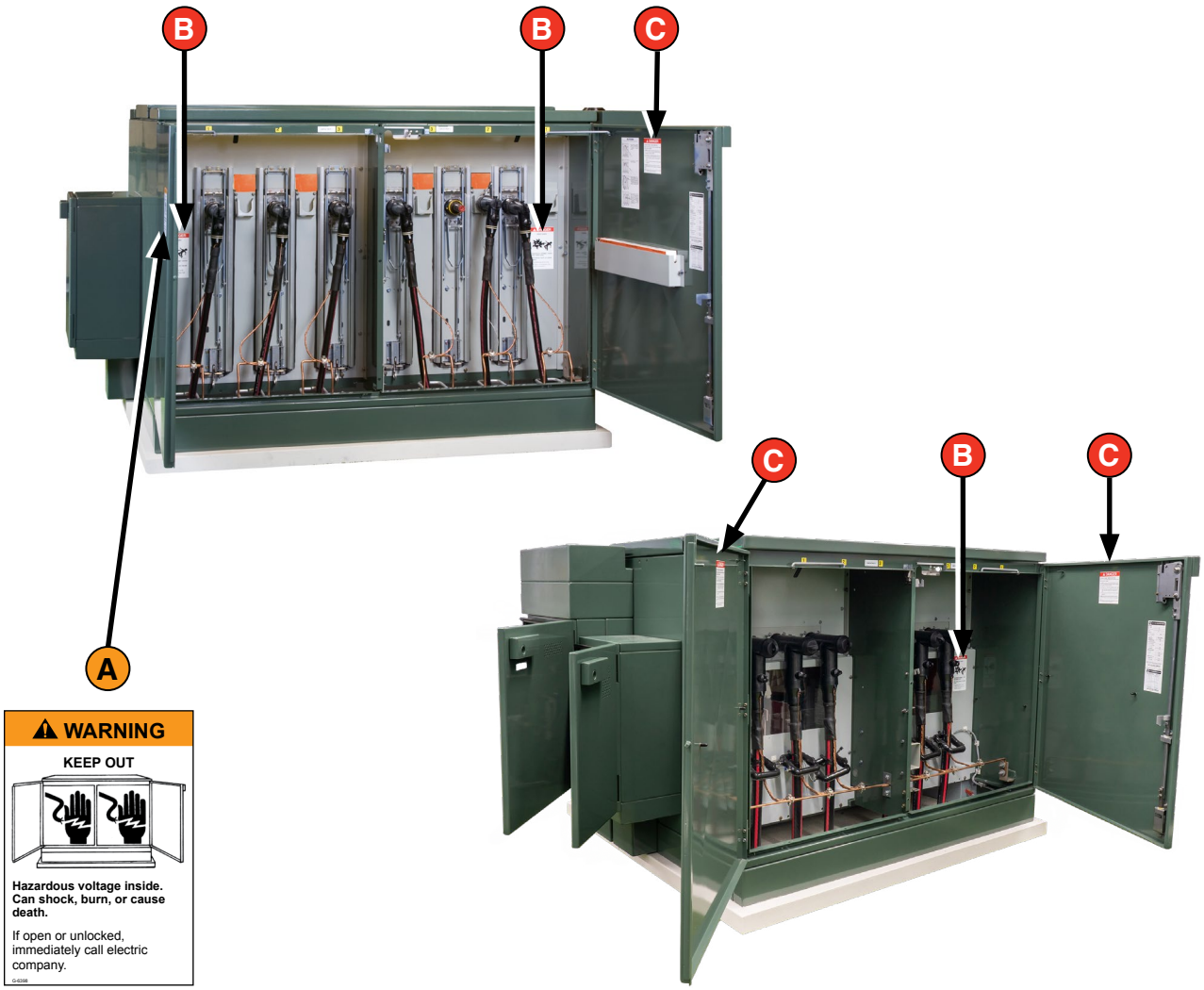
Read this instruction sheet thoroughly and carefully before installing or operating remote supervisory PME Pad-Mounted Gear.

Replacement Instructions and Labels

If additional copies of this instruction sheet are required, contact the nearest S&C Sales Office, S&C Authorized Distributor, S&C Headquarters, or S&C Electric Canada Ltd.

It is important that any missing, damaged, or faded labels on the equipment be replaced immediately. Replacement labels are available by contacting the nearest S&C Sales Office, S&C Authorized Distributor, S&C Headquarters, or S&C Electric Canada Ltd.

Location of Safety Labels



Reorder Information for Safety Labels

Location	Safety Alert Message	Description	Part Number
A	⚠ WARNING	Keep Out. Hazardous voltage inside...	G-6398
B	⚠ DANGER	Keep Away. Hazardous voltage - more than 4000 Volts...	G-6500
C	⚠ DANGER	Hazardous Voltage - more than 4000 Volts...	G-6503

⚠ DANGER

Pad-mounted gear contains high voltage. Failure to observe the precautions below will result in serious personal injury or death.

Some of these precautions may differ from your company's operating procedures and rules. Where a discrepancy exists, follow your company's operating procedures and rules.

1. **QUALIFIED PERSONS.** Access to pad-mounted gear must be restricted only to qualified persons. See the "Qualified Persons" section on page 2.
2. **SAFETY PROCEDURES.** Always follow safe operating procedures and rules.
3. **PERSONAL PROTECTIVE EQUIPMENT.** Always use suitable protective equipment, such as rubber gloves, rubber mats, hard hats, safety glasses, and flash clothing, in accordance with safe operating procedures and rules.
4. **SAFETY LABELS.** Do not remove or obscure any of the "DANGER," "WARNING," "CAUTION," or "NOTICE" labels.
5. **KEY INTERLOCKS.**

- If optional key interlocks were furnished, they must be in place.
- Check the operating sequence of key interlocks to verify proper sequencing.
- After the pad-mounted gear is installed, either: (1) destroy the extra set of keys or (2) make them accessible only to qualified persons. This will maintain the integrity of the key-interlock scheme.
- Key interlocks are not security locks and are not substitutes for padlocks.

6. **OPENING DOORS.** Do not force doors open. Forcing a door open can damage the latching mechanism. If optional key interlocks are provided, correctly position the interlocks so the doors can be opened.
7. **CLOSING AND LOCKING DOORS.**

- Doors must be securely closed and latched, with padlocks in place at all times unless work is being performed inside the enclosure.
- Mini-Rupter Switches have switch-operating-shaft access covers located on the sides of the pad-mounted gear enclosure. They must be closed and padlocked at all times unless the switches are being operated.
- Do not close a door on a TransFuser Mounting in the open position with a fuse in the mounting. The door will strike the fuse pull-ring which will interfere with door closing. The door may be closed if the fuse is removed from the mounting.

