

Installation and Adjustment

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Introduction

Qualified Persons

WARNING

Only qualified persons who are 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 who is 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 S&C Instruction Handbook before installing or operating your S&C Type SM-4 and SM-5 Power Fuses. Familiarize yourself with the Safety Information and Safety Precautions on pages 4 through 5. The latest version of this publication is available online in PDF format at sandc.com/en/support/product-literature/.

Retain this Instruction Sheet

This instruction sheet is a permanent part of your S&C Type SM-4 and SM-5 Power Fuses. Designate a location where you can easily retrieve and refer to this publication.

Proper Application

WARNING

The equipment in this publication is only intended for a specific fusing applications. The application must be within the ratings furnished for the equipment. Ratings for S&C Type SM-4 and SM-5 Power Fuses are listed in the ratings table in Specification Bulletin 242-31. The ratings are also on the nameplate affixed to the product.

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.)

Safety Information

Understanding Safety-Alert Messages

Several types of safety-alert messages may appear throughout this instruction sheet and on labels and tags attached to your S&C Type SM-4 and SM-5 Power Fuses. Familiarize yourself 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 you do not understand any portion of this instruction sheet and need assistance, contact your 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 Monitoring and Support Center at 1-888-762-1100.

NOTICE

Read this instruction sheet thoroughly and carefully before installing your S&C Type SM-4 and SM-5 Power Fuses.



Replacement Instructions and Labels

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

⚠ DANGER



S&C Type SM-4 and SM-5 Power Fuses operate at 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.

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|---|---|
| <ol style="list-style-type: none"> 1. QUALIFIED PERSONS. Access to the S&C Type SM-4 and SM-5 Power Fuses 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. Always maintain proper clearance from energized components. 3. PERSONAL PROTECTIVE EQUIPMENT. Always use suitable protective equipment, such as rubber gloves, rubber mats, hard hats, safety glasses, arc-flash clothing, and fall-protection, in accordance with safe operating procedures and rules. | <ol style="list-style-type: none"> 4. SAFETY LABELS. Do not remove or obscure any of the "DANGER," "WARNING," "CAUTION," or "NOTICE" labels and tags. Remove tags ONLY if instructed to do so. 5. ENERGIZED COMPONENTS. Always consider all parts live until de-energized, tested, and grounded. 6. MAINTAINING PROPER CLEARANCE. Always maintain proper clearance from energized components. |
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Installation

WARNING

The equipment covered by this publication must be selected for a specific application and it must be assembled, installed, operated, and maintained by qualified persons who are thoroughly trained and who understand any hazards that may be involved. This publication is written only for such qualified persons and is not intended to be a substitute for adequate training and experience in safety procedures for this type of equipment.

The following instructions are for installation and adjustment of S&C Type SM-4 and SM-5 Power Fuse mountings.

Installation

- STEP 1.** Remove the mounting from its shipping crate, taking care not to lift it by the insulators or live parts.
- STEP 2.** Attach the mounting to a supporting frame or structure using appropriate hardware (not included with mounting).

S&C Type SM-4 and SM-5 Power Fuse mountings are factory-assembled and adjusted, and further adjustment should not be required. However, to verify no misalignment of parts has occurred during shipping or installation, the following precautionary checks are recommended:

Disconnect Style

STEP 1. Accurately measure the distance between the contact fingers of the latch-and-upper-contact assembly and the corresponding contact fingers of the hinge-and-lower-contact assembly. See Figure 1. Make sure this dimension is within the tolerance established for Dimension P. If adjustment is necessary, loosen the latch-and-upper-contact assembly mounting bolts and move the assembly toward or away from the hinge-and-lower-contact assembly as required to bring the mounting to within the specified Dimension P limits. Make certain Dimension P distance is maintained between upper and lower contact fingers on both sides of the fuse mounting. Fully tighten the latch-and-upper-contact assembly mounting bolts.

