Specifications

Conditions of Sale

STANDARD: Seller’s standard conditions of sale set forth in Price Sheet 150 apply.

SPECIAL TO THIS PRODUCT:

INCLUSIONS: S&C Switch Operators—Types AS-1A and AS-10 are high-speed operators especially designed for remote power operation of S&C Alduti-Rupter® Switches. Types AS-1A and AS-10 Switch Operators include the following features:

- Built-in internal decoupling mechanism, operable by integral external selector handle, with padlocking provisions and automatic mechanical locking of output shaft. Laminated safety-plate window permits “visible air-gap” verification of complete disengagement of output shaft.
- Open-close pushbuttons, externally operable, with padlockable cover.
- Built-in nonremovable, foldaway manual operating handle.
- Mechanical position indicators for both switch operator and Alduti-Rupter Switch “open” and “closed” positions (except for S&C Switch Operators—Type AS-10).
- Non-reset electric operation counter.
- Laminated safety-plate window for inspection of built-in internal decoupling mechanism, mechanical position indicators, and operation counter (and position-indicating lamps, if furnished as accessories).
- Foolproof recoupling. Impossible with position-indexing drums to couple the switch operator and the Alduti-Rupter Switch “unsynchronized.”
- Fingertip precision adjustment of output-shaft rotation using self-locking spring-biased cams (except for S&C Switch Operators—Type AS-10, which are factory-adjusted).
- Eight-pole auxiliary switch, coupled to motor, with fingertip precision adjustment of individual contacts using self-locking spring-biased cams.
- Antifriction bearings throughout; tapered roller bearings for all high-torque gear-train shafts.
- Two-pole pull-out fuseholders for space heater and (except for 12-volt dc models) motor circuit. (For 12-volt dc models, a two-pole disconnect switch is used in series with a motor-circuit fuse.)
- Weatherproof, dustproof enclosure, equipped with 120/240-volt ac space heater, factory-connected for 240-volt ac operation. Can readily be field reconnected for 120-volt ac operation.
- Tamper-resistant design—welded enclosure; baffled louvers; gasketed, flanged door openings; cam-action door latch; provisions for padlocking.
- Foul-weather accessibility to interior of enclosure. Access is by door rather than by removal of entire enclosure.

S&C Switch Operators, Catalog Numbers 38854R4, 38855R4, and 38856R4 include 12-volt dc battery and constant-burden battery charger for connection to an S&C 30-Volt-Ampere Potential Device or other 120-volt, 60-hertz source.

EXCLUSIONS: Switch operators do not include the operating linkage between the switch operator and the high-voltage switch.

★ S&C Switch Operators—Types AS-1A and AS-10 are manufactured in accordance with a quality system certified to ISO 9001.
SPECIFICATION DEVIATIONS: Various accessories are available as listed in the table on page 4.

S&C Switch Operators—Types AS-1A and AS-10 utilizing 115-volt 60-hertz or 230-volt 60-hertz motor and control voltage are available with optional source-transfer control compatibility as indicated in the applicable table on page 4. This accessory permits use of the switch operator—along with a second switch operator and an S&C Micro-AT® Source-Transfer Control in Weatherproof Enclosure to provide automatic source transfer for primary-selective overhead distribution systems. Switch operators equipped for compatibility with the Micro-AT Source-Transfer Control in Weatherproof Enclosure include the following features:

- A microswitch and actuator which monitor the position of the switch operator internal decoupling mechanism.
- Auxiliary switch contacts that determine whether an opening or closing operation is required when the source-transfer control signals the need for an operation.
- An auxiliary contact which operates coincidentally with the switch operator opening contactor and closing contactor to assure that once an operation is initiated by the source-transfer control, that operation will be completed before any other operations can be performed.

S&C Switch Operators—Type AS-1A, when ordered to replace a manual operating handle or an S&C Switch Operator—Moto-Draulic Type with separate gearbox (originally furnished to operate rotating-type operating mechanisms), require a flexible coupling to connect switch operator output shaft to vertical operating pipe of high-voltage switch. Order flexible coupling matched to size of vertical operating pipe—Catalog Number SA-35629-5, SA-35629-6, SA-35629-3, or SA-35629-4 for 1½" IPS, 2" IPS, 2¼" IPS, or 3" IPS, respectively.

How to Order

1. Obtain the catalog number of the desired switch operator from page 3.
2. If accessories are desired, obtain the suffix letter of the desired accessory from the table on page 4. Add the suffix to the switch catalog number.

*For example, for a 115-volt 60-Hz Type AS-1A Switch Operator for use with an Alduti-Rupter Switch—Rotating-Type Operating Mechanism, complete with space heater thermostat and position-indicating lamps, specify “Catalog Number 38847R4-DKM.”*

A Note on Operating Speed

S&C Switch Operators—Types AS-1A and AS-10 are high-speed operators, having maximum operating times as specified in the table on page 3.

