

Specifications

Conditions of Sale

STANDARD: The seller's standard conditions of sale set forth in Price Sheet 150 apply, except as modified under the "Warranty Qualifications" section on page 2.

SPECIAL TO THIS PRODUCT:

INCLUSIONS: Convertible disconnects are available in a wide variety of styles and mounting configurations.

Three-pole integer-style disconnects are pre-engineered, preassembled, and preadjusted—all three poles are mounted on a one-piece base with necessary electrical clearances built in. The complete three-pole disconnect assembly and its operating mechanism are provided as a single package that includes a removable lifting means, shipped in place, for convenient rigging and hoisting during installation.

Convertible disconnects are also available in three-pole group-operated designs that feature pole-units mounted on individual bases. Disconnects in these styles are especially designed for installation on substation structures or on overhead lines not suited to integer-style disconnect configurations.

All disconnects are provided with an operating mechanism that includes:

- Three disconnect poles (Integer-style disconnects are shipped complete with an interphase drive, factory assembled on a single base.)
- A detailed erection drawing (ED) of the applicable mounting arrangement
- All required interphase and vertical operating pipe, as specified on the ED (Refer to Table 1 on page 4 through 5 and Table 8 on page 13 for the vertical operating pipe included with each standard mounting arrangement.)

- The appropriate set of operating-mechanism components; e.g., handle, rod guides or guide bearings, couplings, and bell crank assembly
- Complete installation instructions

Mounting Arrangements

Three-pole convertible disconnects are available in the "Standard Mounting Arrangements" section of S&C Information Bulletin 761-80. Departures from standard mounting arrangements are also available and fall into three categories:

1. *Standard minor modifications of standard mounting arrangements* are those so frequently encountered they are included on S&C's basic EDs. Standard minor modifications are listed in Table 10 on page 14. The applicable standard minor modifications may be specified by adding the appropriate "S" suffix to the ED number.
2. *Special minor modifications of standard mounting arrangements* are those that include such departures as special base drillings or special mounting brackets for operating-mechanism components. For this category of "special," S&C will prepare a custom ED based on the standard mounting arrangement ED. Disconnects will be supplied with an operating mechanism for the special minor modification of a standard mounting arrangement, as required.
3. *Special mounting arrangements* are those that involve complete departures from the standard mounting arrangements brought about by customizing a convertible disconnect to fit the user's structure. Custom EDs will be provided, as required.



Conditions of Sale—Continued

EXCLUSIONS: Convertible disconnects do not include connectors. Various connector arrangements are available as indicated in Table 12 on page 16. Specify quantity and catalog number of the connector arrangement desired.

SPECIFICATION DEVIATIONS: Convertible disconnects are offered with a choice of Cypoxy™ Insulator or porcelain station post insulators. The standard insulator color is gray. When disconnects are to be provided with special insulators or special connectors, contact the nearest S&C Sales Office for availability.

Disconnects of a given voltage rating (except 25/34.5-kV or 34.5-kV vertical-break style, side-break integer style, vertical-break integer style, and 69-kV double-break style) can be furnished with insulators of the next-higher voltage rating—add suffix “-Z3” to the catalog number.

Single- and two-pole group-operated disconnects are available:

- Single-pole (catalog number suffix “-P1”)
- Two-pole (catalog number suffix “-P2”)

Disconnects can be supplied with tin-plated terminal pads. To specify, add suffix “-Z5” to the catalog number.

POWER OPERATION: Power operation or, if desired, remote supervisory control may be provided for convertible disconnects by the addition of the appropriate Type AS-1A, Type AS-10, Type LS-2, or 6801M Automatic Switch Operator.

Types AS-1A and Type AS-10 Switch Operators provide power operation of convertible disconnects with rotating-type and reciprocating-type operating mechanisms respectively. These high-speed operators have operating times not exceeding 0.75 seconds and 1.2 seconds maximum, respectively. The operators' high operating speed provides adequate closing velocity for 25/34.5-kV and 34.5-kV three-pole side-break integer

style and three-pole vertical-break integer style disconnects to permit the assignment of fault-closing ratings. Specifically, the side-break integer style disconnects have a one-time duty-cycle fault-closing rating of 15,000 amperes, RMS, asymmetrical. The vertical-break integer style disconnects have one-time duty-cycle fault-closing ratings of 20,000 or 30,000 amperes, RMS, asymmetrical for disconnects rated 600 amperes or 1200 amperes respectively.

6801M Automatic Switch Operators are available in two versions—rotating, for rotating-type operating mechanisms; and reciprocating, for reciprocating-type operating mechanisms. Both versions operate in 0.5 seconds. Type LS-2 Switch Operators are for power operation of three-pole double-break style convertible disconnects rated 69 kV. Operating time for the 69-kV disconnect when applied with an LS-2 operator does not exceed 2.2 seconds.

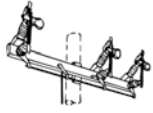


Power operation is available for certain mounting arrangements only. For integer-style disconnects, side-break standard-duty disconnects and 69-kV double-break style disconnects, mounting arrangements suitable for power operation are indicated in Table 1 on page 4 and Table 2 on page 6 through 7, Table 4 on page 8 and Table 5 on page 9 and page 10, and Table 7 on page 12. For all other disconnect styles, consult the nearest S&C Sales Office for availability.

For additional details concerning Type AS-1A or Type AS-10 Switch Operators, refer to S&C Specification Bulletin 769-31. For additional details on Type LS-2 Switch Operators, refer to S&C Specification Bulletin 753-31. For additional details concerning 6801M Automatic Switch Operators, refer to S&C Specification Bulletin 1045M-31.

WARRANTY QUALIFICATIONS: The standard warranty contained in S&C's standard conditions of sale, as set forth in S&C Price Sheet 150, does not apply when convertible disconnects are power operated using a switch operator not of S&C manufacture.