STEP 2. Install a holder—fused as directed in S&C Instruction Sheet 252-525—in the hinge-and-lower-contact assembly and slowly close the holder into the latch-and-upper-contact assembly. Make sure the holder makes an “on-center” approach to the contacts on the latch-and-upper-contact assembly. If adjustment is necessary, slightly loosen the hinge-and-lower-contact assembly mounting bolts and, using the holder as a lever, bring the hinge-and-lower-contact assembly into proper alignment with the latch-and-upper-contact assembly. Recheck to be sure the distance is still within the specified Dimension P tolerance. Retighten the hinge-and-lower-contact assembly mounting bolts.

STEP 3. Move the holder to the **Closed** position and make sure the latch of the latch-and-upper-contact assembly securely engages the holder cap. Then, using a conventional hookstick, move the holder from the **Closed** position to the **Open** position to ensure the latch properly disengages from the holder cap when the pulling is operated.

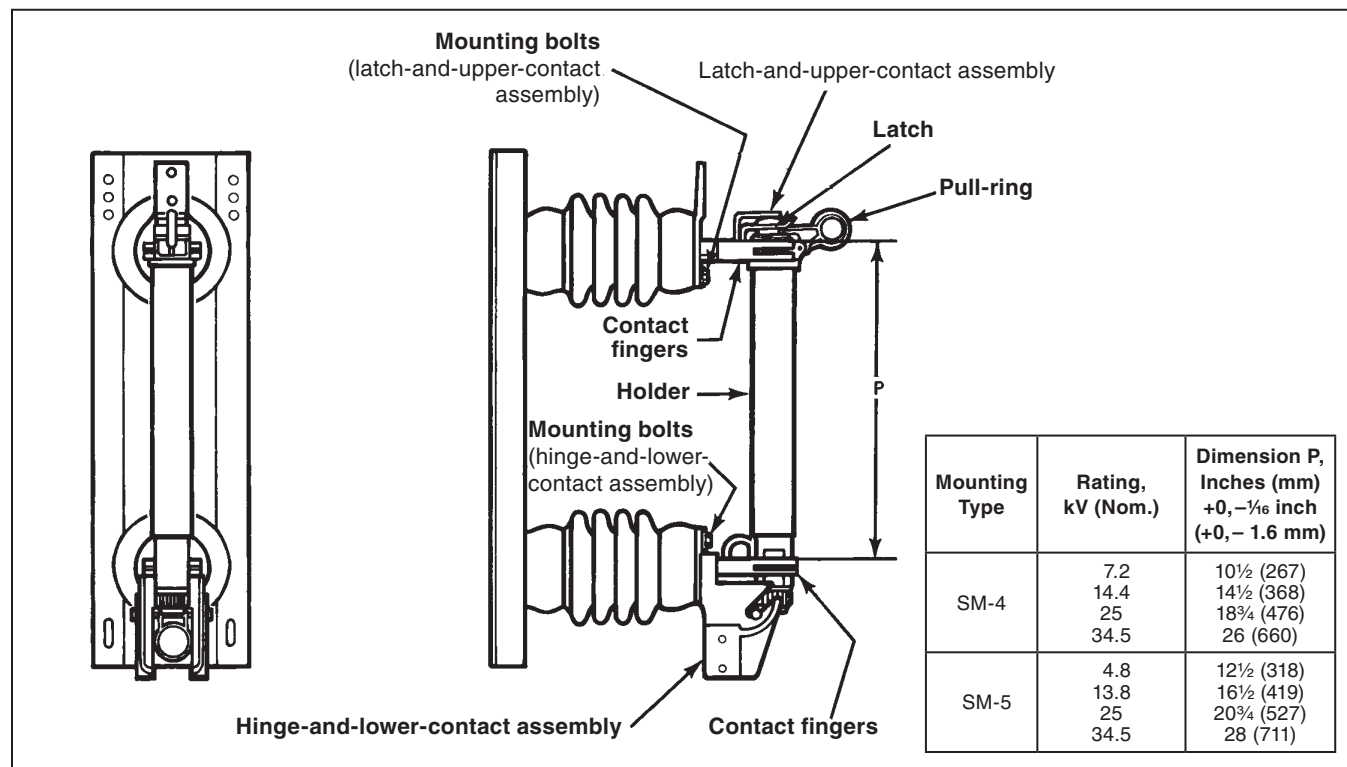


Figure 1. Live-part spacing for S&C Power Fuses—Types SM-4 and SM-5, Disconnect, 180° Opening, Vertical, and Disconnect, 90° Opening, Inverted Styles.