For power operation of S&C Alduti-Rupter Switches—Outdoor Distribution, this high operating speed is required to provide sufficient moving-contact velocity in the interrupters to ensure full interrupting capability and long operating life. The operators’ high operating speed also provides adequate closing velocity to meet duty-cycle fault-closing ratings for the applicable switches as listed in Specification Bulletin 761-31.
### SWITCH OPERATORS—Types AS-1A and AS-10 (For S&C Alduti-Rupter Switches)

<table>
<thead>
<tr>
<th>Application</th>
<th>Voltage Rating of High-Voltage Device</th>
<th>Switch Operator Type</th>
<th>Motor and Control Voltage</th>
<th>Operating Lever Sector</th>
<th>Maximum Operating Time, Seconds</th>
<th>Minimum Locked-Rotor Torque at Rated Control Voltage, Inch-Lbs.</th>
<th>Accelerating Current, Amperes</th>
<th>Catalog Number</th>
<th>Schematic Wiring Diagram Drawing Number</th>
<th>Page Reference for Dimensional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S&amp;C Alduti-Rupter Switches—Rotating-Type Operating Mechanism</strong></td>
<td>7.2 kV thru 46 kV</td>
<td>AS-1A</td>
<td>12 Vdc, 48 Vdc, 125 Vdc, 115 V 60 Hz, 230 V 60 Hz</td>
<td>—</td>
<td>.75</td>
<td>18 500</td>
<td>—</td>
<td>38854R4</td>
<td>CDR-3127R1</td>
<td>5</td>
</tr>
<tr>
<td><strong>S&amp;C Alduti-Rupter Switches—Reciprocating-Type Operating Mechanism</strong></td>
<td>7.2 kV thru 46 kV</td>
<td>AS-10</td>
<td>12 Vdc, 48 Vdc, 125 Vdc, 115 V 60 Hz, 230 V 60 Hz</td>
<td>RH</td>
<td>.75</td>
<td>18 500</td>
<td>—</td>
<td>38856R4</td>
<td>CDR-3128R1</td>
<td>6</td>
</tr>
</tbody>
</table>

① Applicable for Type AS-10 Switch Operators only. Operating lever travels in left-hand or right-hand sector as indicated, viewed from front (door side) of switch operator. Operating lever in the “up” position corresponds to the “closed” position of the Alduti-Rupter Switch.

② Refer to the “S8” or “S9” Standard Minor Modification appearing on the applicable Alduti-Rupter Switch erection drawing bill of material when selecting an “RH” or “LH” switch operator. Where bracket SA-39154 or SA-39155 is indicated, specify an “RH” switch operator; where bracket SA-39868 is indicated, specify an “LH” switch operator. Contact your nearest S&C Sales Office.

③ Based on minimum battery and external control wire size requirements specified in S&C Data Bulletin 769-60; operating time will be less if larger-than-minimum battery size and/or external control wire size is utilized.

★ Type AS-1A Switch Operators are normally furnished with an output shaft rotation of 90 degrees counterclockwise to open the associated Alduti-Rupter Switch. Please review the Alduti-Rupter Switch erection drawing to verify that this is the correct direction of rotation for this application. If opposite direction of rotation is required, please so indicate when ordering the switch operator.

This switch operator has output characteristics equivalent to a linear actuator having a stalled-force rating of 4000 pounds (for 12-volt dc models), 4600 pounds (for 48-volt dc and 125-volt dc models), or 3800 pounds (for 115-volt 60-hertz and 230-volt 60-hertz models); a stroke length of 9 inches; and a typical operating speed of 12 inches per second at mid-stroke.

適用於型號 AS-10 輸送器操作員的一種。操作桿會在“上”位置，對應於 Alduti-Rupter 輸送器的“閉合”位置。

② 參考附錄“S8”或“S9”標準次級改裝，出現於相應的 Alduti-Rupter 輸送器整體圖表的材料，選擇“RH”或“LH”操作員。當括號 SA-39154 或 SA-39155 被指示，指定“RH”操作員；當括號 SA-39868 被指示，指定“LH”操作員。聯繫您最近的 S&C 營業部。

③ 基於最小電池和外部控制線線徑標準要求，規定在 S&C 資料公報 769-60 中；操作時間將減少，如果使用大於最小電池線徑和/或外部控制線徑。

★ 型號 AS-1A 輸送器操作員通常配備有一個輸出軸的旋轉。90 度反時針，以打開相關的 Alduti-Rupter 輸送器。請參照 Alduti-Rupter 輸送器整體圖表確認此為適用於此應用的正確旋轉方向。若反方向的旋轉是必要的，請在我們定貨時告知操作員。
### ACCESSORIES FOR SWITCH OPERATORS—Types AS-1A and AS-10

