

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-4Z and SM-5S 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-4Z and SM-5S 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-4Z and SM-5S Power Fuses are listed in Specification Bulletin 252-31. The ratings are also on the nameplate affixed to the product.

Warranty Qualifications

With respect to S&C live parts: When installed in submersible enclosures not manufactured by S&C, S&C's standard warranty does not apply unless the enclosures are furnished by an approved supplier and are of watertight construction providing proper electrical clearances and proper space for fuse handling.

The standard warranty contained in the seller's standard conditions of sale (as set forth in Price Sheet 150) also does not apply when fuses not manufactured by S&C are used in conjunction with S&C live parts or when S&C refill units are used in mountings not manufactured by S&C.

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-4Z and SM-5S 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 Support and Monitoring Center at 1-888-762-1100.

NOTICE

Read this instruction sheet thoroughly and carefully before installing your S&C Type SM-4Z and SM-5S 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-4Z and SM-5S 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-4Z and SM-5S 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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Overview

The following instructions are for installation and adjustment of live parts for Disconnect Style S&C Type SM-4Z and SM-5S Power Fuses, Indoor Distribution, and for Disconnect Style S&C Type SM-4Z and SM-5S Power Fuses, Outdoor Distribution, when these live parts are furnished separately.

INFORMATION BULLETIN 252-62:

S&C Type SML Power Fuses

Indoor Distribution (4.16 kV through 34.5 kV)

Minimum Construction Specifications
for Indoor and Outdoor Metal
Enclosures with Fuses

INFORMATION BULLETIN 792-60:

S&C Alduti-Rupter® Switches with Power Fuses

Indoor Distribution (4.8 kV and 13.8 kV)

Minimum Construction Specifications
for Metal Enclosures—Indoor and
Outdoor

INFORMATION BULLETIN 795-60:

S&C Mini-Rupter® Switches with Power Fuses

Indoor Distribution (14.4 kV)

Minimum Construction Specifications
for Metal Enclosures—Indoor and
Outdoor

Complete the following steps to install live parts on Type SM Power Fuses, Disconnect Style:

- STEP 1.** Install insulators (not included with live parts) with center-to-center distances based on the Dimension F measurements noted in Figure 1 on page 8.
- STEP 2.** Mount the latch-and-upper-contact assembly on its respective insulator with the two mounting bolts● Tighten the bolts but leave them loose enough for the slot adjustment.
- STEP 3.** Mount the hinge-and-lower-contact assembly on its respective insulator with the two mounting bolts■. Tighten the bolts but leave them loose enough to permit movement of the assembly within the confines of the mounting holes.
- STEP 4.** Install a holder in the hinge-and-lower-contact assembly and carefully close the holder into the latch-and-upper-contact assembly to bring the two assemblies into alignment.
- STEP 5.** With the holder in the **Closed** position, as described in Step 4, fully tighten the hinge-and-lower-contact assembly mounting bolts.
- STEP 6.** Accurately measure the distance between the contact fingers of the latch-and-upper-contact assembly and the contact fingers of the hinge-and-lower-contact assembly. Move the latch-and-upper-contact assembly toward or away from the hinge-and-lower-contact assembly as required to bring this distance within the specified Dimension P limits. See Figure 1 on page 8. Then, with the holder still in the **Closed** position, fully tighten the latch-and-upper-contact assembly mounting bolts.

Operate the holder by moving it from the **Closed** position to the **Open** position and back to the **Closed** position. Make sure the holder enters the latch-and-upper-contact assembly on center. If necessary, loosen the hinge-and-lower contact assembly mounting bolts and, using the holder as a lever, rotate the hinge-and-lower-contact assembly as required to obtain on-center entry of the holder into the latch-and-upper-contact assembly. Then, retighten the hinge-and-lower-contact assembly mounting bolts.

Make sure the distances between the two sets of contact fingers remain within the specified Dimension P limits on both sides of the contacts. See Figure 1 on page 8. Also, verify the presence of the NO-OX-ID “A Special” oxidation-inhibiting grease (available from Sanchem Incorporated) applied to the contacts at the factory and that this grease 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 Special” grease or a similar nonmetallic-filler oxidation-inhibiting grease.

- STEP 7.** Move the holder to the **Closed** position and verify the latch engages properly with the holder cap. Then, make sure the latch disengages from the holder cap when the pull-ring is operated.
- STEP 8.** *If aluminum-alloy body connectors▲ are used to connect the conductors:*
- 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.
 - Wire-brush each fuse-mounting terminal pad and apply a coating of Penetrox A. Then, bolt the connectors to the terminal pads.
 - Prepare the conductors using established procedures and clamp them in their respective connectors.