8. **ENERGIZED TERMINALS.** Always assume that both sets of power terminals on any Mini-Rupter Switch or fuse are energized unless proved otherwise by test, by visual evidence of open-circuit conditions on both sets of terminals, or by observing that both sets of terminals are grounded.
9. **BACKFEED.** Mini-Rupter Switches and fuses may be energized by backfeed.
10. **DE-ENERGIZING, TESTING, AND GROUNDING.** Before touching any device that is to be inspected, replaced, serviced, or repaired in the high-voltage compartments, always disconnect Mini-Rupter Switches and fuses from all power sources (including backfeed), test for voltage, and properly ground.
11. **TESTING**. Test for voltage on both sets of power terminals of any Mini-Rupter Switch or fuse using proper high-voltage test equipment before touching any device that is to be inspected, replaced, serviced, or repaired in the high-voltage compartments.
12. **GROUNDING.**

- Make sure that the pad-mounted gear enclosure is properly grounded to the station or facility ground.
- After the gear has been completely disconnected from all sources of power and tested for voltage, install suitable grounding cables in all compartments before touching any device that is to be inspected, replaced, serviced, or repaired in the high-voltage compartments.

13. **SWITCH POSITION.**

- Always confirm the **Open/Closed** position of Mini-Rupter Switches by visually observing the position of the switch blades.
- Switches may be energized by backfeed.
- Switches may be energized in any position.

14. **MAINTAINING PROPER CLEARANCE.** Always maintain proper clearance from energized components.
15. **FUSE STORAGE.**

- Always store fuses in a clean, dry location.
- Do not store end-fittings, holders, interrupting modules, or fuses in termination compartments unless the unit is equipped with the optional **Fuse Storage** feature. See S&C Specification Bulletin 666-31 for ordering information.

General

Instruction manuals regarding installation and operation of the pad-mounted gear are included in the Installation and Operation Information Kit provided with each unit of remote supervisory PME Pad-Mounted Gear. Wiring diagrams and a catalog dimensional drawing showing cable-locating and anchor-bolt dimensions is also provided in the information kit. All personnel involved with installation and operation of the gear should be thoroughly familiar with the contents of the kit.

The following instructions cover operation of fuses and manual Mini-Rupter® Switches in remote supervisory PME Pad-Mounted Gear. For operating instructions regarding Type PM Switch Operators or the control-equipment group components, refer to S&C Instruction Sheet 669-515.

Remote supervisory PME Pad-Mounted Gear permits automated switching and provides fault protection for underground distribution systems. This gear features elbow-connected encased components and accommodates separable insulated connectors. See Figure 1 on page 8 and Figure 2 on page 9. Each unit contains the following:

- 600-ampere S&C Mini-Rupter Switches for three-pole live switching of three-phase source circuits
- Type PM Switch Operators to provide power operation of the associated Mini-Rupter Switches
- Control-equipment group components and an interconnecting control wiring base spacer with low-voltage wiring for each switch operator (See S&C Specification Bulletin 666-31 for descriptions of the various control equipment groups.)
- S&C TransFuser™ Mountings—fuse-handling mechanisms with mechanical interlocks (Models available offer a choice of S&C Type SME-20 or SME-4Z Power Fuses, S&C Fault Fiter® Electronic Power Fuses, or a variety of single-barrel current-limiting fuses.)
- A Penta-Latch® Mechanism on doors for access control (The mechanism provides automatic door latching and permits padlocking only when the door is latched closed. Doors can be opened only with a pentahead socket wrench or tool except when hexhead actuators (Catalog Number Suffix "-Bl" or "-B2") are specified.)

A variety of optional features are available for remote supervisory PME Pad-Mounted Gear. The catalog number stamped on the nameplate affixed to the enclosure door is suffixed with letter-number combinations applicable to the gear furnished. Refer to S&C Specification Bulletin 666-31 for descriptions of the optional features.

Figure 1. A remote supervisory Model PME-9 with a Type PM Switch Operator and low-voltage compartment.

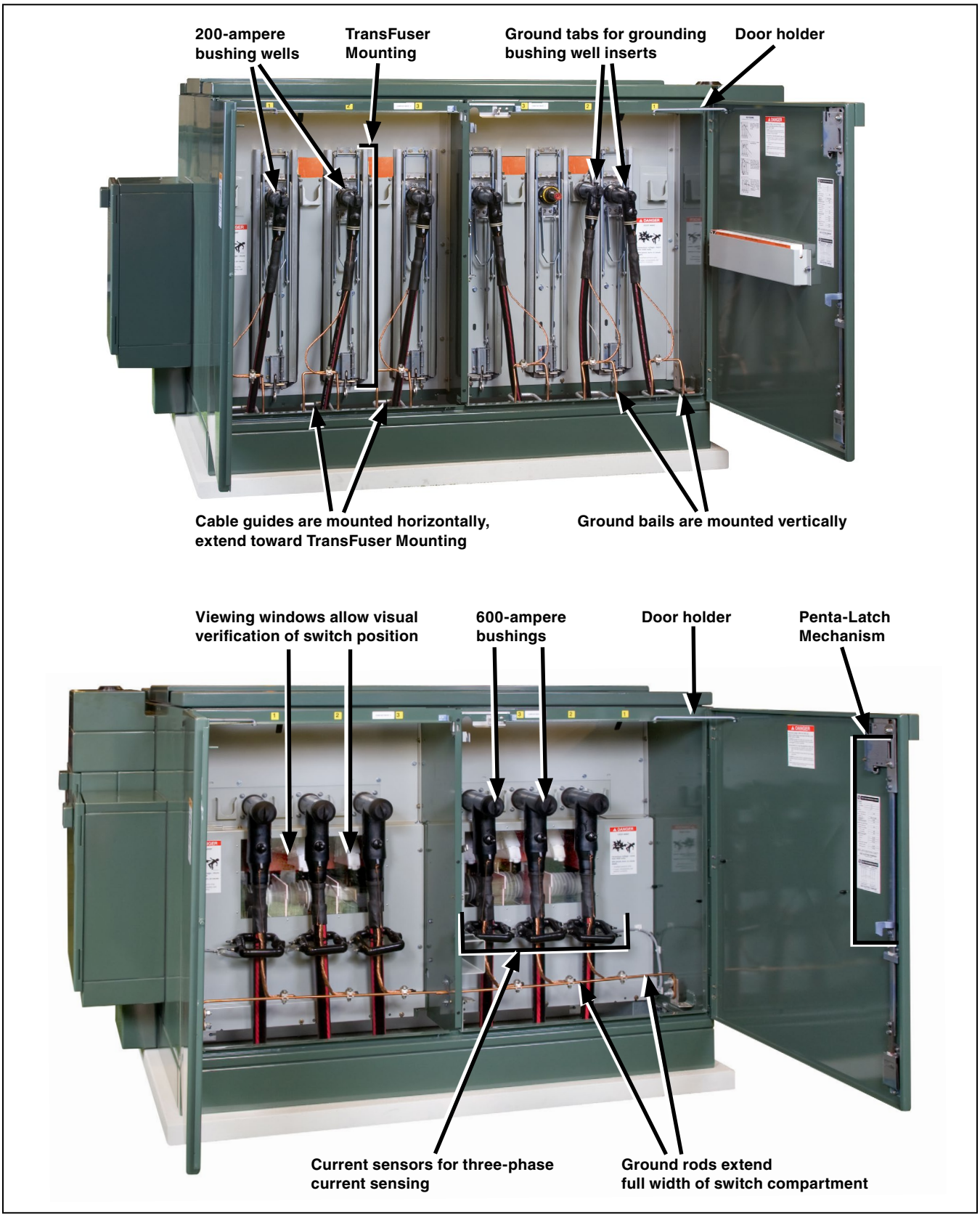


Figure 2. A remote supervisory Model PME-9 showing open-door views of the fuse-termination compartments (above) and switch-termination compartments (below).