S&C Convertible Disconnects

Table 1. Convertible Disconnects—Three-Pole Side-Break Integer Style, with steel bases^{①②}

Mounting Configuration	Mounting Arrangements ^{③④}	Rating					Station Post Insulators	
		kV			Amperes, RMS		Cyproxy Catalog Number	Porcelain Catalog Number
		Nom.	Max	BIL	Cont.	Mom. (Asym.)		
Vertical, clockwise opening ^{⑤⑥} 	ED-140R21	14.4	17.0	110	1200	40 000	137612R6-L-E●	137612R6-L●
		25	27	150	1200	40 000	137613R9-L-E●	137613R9-L●
	ED-672R4	25/34.5	38	150	600	40 000	137167R1-L-E■▲	137167R1-L■
		34.5	38	200	600	40 000	137164R1-L-E■	137164R1-L■
Upright, clockwise opening ^{⑤⑥⑦} 	ED-136R20	14.4	17.0	110	1200	40 000	137412R8-L-E●	137412R8-L●
		25	27	150	1200	40 000	137413R9-L-E●	137413R9-L●
	ED-667R3	25/34.5	38	150	600	40 000	137367R3-L-E■▲	137367R3-L■
		34.5	38	200	600	40 000	137364R3-L-E■	137364R3-L■
Upright, clockwise opening ^{⑤⑥⑦} (extra mounting-pole clearance) 	ED-136R20	14.4	17.0	110	1200	40 000	138412R2-L-E●	138412R2-L●
		25	27	150	1200	40 000	138413R2-L-E●	138413R2-L●

① The disconnects shown include the appropriate set of operating-mechanism components as specified on the ED for the disconnect. Disconnects do not include connectors (refer to Table 12 on page 16).

② For disconnect dimensions, refer to S&C Specification Bulletin 761-31.

③ The applicable standard mounting arrangement, designated by the ED number shown, should be specified when ordering. Available “-S” suffixes for standard minor modifications to the basic ED are included by adding the appropriate suffix to the ED number. Refer to Table 12 on page 16 for description. Special minor modifications and special mounting arrangements are not available for these disconnects.

④ Refer to the erection drawings for mounting dimensions and heights.

⑤ Optional crossarm braces SDA-10367-1 are recommended for disconnects in the vertical mounting configuration and SDA-10367 for disconnects in the upright mounting configuration.

⑥ Bracket assemblies for mounting either three or six surge arresters can be provided by adding suffix “-A1” or “-A2,” respectively, to the catalog number of the disconnect.

⑦ These disconnects include dead-ending brackets as standard. Extension-link assemblies can be provided by adding suffix “-D” to

the catalog number of the disconnect. Maximum dead-end loading: 2000 pounds (907 kg) per conductor where pull-off forces are applied to only one side of the disconnect; 8000 pounds (3629 kg) per conductor where equal pull-off forces are applied to both sides of the disconnect.



● This disconnect includes two-hole terminal pads as standard. If four-bolt connectors are required, specify the two- to four-bolt adapter catalog number MDA-1162-1 and the four-bolt connector catalog number 4569R1-B. Refer to Table 12 on page 16 for more information.

■ This disconnect has a one-time duty-cycle fault-closing rating of 15,000 amperes, RMS, asymmetrical when operated by the applicable S&C switch operator—or a one-time duty-cycle fault-closing capability of 15,000 amperes, RMS, asymmetrical as a manually-operated disconnect (without quick-make mechanism and when operated vigorously through its full travel without hesitation at any point). These values represent the level of available fault current into which the disconnect can be closed once, with the disconnect remaining operable and able to carry continuous current.

▲ Applicable at 34.5 kV where leakage distance to ground meets user’s requirements. For 25/34.5-kV Cyproxy station-post insulators the leakage distance is 26¼ inches (667 mm).

TABLE CONTINUED ►

Table 1. Convertible Disconnects—Three-Pole Side-Break Integer Style, with steel bases^{①②}—Continued

Mounting Configuration	Mounting Arrangements ^{③④}	Rating					Station Post Insulators	
		kV			Amperes, RMS		Cypoxy Catalog Number	Porcelain Catalog Number
		Nom.	Max	BIL	Cont.	Mom. (Asym.)		
Upright, counterclockwise opening ^{⑤⑥⑦} 	ED-135R20	14.4	17.0	110	1200	40 000	137512R8-L-E●	137512R8-L●
		25	27	150	1200	40 000	137513R9-L-E●	137513R9-L●
	ED-669R3	25/34.5	38	150	600	40 000	137467R3-L-E■▲	137467R3-L■
		34.5	38	200	600	40 000	137464R3-L-E■	137464R3-L■
Tiered-out-board, clockwise opening ^{⑥⑦} 	ED-144R19	14.4	17.0	110	1200	40 000	137812R7-L-E●	137812R7-L●
		25	27	150	1200	40 000	137813R9-L-E●	137813R9-L●
	ED-676R3	25/34.5	38	150	600	40 000	137767R3-L-E■	137767R3-L■
		34.5	38	200	600	40 000	137764R3-L-E■	137764R3-L■
		34.5	38	200	1200	40 000	147764-L-E■	147764-L■

① The disconnects shown include the appropriate set of operating-mechanism components as specified on the ED for the disconnect. Disconnects do not include connectors (refer to Table 12 on page 16).

② For disconnect dimensions, refer to S&C Specification Bulletin 761-31.

③ The applicable standard mounting arrangement, designated by the ED number shown, should be specified when ordering. Available “-S” suffixes for standard minor modifications to the basic ED are included by adding the appropriate suffix to the ED number. Refer to Table 12 on page 16 for description. Special minor modifications and special mounting arrangements are not available for these disconnects.

④ Refer to the erection drawings for mounting dimensions and heights.

⑤ Optional crossarm braces SDA-10367-1 are recommended for disconnects in the vertical mounting configuration and SDA-10367 for disconnects in the upright mounting configuration.

⑥ Bracket assemblies for mounting either three or six surge arresters can be provided by adding suffix “-A1” or “-A2,” respectively, to the catalog number of the disconnect.

⑦ These disconnects include dead-ending brackets as standard. Extension-link assemblies can be provided by adding suffix “-D” to

the catalog number of the disconnect. Maximum dead-end loading: 2000 pounds (907 kg) per conductor where pull-off forces are applied to only one side of the disconnect; 8000 pounds (3629 kg) per conductor where equal pull-off forces are applied to both sides of the disconnect.

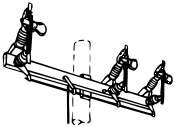
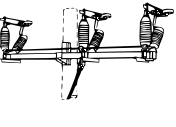
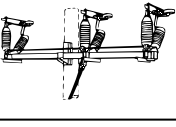
● This disconnect includes two-hole terminal pads as standard. If four-bolt connectors are required, specify the two- to four-bolt adapter catalog number MDA-1162-1 and the four-bolt connector catalog number 4569R1-B. Refer to Table 12 on page 16 for more information.