<table>
<thead>
<tr>
<th>Item</th>
<th>Suffix to be Added to Switch Operator Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deletion of Externally Operable Open-Close Pushbuttons</td>
<td>-J</td>
</tr>
<tr>
<td>Space Heater Thermostat</td>
<td>-K</td>
</tr>
<tr>
<td>Key Interlock with Switch, locks Alduti-Rupter Switch open and disconnects motor-control circuit</td>
<td>-L</td>
</tr>
<tr>
<td>International Crating. Wood products used in the packaging are either hardwood or certified by the wood supplier as being &quot;heat treated&quot; (kiln dried) to a core temperature of 133°F (56°C) for a minimum of 30 minutes</td>
<td>-L71</td>
</tr>
<tr>
<td>Position-Indicating LED Lamps (one red, one green), mounted inside the enclosure</td>
<td>-M</td>
</tr>
<tr>
<td>Extra Auxiliary Switch (individually adjustable contacts), 4-PST (coupled to motor)</td>
<td>-Q</td>
</tr>
<tr>
<td>Source-Transfer Control Compatibility. Permits use of switch operator with S&amp;C Micro-AT Source-Transfer Control in Weatherproof Enclosure</td>
<td>-U1</td>
</tr>
<tr>
<td>Duplex Receptacle and Convenience-Light Lampholder with Switch</td>
<td>-V</td>
</tr>
<tr>
<td>Extra Auxiliary Switch (individually adjustable contacts), 8-PST (coupled to Alduti-Rupter Switch)</td>
<td>-W</td>
</tr>
<tr>
<td>Remote-Control Blocking Switch, prevents remote operation of switch operator when the protective cover for the externally mounted open-close pushbuttons is open</td>
<td>-Y</td>
</tr>
<tr>
<td>Extra Auxiliary Switch (individually adjustable contacts), 12-PST (coupled to Alduti-Rupter Switch)</td>
<td>-Z</td>
</tr>
</tbody>
</table>

1. Type AS-1A and Type AS-10 Switch Operators specified with source-transfer control compatibility (suffix "-U1") cannot be furnished with key interlock with switch (suffix "-L"), extra auxiliary switch coupled to motor (suffix "-Q"), or remote-control blocking switch (suffix "-Y").
2. Required for some automatic-transfer and sectionalizing schemes.

### PARTS

<table>
<thead>
<tr>
<th>Constant-Burden Battery Charger For Charging Battery Rated</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 volts dc</td>
<td>MA-1050</td>
</tr>
</tbody>
</table>

1. The S&C Constant-Burden Battery Charger is intended for use with S&C Switch Operators—Types AS-1A and AS-10 ordered for 12-volt dc operation with an automotive-type battery rated 80 ampere-hours or less, such as a Gould Maintenance-Free Truck Battery, part number C27-GNB. Although this battery charger is specifically designed for use with an S&C 30-Volt-Ampere Potential Device as its power supply, other 120-volt, 60-hertz sources may be utilized.

3. Available as an optional accessory only with Type AS-1A and Type AS-10 Switch Operator Catalog Numbers 38847R4-D, 38847R4-E, 38852R4-D, 38852R4-E, 38853R4-D, and 38853R4-E, utilizing 115-volt 60-hertz or 230-volt 60-hertz motor and control voltage.

4. The 8-PST extra auxiliary switch (suffix "-W") cannot be furnished if the 12-PST version (suffix "-Z") is specified, and vice versa.
Type AS-1A Switch Operators

12-volt dc switch operator includes battery compartment with separate access door, and with conduit-entrance area located on the left.

1 1/8 IPS 2 1/2 IPS
1 3/16 IPS 2 3/16 IPS
1 1/2 IPS

5 x 5 AREA FOR CONDUIT ENTRANCE (LOCATED ON FAR SIDE FOR 12-VOLT DC SWITCH OPERATOR*)

180° DOOR OPENING

1 1/8 DIA. HOLES (ONE SET TO BE SELECTED FOR MOUNTING)

12 x 12 x 1/4 REMOVABLE CONDUIT PLATE*

* 12-volt dc switch operator includes battery compartment with separate access door, and with conduit-entrance area located on the left.
Type AS-10 Switch Operators

SELECTOR HANDLE (IN OPERATING POSITION)

SELECTOR HANDLE (IN DECOUPLED STORAGE POSITION)

LIFTING HOLES

5 x 5 AREA FOR CONDUIT ENTRANCE (LOCATED ON FAR SIDE FOR 12-VOLT DC SWITCH OPERATOR*)

MANUAL OPERATING HANDLE (IN CRANKING POSITION)

12-volt dc switch operator includes battery compartment with separate access door, and with conduit-entrance area located on the left.