⚠ DANGER

When access to high-voltage compartments is required for inspection, service, or repairs, always observe the precautions below. **Failure to observe these precautions will result in serious personal injury or death.**

1. Access to pad-mount gear must be restricted only to qualified persons. See the "Qualified Persons" section on page 2.
2. Always follow safe operating procedures and rules.
3. Before touching any device, always disconnect switches and fuses from all power sources (including backfeed), test for voltage, and properly ground.
4. Always assume both sets of power terminals on any switch or fuse are energized unless proved otherwise by test, by visual evidence of open-circuit conditions on both sets of terminals, or by observing that both sets of terminals are grounded.
5. Test for voltage on both sets of power terminals of any switch or fuse using proper high-voltage test equipment.
6. After the gear has been completely disconnected from all sources of power and tested for voltage, install suitable grounding cables in all compartments.
7. Make sure the enclosure is properly grounded to the station or facility ground. Do not return equipment to service unless such grounds are properly made.

Opening and Closing the Doors

Complete the following steps to open the doors:

STEP 1. To access a side of the enclosure, remove the padlock from the doors.

STEP 2. Insert a pentahead socket wrench or tool (a hexhead socket wrench or tool when catalog number suffix "-B1" or "-B2" is specified) into the latching mechanism. Rotate the wrench or tool 60° counterclockwise to unlatch the doors. See Figure 3.

NOTICE

Do not apply any undue force when attempting to open the doors. The use of undue force may damage the latching mechanism.

STEP 3. Disengage the left-door latching mechanism by turning the latch clockwise. See Figure 4.

STEP 4. Open each door fully and latch the door holders. See Figure 5.

Figure 3. To unlock the doors, turn the pentahead socket wrench 60° counterclockwise against spring resistance until a "click" is heard and the wrench reaches its stop.

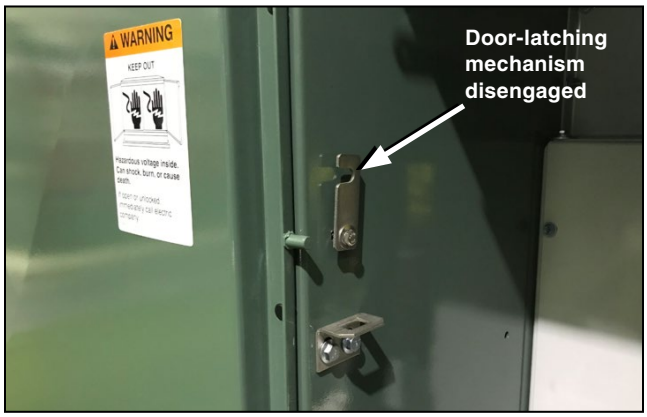


Figure 4. The left-door latching mechanism disengaged.

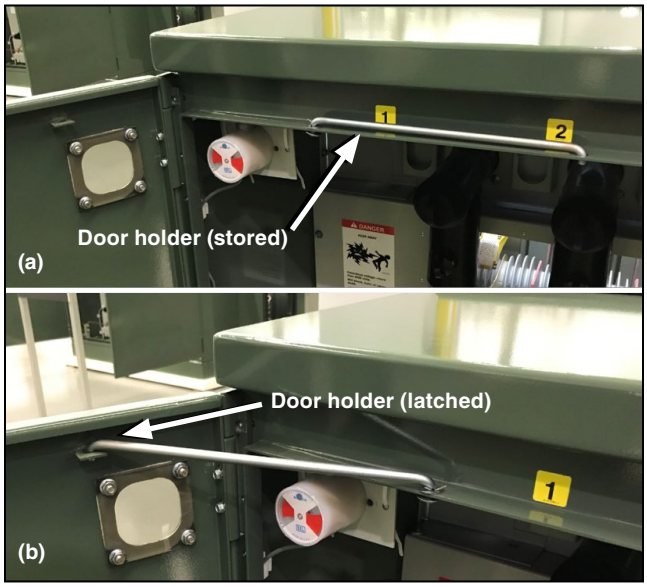


Figure 5. Using the door holder to hold the door open.

STEP 5. To gain access to the other side of the enclosure, repeat Steps 1 through 4 to open the doors.

Complete the following steps to close and lock the doors:

STEP 1. Lift the door holder up to allow the door to swing closed. See Figure 6. Make sure the door holder is placed back in the storage position to allow the door to be fully closed. See Figure 7.

STEP 2. Repeat Step 1 for the other door.

STEP 3. Engage the left-door latching mechanism. See Figure 8.

STEP 4. The right-hand door of the unit is equipped with the Penta-Latch Mechanism, which latches automatically when the door is closed. To close a door equipped with the Penta-Latch Mechanism, place one hand at the midpoint of the door-front near the edge and firmly push the door closed. When the latch points are positively engaged, the spring mechanism will trip to latch the door.

STEP 5. Insert the padlock shackle through the hole in padlock recess and lock the padlock. See Figure 9.

STEP 6. Repeat Steps 1 through 5 for the doors on the other side of the enclosure (if open).

Figure 6. Lift the door holder to allow the door to swing closed.

Figure 7. The door holder placed in the storage position to allow the door to close.

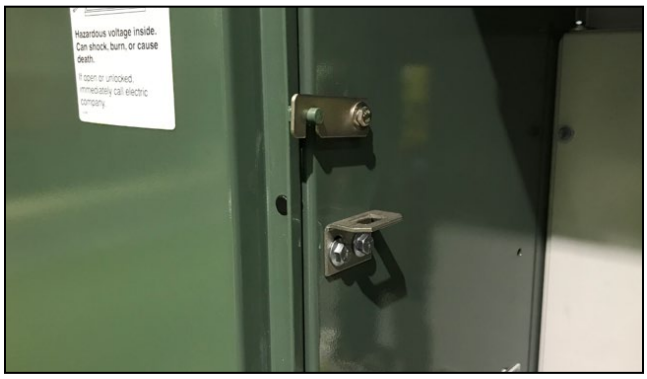


Figure 8. The left-door latching mechanism engaged.

Figure 9. The enclosure doors padlocked.

Operating the Mini-Rupter Switch

The following instructions are for operation of manual Mini-Rupter Switches. For Mini-Rupter Switches operated by Type PM Switch Operators, refer to S&C Instruction Sheet 669-515. Complete ratings for Mini-Rupter Switches as applied in remote supervisory PME Pad-Mounted Gear are available in S&C Specification Bulletin 666-31.

Complete the following steps to operate a Mini-Rupter Switch:

STEP 1. Remove the padlock and open the switch's operating shaft access cover. See Figure 10.

STEP 2. Remove the folding switch operating handle from its storage pocket behind the access cover. See Figure 11. Unfold the handle and slide it onto the hex switch operating shaft. See Figure 12.

Note: The switch-position indicator attached to the hex switch operating shaft rests against a stop in either the **Open** or **Closed** position. Arrows indicate the **Switch Open** or **Switch Closed** position.

STEP 3. Rotate the handle in the appropriate direction to open or close the switch and check the switch position indicator to verify the switch is in the desired position.