■ This disconnect has a one-time duty-cycle fault-closing rating of 15,000 amperes, RMS, asymmetrical when operated by the applicable S&C switch operator—or a one-time duty-cycle fault-closing capability of 15,000 amperes, RMS, asymmetrical as a manually-operated disconnect (without quick-make mechanism and when operated vigorously through its full travel without hesitation at any point). These values represent the level of available fault current into which the disconnect can be closed once, with the disconnect remaining operable and able to carry continuous current.

▲ Applicable at 34.5 kV where leakage distance to ground meets user’s requirements. For 25/34.5-kV Cypoxy station-post insulators the leakage distance is 26¼ inches (667 mm).

S&C Convertible Disconnects

Table 2. Convertible Disconnects—Three-Pole Side-Break Integer Style, with insulated bases①②③④

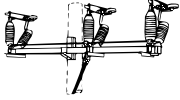
Mounting Configuration	Mounting Arrangements⑤⑥	Rating						Station Post Insulators	
		kV			Amperes, RMS			Cypoxy Catalog Number	Porcelain Catalog Number
		Nom.	Max	BIL	Cont.	Mom. (Asym.)⑥	Three-Second (Sym.)		
Vertical, clockwise opening⑦⑧⑨ 	ED-640R5	14.4	17.0	17.0	1200	40 000	25 000	137192R2-L-E●	137192R2-L●
		25	27	27	1200	40 000	25 000	137193R9-L-E●	137193R9-L●
	ED-642R4	34.5	38	200	600	40 000	25 000	137194R1-L-E■	137194R1-L■
		34.5	38	200	1200	40 000	25 000	147194-L-E	147194-L
Upright, clockwise opening⑦⑧⑨ 	ED-636R4	14.4	17.0	110	1200	40 000	25 000	137392R2-L-E●	137392R2-L●
		25	27	150	1200	40 000	25 000	137393R9-L-E●	137393R9-L●
	ED-637R3	34.5	38	200	600	40 000	25 000	137394R1-L-E■	137394R1-L■
		34.5	38	200	1200	40 000	25 000	147394-L-E■	147394-L■
Upright, clockwise opening⑦⑧⑨ (extra mounting-pole clearance) 	ED-636R4	14.4	17.0	110	1200	40 000	25 000	138392R2-L-E●	138392R2-L●
		25	27	150	1200	40 000	25 000	138393R2-L-E●	138393R2-L●

- ① The disconnects shown include the appropriate set of operating-mechanism components as specified on the ED for the disconnect. Disconnects do not include connectors (refer to Table 12 on page 16).
- ② Base is a fiberglass-reinforced pultruded structural tube especially constructed for high strength and is finished with a coat of gray polyurethane enamel.
- ③ Fiberglass interphase shaft is standard with this style.
- ④ For disconnect dimensions, refer to S&C Specification Bulletin 761-31.
- ⑤ The applicable standard mounting arrangement, designated by the ED number shown, should be specified when ordering. Available “-S” suffixes for standard minor modifications to the basic ED are included by adding the appropriate suffix to the ED number. Refer to Table 10 on page 14 for description. Special minor modifications and special mounting arrangements are not available for these disconnects.
- ⑥ Refer to the erection drawings for mounting dimensions and heights.
- ⑦ Optional crossarm braces SDA-10367-1 are recommended for disconnects in the vertical mounting configuration and SDA-10367 for disconnects in the upright mounting configuration. Crossarm provisions 5053 are available when crossarms are supplied by the customer.
- ⑧ Bracket assemblies for mounting either three or six surge arresters can be provided by adding suffix “-A1” or “-A2,” respectively, to the catalog number of the disconnect.

- ⑨ For provisions only for dead-ending, add suffix “-C” to the catalog number of the disconnect. Maximum dead-end loading: 700 pounds (318 kg) per conductor where pull-off forces are applied to only one side of the disconnect; 8000 pounds (3629 kg) per conductor where equal pull-off forces are applied to both sides of the disconnect. Also specify, if required, one set of six extension-link assemblies by adding suffix “-D” to the catalog number of the disconnect; i.e. catalog number 137192R1-L-CD.
- This disconnect includes two-hole terminal pads as standard. If four-bolt connectors are required, specify the two- to four-bolt adapter catalog number MDA-1162-1 and the four-bolt connector catalog number 4569R1-B. Refer to Table 12 on page 16 for more information.
- This disconnect has a one-time duty-cycle fault-closing rating of 15,000 amperes, RMS, asymmetrical when operated by the applicable S&C switch operator—or a one-time duty-cycle fault-closing capability of 15,000 amperes, RMS, asymmetrical as a manually-operated disconnect (without quick-make mechanism and when operated vigorously through its full travel without hesitation at any point). These values represent the level of available fault current into which the disconnect can be closed once, with the disconnect remaining operable and able to carry continuous current.

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Table 2. Convertible Disconnects—Three-Pole Side-Break Integer Style, with insulated bases ①②③④—Continued

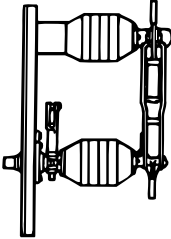
Mounting Configuration	Mounting Arrangements ⑤⑥	Rating						Station Post Insulators	
		kV			Amperes, RMS			Cypoxy Catalog Number	Porcelain Catalog Number
		Nom.	Max	BIL	Cont.	Mom. (Asym.) ⑥	Three-Second (Sym.)		
Tiered-out-board, clockwise opening ⑧⑨ 	ED-644R2	14.4	17.0	110	1200	40 000	25 000	137792R2-L-E●	137792R2-L●
		25	27	150	1200	40 000	25 000	137793R9-L-E●	137793R9-L●

- ① The disconnects shown include the appropriate set of operating-mechanism components as specified on the ED for the disconnect. Disconnects do not include connectors (refer to Table 12 on page 16).
- ② Base is a fiberglass-reinforced pultruded structural tube especially constructed for high strength and is finished with a coat of gray polyurethane enamel.
- ③ Fiberglass interphase shaft is standard with this style.
- ④ For disconnect dimensions, refer to S&C Specification Bulletin 761-31.
- ⑤ The applicable standard mounting arrangement, designated by the ED number shown, should be specified when ordering. Available “-S” suffixes for standard minor modifications to the basic ED are included by adding the appropriate suffix to the ED number. Refer to Table 10 on page 14 for description. Special minor modifications and special mounting arrangements are not available for these disconnects.
- ⑥ Refer to the erection drawings for mounting dimensions and heights.
- ⑦ Optional crossarm braces SDA-10367-1 are recommended for disconnects in the vertical mounting configuration and SDA-10367 for disconnects in the upright mounting configuration. Crossarm provisions 5053 are available when crossarms are supplied by the customer.
- ⑧ Bracket assemblies for mounting either three or six surge arresters can be provided by adding suffix “-A1” or “-A2,” respectively, to the catalog number of the disconnect.