STEP 4. A coating of NO-OX-ID® “A Special” oxidation-inhibiting grease was applied to the stationary-contact surfaces of the latch-and-upper-contact assembly and hinge-and-lower-contact assembly at the factory. See Figure 1 on page 7 for the relative location of these surfaces on the latch-and-upper-contact assembly. Verify the presence of this oxidation-inhibiting grease and that it is still free of contaminants. If necessary, clean the contact surfaces with a nontoxic, nonflammable solvent and apply a coating of NO-OX-ID “A” Contact Lubricant (available from Sanchem Inc.) or a similar nonmetallic-filler oxidation-inhibiting grease.

STEP 5. *If aluminum-alloy body connectors are used to connect the conductors, use the following procedure:*

- (a) Thoroughly wire-brush the current-transfer surfaces of each connector and immediately apply a liberal coating of Penetrox® A (available from Burndy Corporation) to the brushed surfaces.
- (b) Wire-brush each fuse-mounting terminal pad and apply a coating of Penetrox A. Then, bolt the connectors to the terminal pads.
- (c) Prepare the conductors using established procedures and clamp them in their respective connectors.

Non-Disconnect Style

STEP 1. Accurately measure the distance between the contact fingers of the hanger-bracket-and-upper-contact assembly and the corresponding contact fingers of the lower contact assembly. See Figure 2 on page 9. Make sure this dimension is within the distance tolerance established for Dimension P. If adjustment is necessary, loosen the hanger-bracket-and-upper-contact assembly mounting bolts and move the assembly toward or away from the lower contact assembly as required to bring the distance within the specified Dimension P limits. Make sure the Dimension P distance is maintained between the upper and lower contact fingers on both sides of the fuse mounting. Fully tighten the hanger-bracket-and-upper-contact assembly mounting bolts.

STEP 2. Move the clamps on the upper and lower contact assemblies to the **Open** (up) position. Then, position the holder—fused as directed in S&C Instruction Sheet 252-525—so the hanger located on the upper end-fitting of the holder rests on the hanger bracket of the hanger-bracket-and-upper-contact assembly. Make sure the holder is centered naturally with respect to the lower contact assembly. If necessary, loosen the hanger-bracket-and-upper-contact assembly mounting bolts and rotate the assembly as needed to obtain “on-center” entry of the holder into the lower contact assembly. Recheck the Dimension P distance and adjust if necessary. Retighten all mounting bolts.

Next, push the holder into both contact assemblies and move the clamps on the upper and lower contact assemblies to the **Locked** (down) position. The holder, inserted and clamped as described above, should be fully engaged by all contact fingers, and the ferrules on the holder should be seated between the raised projections on the contact fingers.

STEP 3. Verify the presence of the NO-OX-ID “A Special” oxidation-inhibiting grease applied to the contact fingers of the hanger-bracket-and-upper-contact assembly and to the contact fingers of the lower contact assembly and that this grease is still free of contaminants. If necessary, clean the contact fingers with a nontoxic, nonflammable solvent and apply a coating of NO-OX-ID “A” Contact Lubricant or a similar nonmetallic-filler oxidation-inhibiting grease.

STEP 4. *If aluminum-alloy body connectors are to be used to connect the conductors, use the following procedure:*

- (a) Thoroughly wire-brush the current-transfer surfaces of each connector and immediately apply a liberal coating of Penetrox A to the brushed surfaces.
- (b) Wire-brush each fuse mounting terminal pad and apply a coating of Penetrox A. Then, bolt the connectors to the terminal pads.
- (c) Prepare the conductors using established procedures and clamp them in their respective connectors.