STEP 4. Follow the instructions in the "Opening and Closing the Doors" section on page 10 to open the enclosure doors.

Figure 10. The access cover padlock.

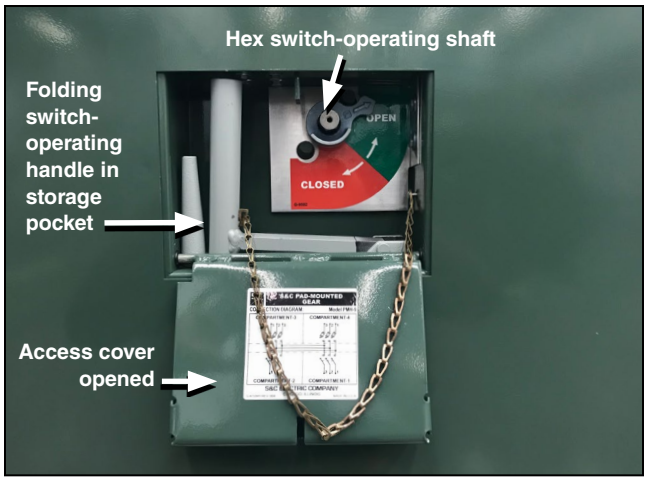


Figure 11. The access cover door is open.

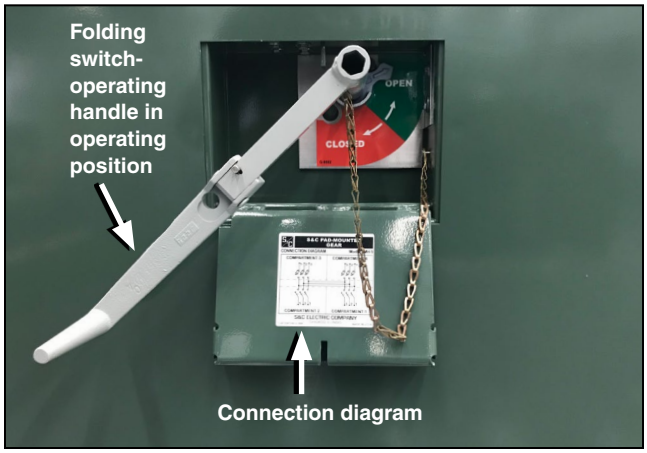


Figure 12. The switch operating handle installed.

STEP 5. Check the physical position of the switch using the viewing window provided in the switch-termination compartment. See Figure 13.

⚠ WARNING

Always confirm the **Open/Closed** position of the Mini-Rupter Switch by visually observing the position of the switch blades. Failure to do so can result in personal injury.

STEP 6. Remove and fold the switch's operating handle and return the handle to its storage position. Then, close and padlock the access cover.

⚠ CAUTION

Do **not** leave the switch's operating shaft access cover unlocked if the gear is left unattended by qualified persons. Failure to do so can result in equipment damage and personal injury.

STEP 7. Follow the instructions in the "Opening and Closing the Doors" section on page 10 to close and lock the enclosure doors

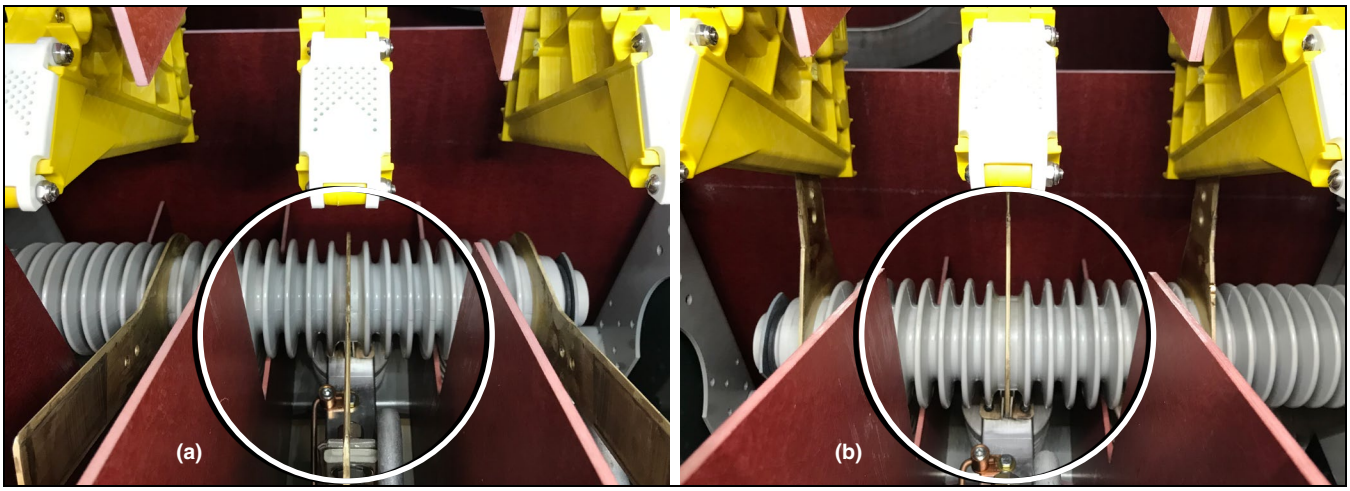


Figure 13. (a) Shows the switch in the Open position, and (b) shows the switch in the Closed position.

Opening the TransFuser™ Mounting

Remote supervisory PME Pad-Mounted Gear is equipped with the unique TransFuser Mounting, a fuse-handling mechanism interlocked with the loadbreak elbow. First, the elbow is removed to interrupt any fuse load. Then, the mechanical interlock is actuated, allowing operation of the TransFuser Mounting mechanism. This permits access to the fuse for quick and easy replacement of blown fuses with a conventional shotgun stick. The fuse is accessible only when it is de-energized and isolated.

⚠ DANGER

The following procedures presuppose the user has supplied and installed loadbreak inserts and loadbreak elbows. Open the Mini-Rupter Switches before proceeding if deadbreak inserts and deadbreak elbows are installed or if company operating procedures and rules do not permit switching with elbows. **Failure to open the switches when deadbreak inserts and elbows are used will result in a flashover and serious injury.**

Complete the following steps to open the TransFuser Mounting:

STEP 1. Open the appropriate fuse termination compartment door and secure it with the door holder. See Figure 14. On double-door models, the adjacent door should be closed and latched to minimize exposure.