- ⑨ For provisions only for dead-ending, add suffix “-C” to the catalog number of the disconnect. Maximum dead-end loading: 700 pounds (318 kg) per conductor where pull-off forces are applied to only one side of the disconnect; 8000 pounds (3629 kg) per conductor where equal pull-off forces are applied to both sides of the disconnect. Also specify, if required, one set of six extension-link assemblies by adding suffix “-D” to the catalog number of the disconnect; i.e. catalog number 137192R1-L-CD.
- This disconnect includes two-hole terminal pads as standard. If four-bolt connectors are required, specify the two- to four-bolt adapter catalog number MDA-1162-1 and the four-bolt connector catalog number 4569R1-B. Refer to Table 12 on page 16 for more information.
- This disconnect has a one-time duty-cycle fault-closing rating of 15,000 amperes, RMS, asymmetrical when operated by the applicable S&C switch operator—or a one-time duty-cycle fault-closing capability of 15,000 amperes, RMS, asymmetrical as a manually-operated disconnect (without quick-make mechanism and when operated vigorously through its full travel without hesitation at any point). These values represent the level of available fault current into which the disconnect can be closed once, with the disconnect remaining operable and able to carry continuous current.

S&C Convertible Disconnects

Table 3. Convertible Disconnects—Three-Pole Side-Break Heavy-Duty Style^{①②}

Illustration	Mounting Configuration ^{③④}	Rating						Station Post Insulators	
		kV			Amperes, RMS			Cypoxy Catalog Number ^⑤	Porcelain Catalog Number ^⑤
		Nom.	Max	BIL	Cont.	Mom. (Asym.)	Three-Second (Sym.)		
	Vertical or upright, clockwise opening	14.4	17.0	110	600	40 000	25 000	137012R3-L-E	137012R3-L
		25	27	150	600	40 000	25 000	137013R7-L-E	137013R7-L
	Vertical or upright, ^⑥ clockwise opening	34.5	38	200	600	40 000	25 000	138114R1-L-E	138114R1-L
		34.5	38	200	1200	40 000	25 000	158114-L-E	158114-L
	Vertical or upright, counterclockwise opening	14.4	17.0	110	600	40 000	25 000	137212R3-L-E	137212R3-L
		25	27	150	600	40 000	25 000	137213R7-L-E	137213R7-L
	Vertical or upright, ^⑥ counterclockwise opening	34.5	38	200	600	40 000	25 000	138314R1-L-E	138314R1-L
		34.5	38	200	1200	40 000	25 000	158314-L-E	158314-L

① The disconnects shown include the appropriate set of operating-mechanism components as specified on the ED for the disconnect. Disconnects do not include connectors (refer to Table 12 on page 16).

② For disconnect dimensions, refer to S&C Specification Bulletin 761-31.

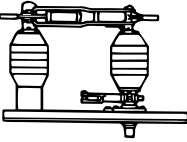
③ Disconnects are available in a variety of standard mounting arrangements, designated by ED number, as described in S&C Information Bulletin 761-80. Specify the applicable ED number when ordering.

④ Refer to the erection drawings for mounting dimensions and heights.

⑤ Standard minor modifications of the standard mounting arrangements for these disconnects are listed in Table 12 on page 16. The applicable standard minor modifications listed may be specified by adding the appropriate “-S” suffix to the ED number. Refer to page 1 for special minor modifications and special mounting arrangements for these disconnects.

⑥ Three-pole side-break heavy-duty style disconnects rated 34.5 kV, while provided with design features for fault closing, are not assigned fault-closing ratings or capabilities because special mounting arrangements may deny the requisite high-speed closing behavior.

Table 4. Convertible Disconnects—Three-Pole Side-Break Standard-Duty Style^{①②}

Illustration	Mounting Configuration ^{③④}	Rating						Station Post Insulators	
		kV			Amperes, RMS			Cypoxy Catalog Number	Porcelain Catalog Number
		Nom.	Max	BIL	Cont.	Mom. (Asym.)	Three-Second (Sym.)		
	Upright, counterclockwise opening	14.4	17.0	110	600	40 000	25 000	137232R1-L-E	137232R1-L

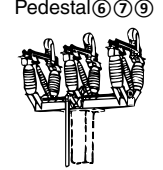
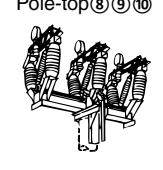
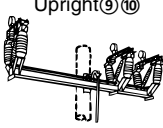
① The disconnects shown include the appropriate set of operating-mechanism components as specified on the ED for the disconnect. Disconnects do not include connectors (refer to Table 12 on page 16).

② For disconnect dimensions, refer to S&C Specification Bulletin 761-31.

③ Disconnects are available in a variety of standard mounting arrangements, designated by ED number, as described in S&C Information Bulletin 761-80. Specify the applicable ED number when ordering.

④ Refer to the erection drawings for mounting dimensions and heights.