NOTE: Installation and adjustment of live parts for parallel mountings is performed in essentially the same manner as described in the foregoing steps except the latch-and-upper-contact assembly and the hinge-and-lower-contact assembly for each holder may require separate adjustments.

● ½-inch galvanized bolts, flat washers, and lockwashers (not furnished).

■ 0/0 galvanized bolts and lockwashers (not furnished).

▲ “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.

Installation and Adjustment

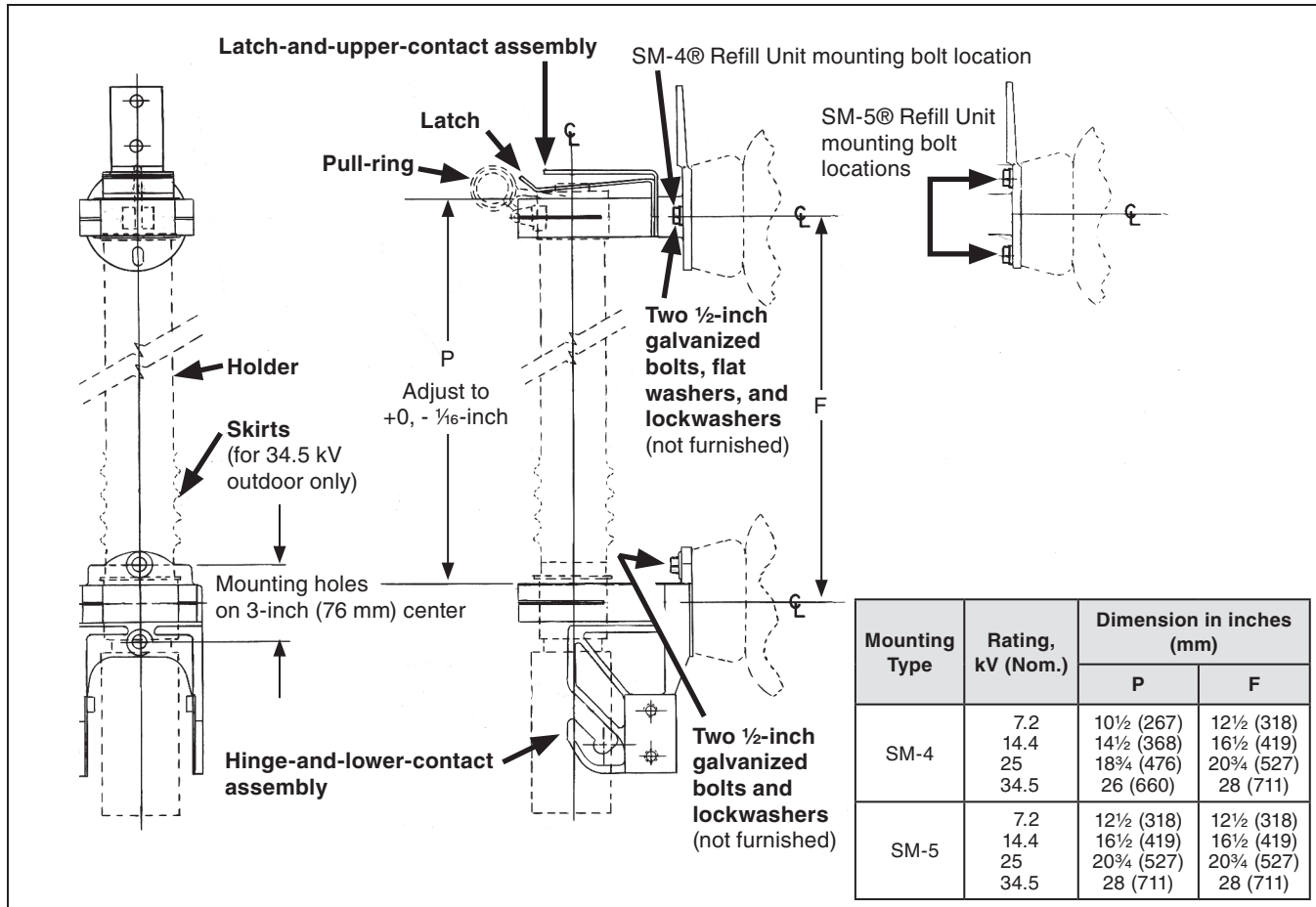


Figure 1. Live-part mounting dimensions for S&C Type SM Power Fuses, Disconnect 45° Opening and Disconnect 180° Opening Styles, Indoor and Outdoor.