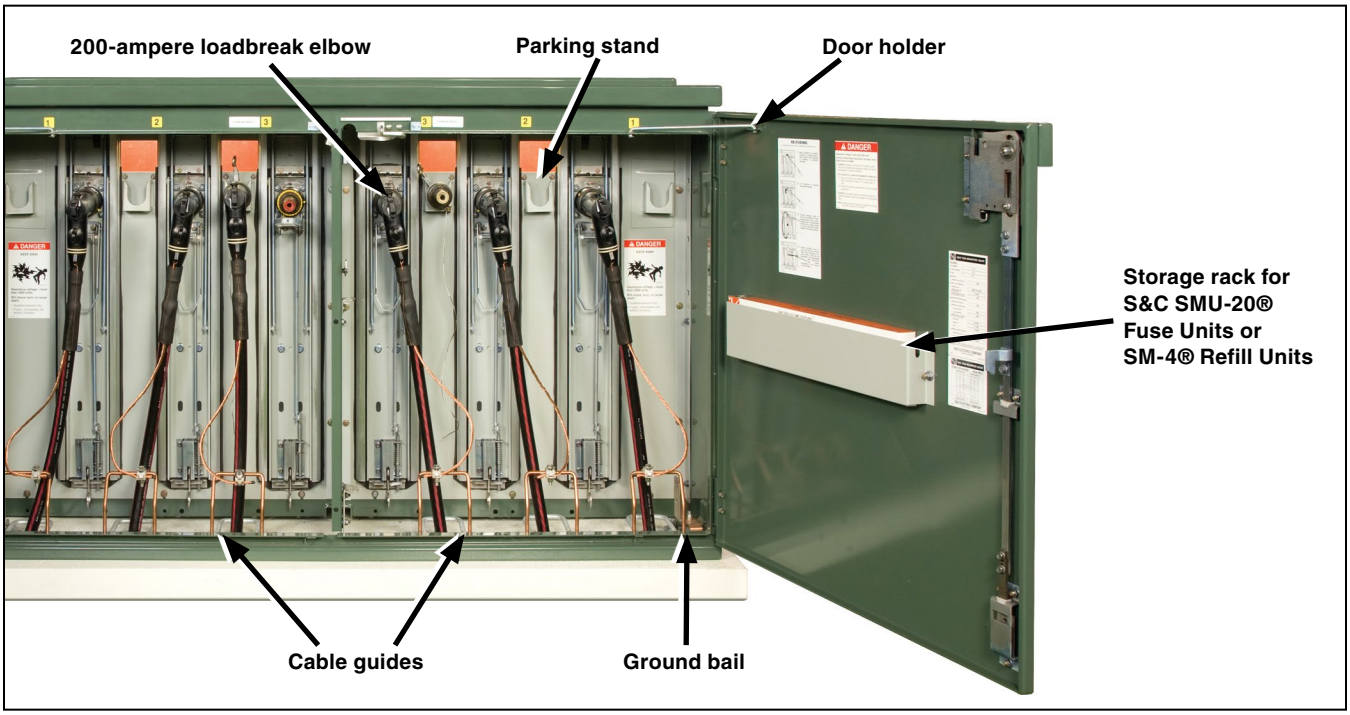


Figure 14. The termination compartment for fuses with elbows installed on 200-ampere inserts in the bushing wells.

STEP 2. Using a shotgun stick, install a portable feedthru or standoff insulator on the parking stand directly above the cable guide of the elbow to be moved. This will ensure the cable will not interfere with the TransFuser Mounting when the elbow is moved. Using the shotgun stick, and following the elbow manufacturer's instructions for loadbreak operation, remove the 200-ampere loadbreak elbow (thus interrupting any load through the fuse to be removed), and move the elbow to the portable feedthru or standoff insulator. See Figure 15.

Figure 15. Removing the loadbreak elbow interrupts any load through the fuse to be removed

⚠ WARNING

When changing fuses, the 200-ampere interface need not be covered because it will be exposed only temporarily. If company operating procedures and rules require it, the interface may be covered with an insulating protective cap without a drain wire. A cap with a drain wire must not be used. **Operation of the TransFuser Mounting mechanism will draw the grounded drain wire inside the component compartment close to energized parts, which can result in a flashover and serious injury.**

⚠ WARNING

If elbows are stored on feedthru or standoff insulators for an extended period of time, cover the 200-ampere interface with an insulating protective cap with a drain wire and connect the drain wire to the ground bail. **Failure to connect the drain wire to the ground bail can result in a flashover, injury, and equipment damage.**

NOTICE

The insulated protective cap and drain wire must be removed before operating the TransFuser Mounting mechanism. **Failure to remove the cap and drain wire will interfere with mechanism operation.**

STEP 3. When the elbow has been moved and mounted on a feedthru or standoff insulator, the TransFuser Mounting mechanism may be operated. Using the shotgun stick, raise the mechanical interlock to unlock the TransFuser Mounting. See Figure 16. This interlock, which cannot be lifted to the **Unlocked** position until the elbow has been removed, guards against gaining access to the fuse while it is carrying current.

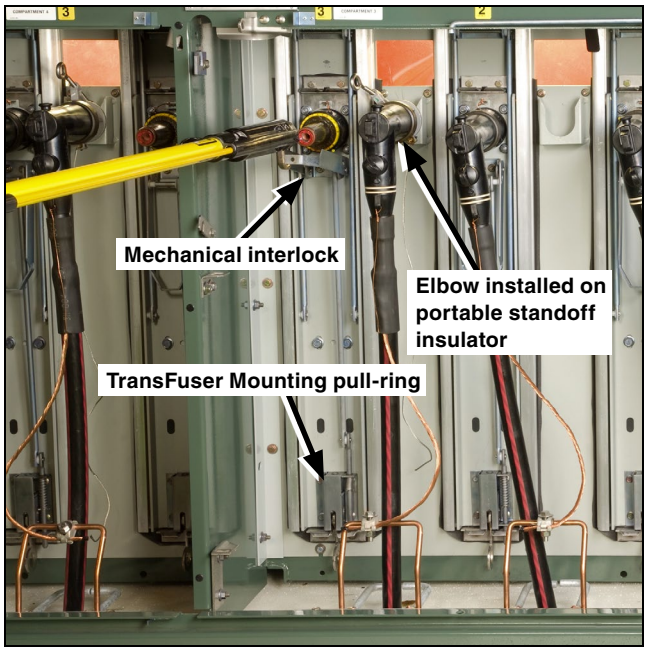


Figure 16. Raising the mechanical interlock to unlock the TransFuser Mounting.

STEP 4. Secure the shotgun stick to the pull-ring at the lower end of the TransFuser Mounting. See Figure 17. With an outward pull, rotate the TransFuser Mounting end for end to expose the fuse. Make sure the mounting is latched before removing the shotgun stick. Then, disengage the shotgun stick from the pull-ring. Using the shotgun stick, push against the top of the mounting to verify it has securely latched. With the TransFuser Mounting latched in the **Open** position, the fuse is de-energized, isolated from high voltage and accessible for removal from the mounting. See Figure 18.

NOTICE

Do not close a door on a TransFuser Mounting in the **Open** position with a fuse in the mounting. **The door will strike the fuse pull-ring, which will interfere with door closing.** The door may be closed if the fuse is removed from the mounting.

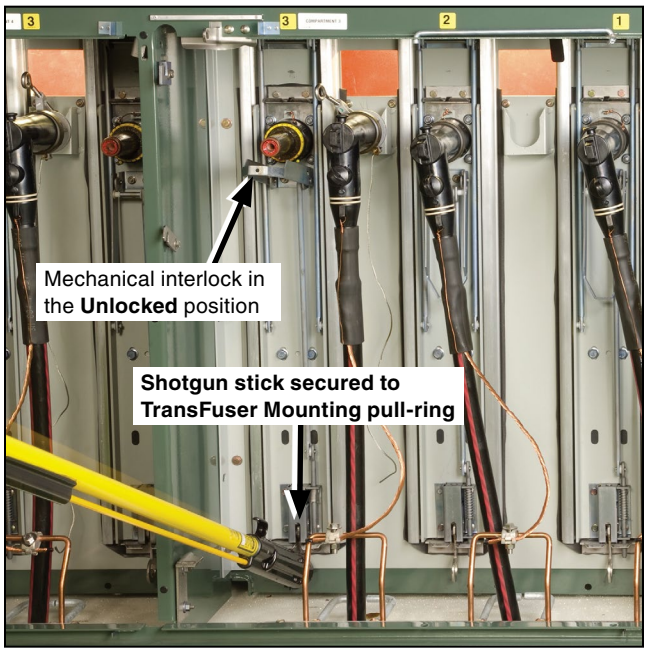


Figure 17. Unlatching (or latching) the Trans-Fuser Mounting in the Closed position.