Table 5. Convertible Disconnects—Three-Pole Vertical-Break Integer Style^{①②}


 <p>Pedestal^{⑥⑦⑨}</p>	ED-151R1	25/34.5	38	150	600	40 000	25 000	135614R2-L-E	135614R2-L
		25/34.5	38	150	1200	40 000	25 000	135814R2-L-E	135814R2-L
		34.5	38	200	600	40 000	25 000	135714R2-L-E	135714R2-L
		34.5	38	200	1200	40 000	25 000	135914R2-L-E	135914R2-L
 <p>Pole-top^{⑧⑨⑩}</p>	ED-152R3	25/34.5	38	150	600	40 000	25 000	135624R2-L-E●	135624R2-L
		25/34.5	38	150	1200	40 000	25 000	135824R2-L-E●	135824R2-L
		34.5	38	200	600	40 000	25 000	135724R2-L-E	135724R2-L
		34.5	38	200	1200	40 000	25 000	135924R2-L-E	135924R2-L
 <p>Upright^{⑨⑩}</p>	ED-153R5	25/34.5	38	150	600	40 000	25 000	135634R2-L-E●	135634R2-L
		25/34.5	38	150	1200	40 000	25 000	135834R2-L-E●	135834R2-L
		34.5	38	200	600	40 000	25 000	135734R2-L-E	135734R2-L
		34.5	38	200	1200	40 000	25 000	135934R2-L-E	135934R2-L

- ① The disconnects shown include the appropriate set of operating-mechanism components as specified on the ED for the disconnect. Disconnects do not include connectors (refer to Table 12 on page 16).
- ② For disconnect dimensions, refer to S&C Specification Bulletin 761-31.
- ③ The applicable standard mounting arrangement, designated by the ED number shown, should be specified when ordering. Available “-S” suffixes for standard minor modifications to the basic ED are included by adding the appropriate suffix to the ED number. Refer to Table 10 on page 14 for description. Special minor modifications and special mounting arrangements are not available for these disconnects.
- ④ Refer to the erection drawings for mounting dimensions and heights.
- ⑤ The one-time duty-cycle fault-closing capability for a manually operated three-pole vertical-break integer style disconnect (without quick-make mechanism, and when operated vigorously through its full travel without hesitation at any point) for 600-ampere and 1200-ampere disconnects is 20,000 amperes and 30,000 amperes, RMS, asymmetrical, respectively. The one-time duty-cycle fault-closing rating for 600-ampere and 1200-ampere disconnects is 20,000 amperes and 30,000 amperes, RMS, asymmetrical, respectively, when disconnects are operated by applicable S&C switch operator. The one-time duty-cycle fault-closing rating defines the level of available fault current into

- which the disconnect can be closed once, with the disconnect remaining operable and able to carry rated continuous current.
- ⑥ No provisions for dead-ending are offered since the mounting pedestals are not intended for such duty.
- ⑦ Select mounting pedestal from Table 9 on page 13.
- ⑧ These disconnects include dead-ending brackets as standard. Maximum dead-end loading: 2000 pounds (907 kg) per conductor where pull-off forces are applied to only one side of the disconnect; 8000 pounds (3629 kg) per conductor where equal pull-off forces are applied to both sides of the disconnect. If required, order one set of six extension-link assemblies by adding suffix “-D” to the catalog number of the disconnect.
- ⑨ Bracket assemblies for mounting either three or six surge arresters can be provided by adding suffix “-A1” or “-A2” respectively to the catalog number of the disconnect.
- ⑩ Optional crossarm braces SDA-10367-1 are recommended for disconnects in the vertical mounting configuration and SDA-10367 for disconnects in the upright mounting configuration.
- Applicable at 34.5 kV where leakage distance to ground meets user’s requirements. For 25/34.5-kV Cypoxy station-post insulators the leakage distance is 26¼ inches (667 mm).

TABLE CONTINUED ►

Table 5. Convertible Disconnects—Three-Pole Vertical-Break Integer Style^{①②}—Continued

Mounting Configuration	Mounting Arrangements ^{③④}	Rating						Station Post Insulators	
		kV			Amperes, RMS			Cyproxy Catalog Number	Porcelain Catalog Number
		Nom.	Max	BIL	Cont.	Mom. (Asym.) ^⑤	Three-Second (Sym.)		
Tiered-out-board ^{⑨⑩} 	ED-155R6	25/34.5	38	150	600	40 000	25 000	135654R2-L-E●	135654R2-L
		34.5	38	200	600	40 000	25 000	135754R2-L-E	135754R2-L
		34.5	38	200	1200	40 000	25 000	135954R2-L-E	135954R2-L
Triangular	ED-156R5	25/34.5	38	150	600	40 000	25 000	135664R2-L-E	135664R2-L
		34.5	38	200	600	40 000	25 000	135764R2-L-E	135764R2-L
		34.5	38	200	1200	40 000	25 000	135964R2-L-E	135964R2-L

① The disconnects shown include the appropriate set of operating-mechanism components as specified on the ED for the disconnect. Disconnects do not include connectors (refer to Table 12 on page 16).

② For disconnect dimensions, refer to S&C Specification Bulletin 761-31.

③ The applicable standard mounting arrangement, designated by the ED number shown, should be specified when ordering. Available “-S” suffixes for standard minor modifications to the basic ED are included by adding the appropriate suffix to the ED number. Refer to Table 12 on page 16 for description. Special minor modifications and special mounting arrangements are not available for these disconnects.

④ Refer to the erection drawings for mounting dimensions and heights.

⑤ The one-time duty-cycle fault-closing capability for a manually operated three-pole vertical-break integer style disconnect (without quick-make mechanism, and when operated vigorously through its full travel without hesitation at any point) for 600-ampere and 1200-ampere disconnects is 20,000 amperes and 30,000 amperes, RMS, asymmetrical, respectively. The one-time duty-cycle fault-closing rating for 600-ampere and 1200-ampere disconnects is 20,000 amperes and 30,000 amperes, RMS, asymmetrical, respectively, when disconnects are operated by applicable S&C switch operator. The one-time duty-cycle fault-closing rating defines the level of available fault current into

which the disconnect can be closed once, with the disconnect remaining operable and able to carry rated continuous current.

⑥ No provisions for dead-ending are offered since the mounting pedestals are not intended for such duty.

⑦ Select mounting pedestal from Table 9 on page 13.

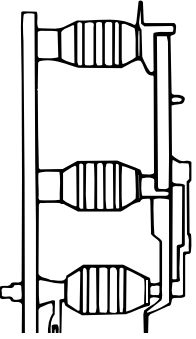
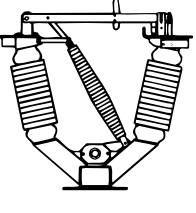
⑧ These disconnects include dead-ending brackets as standard. Maximum dead-end loading: 2000 pounds (907 kg) per conductor where pull-off forces are applied to only one side of the disconnect; 8000 pounds (3629 kg) per conductor where equal pull-off forces are applied to both sides of the disconnect. If required, order one set of six extension-link assemblies by adding suffix “-D” to the catalog number of the disconnect.