● “Mass-anode” type connectors, such as the catalog number 5300 series offered by S&C, designated by the connector manufacturer as being suitable for direct attachment to copper-bearing alloy terminal pads.

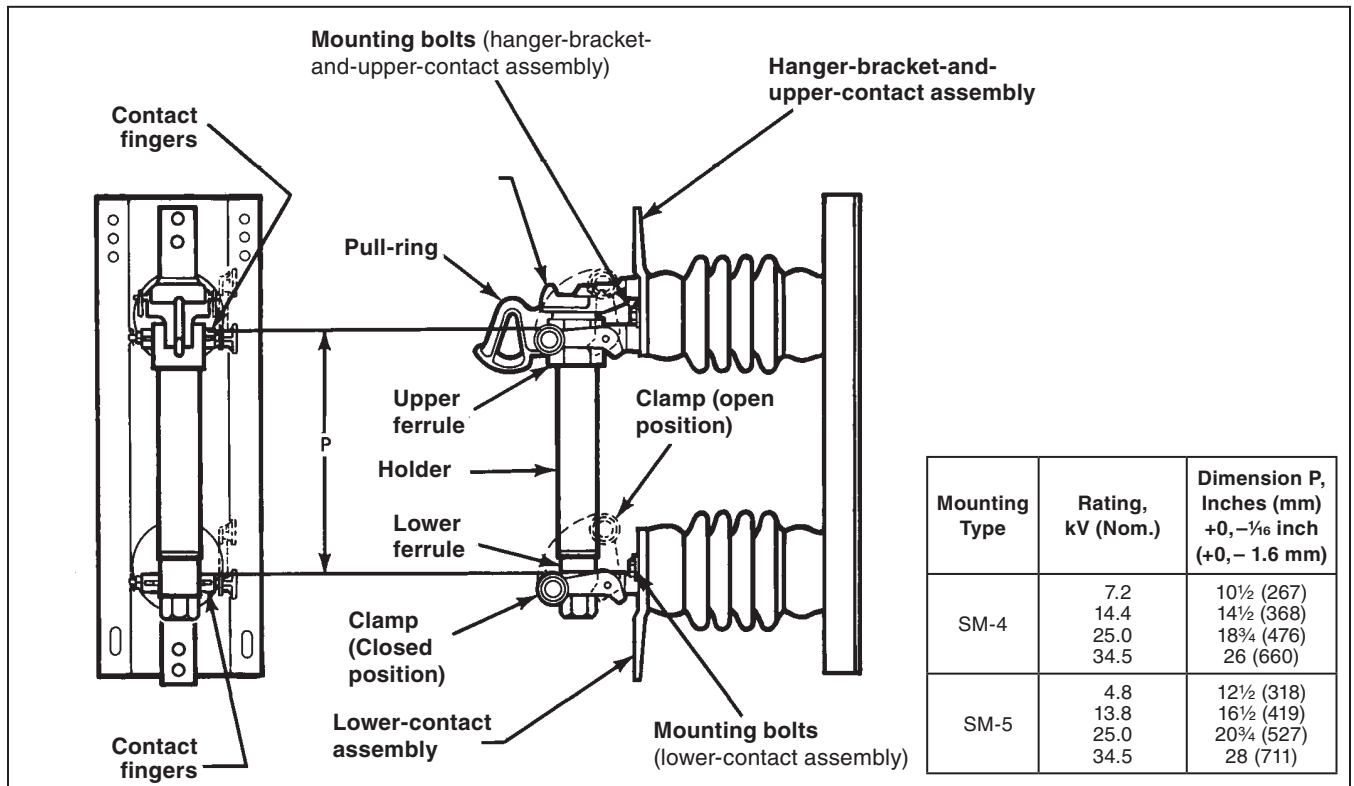


Figure 2. Live-part spacing for S&C Type SM-4 and SM-5 Power Fuses, Non-Disconnect Vertical and Non-Disconnect Upright Styles.