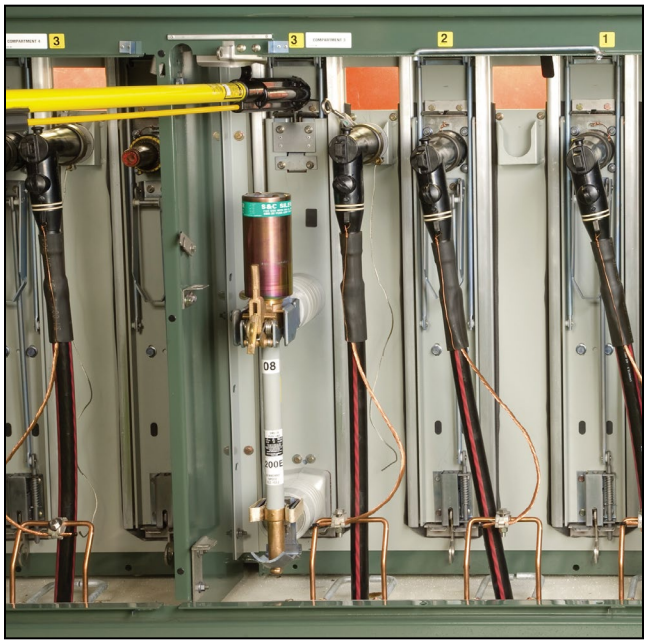


Figure 18. Latching (or unlatching) the TransFuser Mounting in the Open position.

Remote supervisory PME Pad-Mounted Gear is furnished with TransFuser Mountings that accommodate Type SME-20 Power Fuses, Type SME-4Z Power Fuses, or Fault Fiter® Electronic Power Fuses. Fault Fiter Electronic Power Fuse mountings also accommodate a variety of current-limiting fuses.

⚠ WARNING

When selecting current-limiting fuses, the voltage rating of the fuses must conform to the recommendations in S&C Information Bulletin 660-50. **Failure to conform to these recommendations can result in a flashover, injury, and equipment damage.**

Assembling the Fuse

S&C Power Fuses

Install an SMU-20® Fuse Unit into each set of end-fittings, an SM-4 Refill Unit into each holder, or a Fault Fiter fuse interrupting module and control module into each holder in accordance with the instruction sheet furnished with the fuse unit, refill unit, or interrupting module.

Current-Limiting Fuses

S&C Holders for current-limiting fuses are designed for use in pad-mounted gear models that include mountings for Fault Fiter Electronic Power Fuses. These holders will accommodate the current-limiting fuses listed in Table 2 of S&C Information Bulletin 660-50. For instructions on installing current-limiting fuses in current-limiting fuse holders, refer to S&C Instruction Sheet 660-501.

Installing the Fuse in the Mounting

Fault Fiter Electronic Power Fuses rated 25 kV should be installed in their mountings by hand using suitable protective equipment. Install all other fuses as follows:

STEP 1. Secure a shotgun stick tightly to the fuse pull-ring with the fuse oriented so the body of the fuse is below the stick. Grasp the shotgun stick with both hands (approximately 2 feet [61 cm] apart), placing one hand on the shotgun-stick latch mechanism.

STEP 2. Lift the fuse and lower it into the cradle of the fuse mounting.

STEP 3. With the fuse securely seated in the cradle, push the fuse forward to latch it in the **Closed** position. See Figure 19. Disengage the shotgun stick from the fuse.

Figure 19. A fuse lowered into the cradle in preparation for latching to a TransFuser Mounting.

STEP 4. Verify the fuse is properly latched in the fuse mounting. While holding the shotgun stick, push against the fuse holder assembly and pull on the fuse assembly as shown in Figure 20 by locating the ring of the stick in the opening below the pull-ring.

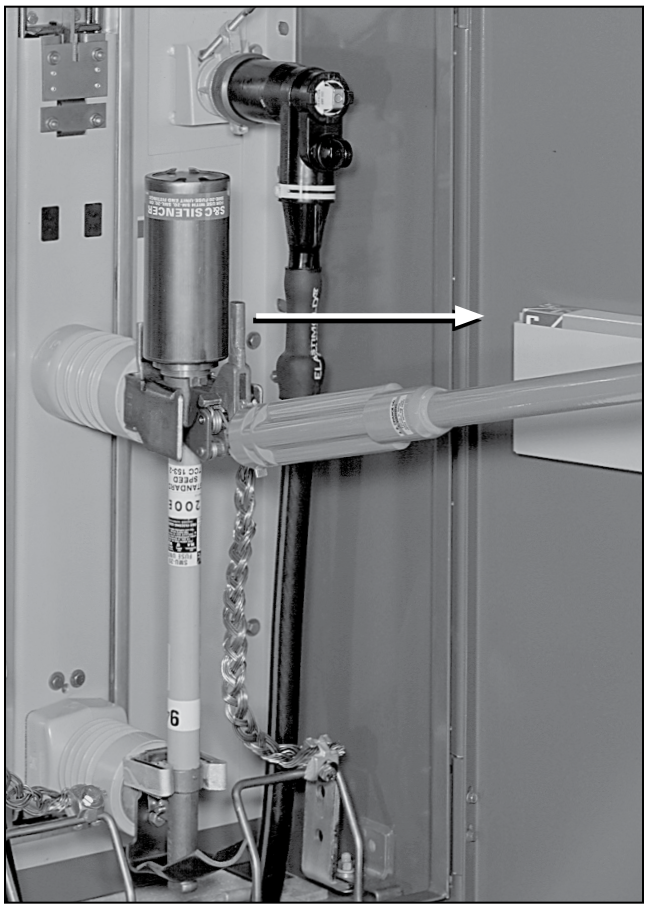


Figure 20. Pull on the fuse assembly by locating the ring of the stick in the opening below the pull-ring

Closing the TransFuser Mounting

After the fuse has been installed or replaced, close the TransFuser Mounting (to energize the fuse) as follows:

STEP 1. Secure a shotgun stick to the pull-ring at the top of the TransFuser Mounting. Be sure not to ratchet the shotgun stick all the way up when securing the pull-ring because it may hinder the movement of the TransFuser Mounting. See Figure 18 on page 17. With an outward pull, rotate the TransFuser Mounting end for end to return the fuse to the component compartment. Make sure the mounting latches in this position before removing the shotgun stick. Then, disengage the shotgun stick from the pull-ring. Using the shotgun stick, push against the bottom of the mounting to verify it has securely latched.