⑨ Bracket assemblies for mounting either three or six surge arresters can be provided by adding suffix “-A1” or “-A2” respectively to the catalog number of the disconnect.

⑩ Optional crossarm braces SDA-10367-1 are recommended for disconnects in the vertical mounting configuration and SDA-10367 for disconnects in the upright mounting configuration.

● Applicable at 34.5 kV where leakage distance to ground meets user’s requirements. For 25/34.5-kV Cyproxy station-post insulators the leakage distance is 26¼ inches (667 mm).

Table 6. Convertible Disconnects—Three-Pole Vertical-Break Style^①

Illustration	Mounting Configuration ^{②③}	Rating						Station Post Insulators	
		kV			Amperes, RMS			Cypoxy Catalog Number ^④	Porcelain Catalog Number ^④
		Nom.	Max	BIL	Cont.	Mom. (Asym.)	Three-Second (Sym.)		
	Vertical or upright	14.4	17.0	110	600	40 000	25 000	135012R4-L-E	135012R4-L
		14.4	17.0	110	1200	61 000	40 000	320222R9-L-E	320222R9-L
		25	27	150	600	40 000	25 000	135013R5-L-E	135013R5-L
		25	27	150	1200	61 000	40 000	320223R9-L-E	320223R9-L
	Vertical ^⑤	14.4	17.0	200	2400	40 000	25 000	135072R2-L-E●■	135072R2-L●■
		25/34.5	38	150	1200	40 000	25 000	135894R3-L-E▲	135894R3-L
		34.5	38	200	600	40 000	25 000	135794R3-L-E	135794R3-L
		34.5	38	200	1200	40 000	25 000	135994R3-L-E	135994R3-L
	Upright ^⑤	14.4	17.0	200	2400	40 000	25 000	135092R2-L-E●■	135092R2-L●■
		25/34.5	38	150	1200	40 000	25 000	135874R3-L-E▲	135874R3-L
		34.5	38	200	600	40 000	25 000	135774R3-L-E	135774R3-L
		34.5	38	200	1200	40 000	25 000	135974R3-L-E	135974R3-L

① The disconnects shown include the appropriate set of operating-mechanism components as specified on the ED for the disconnect. Disconnects do not include connectors (refer to Table 12 on page 16).

② Disconnects are available in a variety of standard mounting arrangements, designated by ED number, as described in S&C Information Bulletin 761-80. Specify the applicable ED number when ordering.

③ Refer to the erection drawings for mounting dimensions and heights.

④ Standard minor modifications of the standard mounting arrangements for these disconnects are listed in Table 10 on page 14. The applicable standard minor modifications listed may be specified by adding the appropriate “-S” suffix to the ED number. Refer to page 1 for special minor modifications and special mounting arrangements for these disconnects.

⑤ Three-pole vertical-break style disconnects rated 25/34.5 kV and 34.5 kV, while provided with design features for fault closing, are not assigned fault-closing ratings or capabilities because special mounting arrangements may deny the requisite high-speed closing behavior.

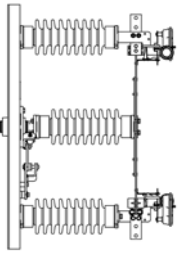
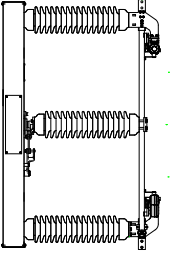
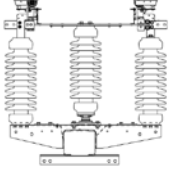
● These disconnects can be applied at system voltages above 17.0 kV where a 2400-ampere continuous current rating is required.

■ Tin-plated terminal pads (suffix option “-Z5”) are not available with disconnects rated 2400 amperes continuous. Terminal pads on these disconnect models are silver-plated as standard.

▲ Applicable at 34.5 kV where leakage distance to ground meets user’s requirements. For 25/34.5-kV Cypoxy station-post insulators the leakage distance is 26¼ inches (667 mm).

S&C Convertible Disconnects

Table 7. Convertible Disconnects—Three-Pole Double-Break Style^①

Illustration	Mounting Configuration ^{② ③}	Rating						Station Post Insulators	
		kV			Amperes, RMS			Cypoxy Catalog Number ^⑤	Porcelain Catalog Number ^⑤
		Nom.	Max	BIL	Cont.	Mom. (Asym.) ^④	Three-Second (Sym.)		
	Vertical or upright	34.5	38	200	630	40 000	25 000	320304R11-L-E	320304R11-L
		46	48.3	250	630	40 000	25 000	320305R11-L-E	320305R11-L
	Inverted	34.5	38	200	630	40 000	25 000	320404R11-L-E	320404R11-L
		46	48.3	250	630	40 000	25 000	320405R11-L-E	320405R11-L
	Vertical, upright, or tiered ^⑥	69	72.5	350	1200	40 000	25 000	N/A	320306-L
	Vertical, Upright, Tiered, Pole-Top, or Pedestal	46	48.3	250	630	40 000	25 000	320335R11-L-E	320335R11-L
		46	48.3	250	630	40 000	25 000	320345R11-L-E	320345R11-L
		46	48.3	250	630	40 000	25 000	320355R11-L-E	320355R11-L
		46	48.3	250	630	40 000	25 000	320365R11-L-E	320365R11-L
		46	48.3	250	630	40 000	25 000	320375R11-L-E	320375R11-L

^① The disconnects shown include the appropriate set of operating-mechanism components as specified on the ED for the disconnect. Disconnects do not include connectors (refer to Table 12 on page 16).

^② Disconnects are available in a variety of standard mounting arrangements, designated by ED number, as described in S&C Information Bulletin 761-80. Specify the applicable ED number when ordering.

^③ Refer to the erection drawings for mounting dimensions and heights.

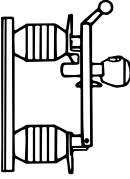
^④ Three-pole double-break style disconnects, while provided with design features for fault closing, are not assigned fault-closing ratings

or capabilities because special mounting arrangements may deny the requisite high-speed closing behavior.