STEP 2. Using the shotgun stick, lower the mechanical interlock to lock the TransFuser Mounting.

STEP 3. If a protective cap was placed on the bushing interface, remove it with the shotgun stick.

STEP 4. Using the shotgun stick, move the elbow from the portable feedthru or standoff insulator to the bushing in accordance with the elbow manufacturer's instructions. Remove the portable feedthru or standoff insulator from the parking stand.

STEP 5. Close and latch the enclosure doors. Pull outward on the Penta-Latch Mechanism cover to verify the door has latched securely and padlock the door.

How to Detect a Blown Fuse

Open the appropriate fuse termination compartment door and secure it with the door holder. On double-door models, the adjacent door should be closed and latched to minimize exposure.

S&C Power Fuses

Observe the blown-fuse target through the viewing windows provided for that purpose. Refer to Figure 21 on page 22, for blown-fuse target locations for S&C Power Fuses:

SME-20 Power Fuses or Fault Fiter **Electronic Power Fuses**—A red blown-fuse target projects from the SME-20 Power Fuse end-fitting or the Fault Fiter fuse holder when the fuse has operated, making it easy to check the fuse condition with the fuse in the **Closed** position. The blown-fuse target retracts when the blown fuse unit or interrupting module is replaced.

SME-4Z Power Fuses—A fluorescent-orange target in the translucent SME-4Z Holder moves to the BLOWN indicator window when the fuse operates, permitting a positive visual check of fuse condition without moving the fuse from its **Closed** position. The target fluoresces when illuminated.

Current-Limiting Fuses

Current-Limiting Fuses with BLOWN FUSE Indicators: To find a blown fuse, gain access to the fuses following the instructions found in the "Fuse Access—Opening" section on pages 14 through 17. A BLOWN FUSE indicator appears at the trunnion end when the fuse has blown.

Current-Limiting Fuses Without BLOWN FUSE Indicators—To find a blown fuse, remove each fuse from its mounting following the instructions in the "Replacing a Blown Fuse" section on page 23. Then, inspect the fuse per the current-limiting fuse manufacturer's recommendations to determine whether it has blown.

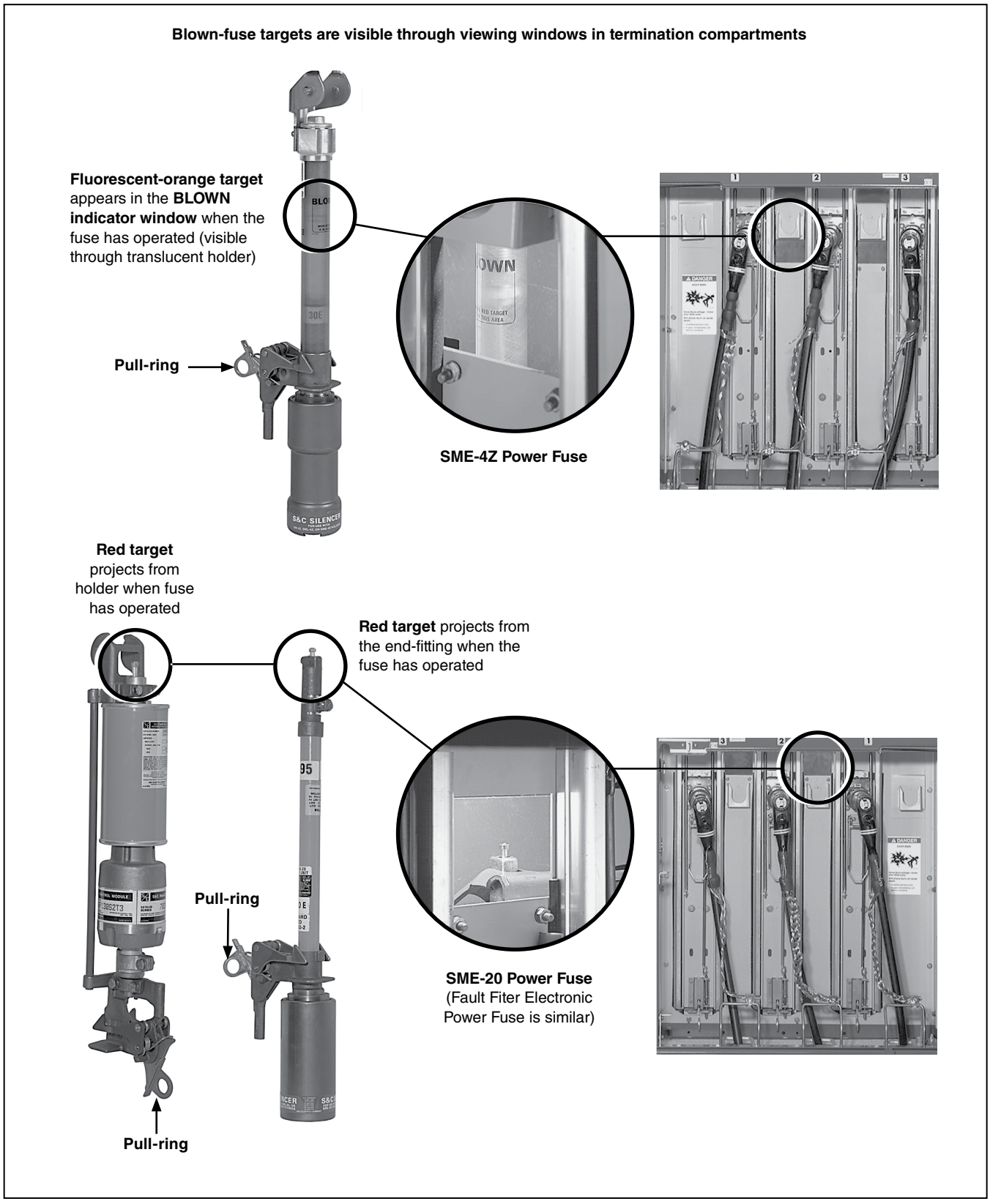


Figure 21. Blown-fuse target locations for S&C Power Fuses used in PME models of Pad-Mounted Gear.

Replacing a Blown Fuse

Complete the following steps to replace a fuse:

STEP 1. Gain access to the blown S&C Power Fuse or suspect current-limiting fuse following the instructions found in the "Fuse Access—Opening" section on pages 14 through 17.

STEP 2. Fault Fiter Electronic Power Fuses rated 25 kV should be removed from their mountings by hand using suitable protective equipment. Remove all other fuses as follows:

(a) Grasp a shotgun stick with both hands (approximately 2 feet [61 cm] apart), placing one hand on the shotgun-stick latch mechanism.

(b) Secure the shotgun stick tightly to the fuse pull-ring. See Figure 22.

NOTICE

Do not permit the end-fitting of an SME-20 Power Fuse to strike the ground during the following removal process. **The blown-fuse target may be damaged or become impacted with dirt and may not operate properly.**

(c) Stand in a normal, upright position facing the shotgun stick. Unlatch the fuse with a short, outward pull on the fuse pull-ring. Then, remove the fuse from its mounting with an upward and outward lifting motion. See Figure 19 on page 18. When the fuse has been removed from the mounting, the TransFuser Mounting may be left with the live parts in the termination compartment and the doors may be closed.