^⑤ Standard minor modifications of the standard mounting arrangements for these disconnects are listed in Table 10 on page 14. The applicable standard minor modifications listed may be specified by adding the appropriate “-S” suffix to the ED number. Refer to page 1 for special minor modifications and special mounting arrangements for these disconnects.

^⑥ Disconnects rated 69 kV may be power operated using a Type LS-2 Switch Operator.

Table 8. Convertible Disconnects—Single-Pole Heavy-Duty Style^①

Illustration	Mounting Configuration	Rating						Station Post Insulators	
		kV			Amperes, RMS			Cypoxy Catalog Number	Porcelain Catalog Number
		Nom.	Max	BIL	Cont.	Mom. (Asym.)	Three-Second (Sym.)		
	Vertical	14.4	17.0	110	600	40 000	25 000	136012-L-E	136012-L
		14.4	17.0	110	1200	61 000	40 000	320022R9-L-E	320022R9-L
		25	27	150	600	40 000	25 000	136013R1-L-E	136013R1-L
		25	27	150	1200	61 000	40 000	320023R10-L-E	320023R10-L
	Inverted	14.4	17.0	110	600	40 000	25 000	136112R5-L-E	136112R5-L
		14.4	17.0	110	1200	61 000	40 000	320122R9-L-E	320122R9-L
		25	27	150	600	40 000	25 000	136113R1-L-E	136113R1-L
		25	27	150	1200	61 000	40 000	320123R10-L-E	320123R10-L

^① Disconnects do not include connectors (refer to Table 12 on page 16).

Table 9. Mounting Pedestals—For Convertible Disconnects

Item	Column Section, Inches (mm)	Column Height, Feet ^① (mm)	Catalog Number	Anchor Bolts ^{② ③}	
				Quantity Required	Catalog Number
Mounting pedestal (one per disconnect), for vertical-break integer style disconnects, square steel tube construction, galvanized finish ^④	8 x 8 (203 x 203)	8 (2438)	92426R1-G	4	S-81365-2
		9 (2743)	92427R1-G		
		10 (3048)	92428R1-G		
		11 (3353)	92429R1-G		
		12 (3658)	92434R1-G		

^① Intermediate heights [less than 12 feet (3658 mm)] are available in 3-inch (76 mm) increments. Specify by adding one of the following suffixes to the catalog number of the mounting pedestal of nearest lower height.

- S3 Three inches (76 mm) additional height
- S6 Six inches (152 mm) additional height
- S9 Nine inches (229 mm) additional height

Note: Maximum available column height is 12 feet 0 inches (3658 mm).

^② Each anchor bolt is of galvanized steel and is furnished with two hex nuts and two flat washers to facilitate leveling the mounting pedestals.

^③ Nominal size of anchor bolts is 1¼ inch x 3 feet 8 inches (32 mm x 1118 mm).

^④ For vertical-break integer style disconnects mounted on pedestals with an 8-inch by 8-inch (203 mm x 203 mm) column section, appropriate motor operator mounting brackets need to be ordered separately as follows:

-For an AS-10 reciprocating-type operator, use operator mounting bracket SA-39154 (quantity 2).

-For a 6801M reciprocating-type operator, use operator mounting bracket SDA-10696 (quantity 1).

S&C Convertible Disconnects

Table 10. Standard Minor Modifications^{①②}

Item	Applicable to Disconnect Style	Suffix to be Added to Erection Drawing Number
2½-inch (67 mm) diameter tubular fiberglass insulating section in vertical operating shaft	All except double-break rated 69 kV and ED-5B	-S1●■
Cypoxy Insulator in vertical operating shaft	All	-S2
Insulated interphase sections and one fiberglass insulating section in vertical operating shaft ^③	All except integer, vertical-break rated 25/34.5 kV and 34.5 kV, double-break rated 69 kV, and vertical-break rated 14.4 kV/2400 A	-S3■
Insulated interphase sections and one Cypoxy Insulator in vertical operating shaft	All except integer, vertical-break rated 25/34.5 kV and 34.5 kV, double-break rated 69 kV, and vertical-break rated 14.4 kV/2400 A	-S4■
2-inch (51 mm) NPS pipe. Required for rotating-type operating-mechanism vertical shaft when such shaft exceeds three 10-foot 4-inch (3150 mm) sections (four 10-foot 4-inch (3150 mm) sections in the case of three-pole side-break heavy-duty style) ^④	All except double-break rated 69 kV	-S5
2-inch (51 mm) NPS pipe with one extra pipe section	All rotating ED mechanisms	-S5A
2-inch (51 mm) NPS pipe with two extra pipe sections	All rotating ED mechanisms	-S5B
2-inch (51 mm) NPS pipe with three extra pipe sections	Refer to erection drawing	-S5C
Key interlock—single lock for “locked-open” application	All	-S6
Provision for key interlock—allows future addition of single lock for “locked-open” application	All	-S6L
Auxiliary contact switch with 4 N/O and 4 N/C contacts (600 Vac/20 A, 125 Vdc/1 A, 48 Vdc/1 A)	All	-S7
Provision for power operation of pole-mounted disconnect by Type AS-1A Switch Operator, Type AS-10 Switch Operator, or LS-2 Switch Operator (for 69-kV disconnects only)	All except reciprocating double-break rated 69 kV	-S8▲
Provision for power operation of steel-structure or pedestal-mounted disconnect by Type AS-1A Switch Operator, Type AS-10 Switch Operator, or LS-2 Switch Operator (for 69-kV disconnects only)	All except reciprocating double-break rated 69 kV	-S9▲
Provision for power operation of pole-mounted disconnect by 6801M Automatic Switch Operator—rotating or reciprocating	All except double-break rated 69 kV	-S16▲
One extra pipe section—1¼-inch (31.8 mm) NPS pipe	All reciprocating ED mechanisms	-V1◆
Two extra pipe sections—1¼-inch (31.8 mm) NPS pipe	All reciprocating ED mechanisms	-V2◆

① Certain standard minor modifications are available for certain mounting arrangements only. Refer to S&C Information Bulletin 761-80 for more details.

② Refer to erection drawing for standard minor modifications availability; refer to the reference drawing (called up on the erection drawing) for standard minor modifications compatibility.

③ -S3 option suffix (insulated interphase sections and one fiberglass insulating section in vertical operating shaft) is not compatible with option suffix “-S5.”

④ Operating mechanism for double-break style disconnects rated 69 kV are equipped with 2-inch (51 mm) NPS pipe as standard.

● -S1 option suffix (tubular fiberglass insulating section in vertical operating shaft) is not compatible with any of the following option suffixes: “-S3,” “-S5,” “-S5A,” “-S5B,” “-S5C,” “-S8,” “-S9,” and “-S16.”

■ Not available for power-operated disconnects.

▲ Not all mounting arrangements are suitable for power operation, contact your nearest S&C Sales Office for availability.

◆ The necessary nonadjustable rod guide assembly (catalog number VU-998) is included when ordering these catalog number suffixes.

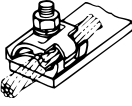
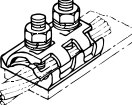


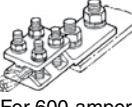
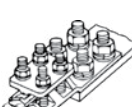
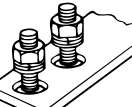
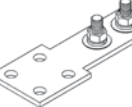
Table 11. Accessories—For Convertible Disconnects

Item	For Convertible Disconnect		Suffix to be Added to Disconnect Catalog Number
	Applicable to Disconnect Style	Rating, kV	
Mounting provisions for three surge arresters per disconnect	Side-break integer and vertical-break integer	14.4 thru 34.5	-A1
Mounting provisions for six surge arresters per disconnect	Side-break integer and vertical-break integer	14.4 thru 34.5	-A2
Ice shields ^①	Side-break integer, side-break standard-duty, side-break heavy-duty, and three-pole double-break	14.4 thru 46	-B
Dead-ending provisions	Side-break integer with insulated bases (except vertical mounting configurations)	14.4 thru 34.5	-C
Extension-link assembly (one set of six)	Side-break integer and vertical-break integer (except vertical and pedestal mounting configurations)	14.4 thru 34.5	-D

^① Applicable to upright mounting configurations only.

S&C Convertible Disconnects

Table 12. Connectors

Illustration	Description	Accommodating Conductor	For 600-Ampere Disconnects	For 1200-Ampere Disconnects ^①
			Catalog Number	Catalog Number
	Bronze body, tin plated. Includes one 1/2-13x2 1/2-inch galvanized steel bolt	No. 2 solid (33.6 mm ²) through 500 kc mil (335 mm ²) stranded copper or aluminum	4740R1	—
	Aluminum-Alloy body, tin plated. Includes two 1/2-13x2 3/4-inch galvanized steel bolts	No. 2 solid (33.6 mm ²) through 500 kc mil (335 mm ²) stranded copper or aluminum	4741R2	—
 For 600-ampere disconnects or  For 1200-ampere disconnects	Standard bronze pad terminal, four-bolt, tin plated. Includes two 1/2-13x1 1/2-inch galvanized steel bolts for attachment to terminal pads of disconnects	No. 6 solid (13.3 mm ²) through 250 kc mil (168 mm ²) copper or aluminum	4564R1-B	—
		1/0 solid (53.5 mm ²) through 500 kc mil (335 mm ²) copper or aluminum	4565R1-B	—
		2/0 stranded (89 mm ²) through 800 kc mil (539 mm ²) copper or aluminum	4567R1-B	4568R1-B
		4/0 stranded (141 mm ²) through 1000 kc mil (673 mm ²) copper or aluminum	—	4569R1-B
 For 600-ampere disconnects or  For 1200-ampere disconnects	Standard aluminum-alloy pad terminal, four-bolt. Includes two 1/2-13x1 1/2-inch galvanized steel bolts for attachment to terminal pads of disconnects	No. 4 stranded (27.3 mm ²) through 1/0 stranded (70.5 mm ²) copper or aluminum	5326-B	—
		1/0 stranded (70.5 mm ²) through 250 kc mil (168 mm ²) copper or aluminum	5327-B	—
		250 kc mil (168 mm ²) through 400 kc mil (269 mm ²) copper or aluminum	5328-B	5329-B
		350 kc mil (235 mm ²) through 600 kc mil (404 mm ²) copper or aluminum	5330-B	5331-B
		600 kc mil (404 mm ²) through 900 kc mil (606 mm ²) copper or aluminum	—	5333-B
		900 kc mil (606 mm ²) through 1250 kc mil (842 mm ²) copper or aluminum	—	5334-B
	Provision only for compression connectors. Includes two 1/2-13x2-inch galvanized steel bolts		4581●■	—
	Copper two-to-four bolt adapter. Includes two 1/2-13x1 1/2-inch galvanized steel bolts for attachment to terminal pads of disconnects		MDA-1162-1	MDA-1162-1

① Side-break integer-style disconnects rated 14.4 kV, 1200 amperes and 25 kV, 1200 amperes include two-hole terminal pads as standard. If four-bolt connectors are required, specify the two-to-four bolt adapter catalog number MDA-1162-1 and four-bolt connector catalog number 4569R1-B.

● Mechanical interference with blade prevents use on single-pole heavy-duty style disconnects.

■ When used with aluminum compression connectors, disconnect terminal pads should be tin plated. See the "Specification Deviations" section on page 2.

Table 13. Parts—For Convertible Disconnects

Item	Applicable to Disconnect	Catalog Number
2½-inch diameter tubular fiberglass insulating section in vertical operating shaft, including end fittings For 1¼-inch IPS operating shaft For 1½-inch IPS operating shaft	All ①②	SA-42936-3 SA-42936-1
1-inch diameter fiberglass insulating section in vertical operating shaft, including end fittings (for disconnects with ¾-inch IPS operating pipe)	All 14.4-kV and 25-kV side-break integer and side-break standard-duty ①③	S-91239
Cyproxy Insulator unit for vertical operating shaft, including end fittings For ¾-inch IPS operating shaft For 1¼-inch IPS operating shaft For 1½-inch IPS operating shaft	All ①②	PA-7235-1 PA-7235-2 PA-7235-3

① For side-break integer, vertical-break integer, and side-break standard-duty styles, the appropriate fiberglass insulating section is determined by the applicable standard minor modification (i.e., “S1” or “S10”), as indicated in Table 10 on page 14.

② Not for use with power-operated disconnects.

③ Not for use with power-operated disconnects or disconnects utilizing operating pipe larger than ¾-inch IPS.