Note: Take the blown fuse back to the service center for proper disposal.

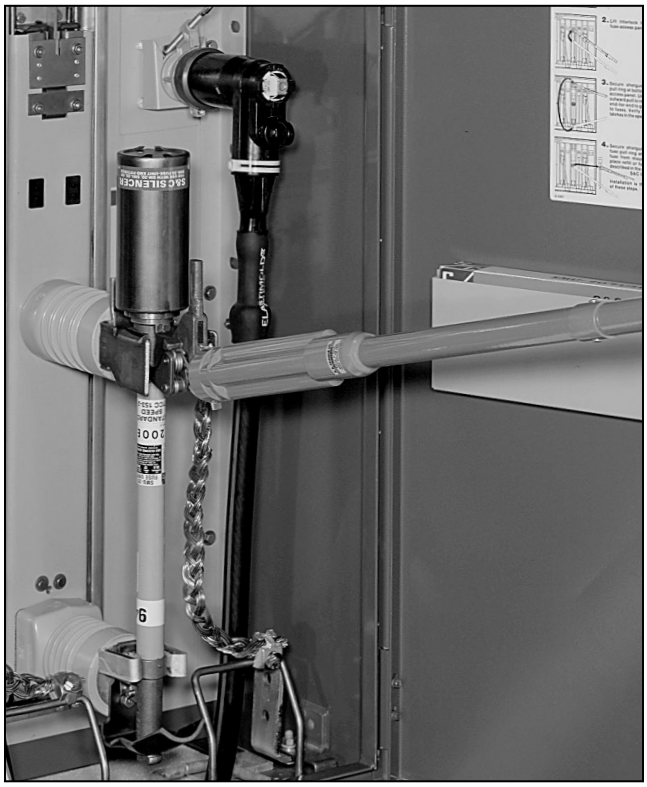


Figure 22. A shotgun stick secured to a fuse pull-ring in preparation for unlatching the fuse.

NOTICE

Always store fuses in a clean, dry location. Do not store fuses in termination compartments unless the unit is equipped with the optional **Fuse Storage** feature. This feature accommodates a number of complete fuse assemblies—three SME Power Fuses, two Fault Fiter Electronic Power Fuses, or two current-limiting fuses—per switch-termination compartment.

For storage, position the fuse with the silencer or trunnion at the bottom, and insert it into the bracket. Then, turn the fuse so the pull-ring is out of the way of the cables.

STEP 3. Install a new fuse unit, refill unit, interrupting module, or current-limiting fuse in the end-fittings or holder as follows:

For S&C Power Fuses: Follow the instructions provided with each fuse unit, refill unit, or interrupting module for removal of blown SMU-20 Fuse Units, SM-4 Refill Units, or Fault Fiter fuse interrupting modules, and for insertion of replacements in the end-fittings or holders.

For current-limiting fuses: For instructions on replacing current-limiting fuses in current-limiting fuse holders, refer to S&C Instruction Sheet 660-501. These holders will accommodate the current-limiting fuses listed in Table 2 of S&C Information Bulletin 660-50.

STEP 4. Install the fuse in its mounting following the instructions found in the “Fusing” section on page 18.

Components

No mechanical maintenance is required for remote supervisory PME Pad-Mounted Gear. However, occasional inspection of the gear and exercising of Mini-Rupter Switches is recommended. Exercising of Type PM Switch Operators once per year in accordance the "Exercising and Maintenance" section in S&C Instruction Sheet 669-515 is also recommended to verify proper functioning of the system.

⚠ DANGER

When access to high-voltage compartments is required for inspection, service, or repairs, always observe the precautions below. **Failure to observe these precautions will result in serious personal injury or death.**

- Access to pad-mounted gear must be restricted only to qualified persons. See the "Qualified Persons" section on page 2.
- Always follow safe operating procedures and rules.
- Before touching any device, always disconnect switches, fuses, and other devices such as voltage sensors from all power sources (including backfeed) and control sources. Test for voltage, and properly ground.
- Always assume both sets of power terminals on any switch or fuse are energized unless proved otherwise by test, by visible evidence of open-circuit conditions on both sets of terminals, or by observing both sets of terminals are grounded.
- Test for voltage on both sets of power terminals of any switch or fuse using proper high-voltage test equipment.
- After the gear has been completely disconnected from all sources of power and tested for voltage, install suitable grounding cables in all compartments.
- For maintenance of non-S&C equipment, follow the manufacturer's instructions.
- Make sure the enclosure is properly grounded to the station or facility ground. Do not return equipment to service unless such grounds are properly made.

Note: Occasionally, low-voltage components may require maintenance. The maintenance of other low-voltage components isolated from high-voltage compartments may be performed under the safety rules for equipment rated 600 Volts or less. If maintenance is to be performed on devices connected to the secondary of a voltage sensor, short-circuit the secondary connections. A separate drawing will be provided with the replacement part explaining how to properly short-circuit the secondary connections.

★ These recommendations may differ from company operating procedures and rules. Where a discrepancy exists, users should follow their company's operating procedures and rules.

Returning Equipment to Service

When returning the equipment to service, the following procedures should be observed:

STEP 1. Make sure the switch and fuse grounding means are removed.

STEP 2. Make sure the Mini-Rupter Switches are in the correct positions (**Open** or **Closed**) as dictated by system circumstances.

STEP 3. Close each door to the termination compartments. Make sure that the associated Penta-Latch Mechanisms are securely latched before energizing the circuit or operating any switching device.

STEP 4. For proper setting of Type PM Switch Operators, refer to the "Final Checks Before Walking Away" section in S&C Instruction Sheet 669-515.

STEP 5. For proper setting of the components furnished with the communication and control equipment group, refer to S&C Instruction Sheet 660-505.

STEP 6. Padlock all doors and switch operating shaft access covers before leaving the installation site, even momentarily. Observe this procedure even in those cases where the gear is accessible only to qualified persons.

Enclosure Finish

The responsibility for ensuring a finish protects the enclosure lies with both the manufacturer and the user. Remote supervisory PME Pad-Mounted Gear is finished with the S&C Ultradur® II Outdoor Finish, which provides lasting protection for the enclosure.

To retain this protection, the user should take periodic corrective action as follows:

STEP 1. Touch up any penetration of the finish to bare metal, such as scratches and abrasions caused by shipping or vandalism, to maintain the original integrity. S&C touch-up finish and primer are available in aerosol spray cans. See S&C Specification Bulletin 666-31 for ordering information. No other finish or primer is approved.

The area to be touched up should be cleaned to remove all oil and grease.

STEP 2. Sand the area, removing any traces of rust that may be present, and make sure all edges are feathered before applying primer.

STEP 3. Provide an occasional simple washdown, such as an automobile would be given, to remove surface contaminants. Use any ordinary mild household detergent solution.

In those cases where the enclosure must be refinished by the user before the finish has weathered—for example, to match other equipment—a special precaution must be taken. The entire surface must be sanded to provide a tooth to bond the new coat to the unusually tough and smooth S&C Ultradur II Outdoor Finish.

When high-voltage dielectric tests are to be performed on remote supervisory PME Pad-Mounted Gear, special precautions should be taken to prevent damage to the voltage sensor(s) and voltage limiter. Refer to S&C Instruction Sheet 591-500.