Specifications

Conditions of Sale

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

SPECIAL TO THIS PRODUCT:

INCLUSIONS:

Three-Pole Alduti-Rupter Switches: Integral quick-make quick-break mechanism and antifriction bearings are featured in the built-in operating mechanism of the three-pole switches. These switches are furnished as complete units including direct-coupled, chain-coupled, or pipe-coupled handle; interphase barriers;▲ side barriers;▲ and any other operating-mechanism components required by the specifications for any Standard Mounting Arrangement covered in S&C Data Bulletin 783-80.

Shaft extensions for three-pole switches will be furnished at no extra charge if they are specified on orders, together with the dimension required.

EXCLUSIONS:

All Alduti-Rupter Switches: Switches do not include connectors. Various connector arrangements are available as listed in the table on page 4. Specify quantity and catalog number of connector arrangement desired.

SPECIFICATION DEVIATIONS:

All Alduti-Rupter Switches: Switches cannot be provided with special insulators.

Switches, regardless of voltage rating, cannot be supplied for back connection.

Higher or lower insulator voltage ratings for a switch of a given voltage rating are not available.

Three-Pole Alduti-Rupter Switches: Three-pole switches can be supplied with an operating mechanism that conforms to the specifications of any "minor modification" of the Standard Mounting Arrangements listed in S&C Data Bulletin 783-80.

Three-pole switches can be supplied with an operating mechanism that requires the preparation—or re-use—of a custom erection drawing of a special mounting arrangement.

Three-pole switches cannot be supplied less bases and/or less insulators.

Three-pole switches can be supplied with tin-plated terminal pads. To specify, add suffix "-Z5" to the switch catalog number.

Single-Pole Alduti-Rupter Switches: Single-pole 600-ampere switches can be supplied *less* insulators—add suffix "-Z1" to the switch catalog number.

Single-pole 600-ampere switches can be supplied *less* bases but *including* insulators—add suffix "-Z4" to the catalog number. Single-pole 600-ampere switches can also be supplied *less* bases and *less* insulators—add suffix "-Z1Z4" to the catalog number.

Single-pole switches can be supplied with tin-plated terminal pads. To specify, add suffix "-Z5" to the catalog number.

How to Order

1. Obtain the catalog number of the desired switch from the tables on pages 5 and 6.
2. For three-pole switches, obtain the ED number of the desired switch from S&C Data Bulletin 783-80.
3. If specification deviations are desired, such as minor modifications or special modifications of the mounting arrangement; switches supplied with tin-plated terminal pads; or, for single-pole switches, switches supplied less bases and/or less insulators, see the "Specification Deviations" section on this page.
4. If a key interlock is desired, see the "Accessories" table on page 7 for ordering information.
5. If connectors are desired, obtain the catalog number of the desired connector from page 4.

Note: To order spare and replacement interrupters, obtain the catalog number of the desired part from the table on page 7.

▲ Interphase barriers and side barriers are not required, nor furnished, with 25-kV three-pole switches.

★ S&C Alduti-Rupter Switches are manufactured in accordance with a quality system certified to ISO 9001.

APPLICATION CLASSIFICATIONS (See symbols on pages 5 and 6)

Application			Maximum Interrupting Duty,① Amperes, RMS	Symbol			
				Single-Pole Switch		Three-Pole Switch	
Class		Qualifications		Solidly or Effectively② Grounded System	Ungrounded System	Solidly or Effectively② Grounded System	Ungrounded System
Transformer Switching	Parallel Switching③		600★	A	A	A	A
	Load Dropping and Magnetizing Current Switching	Three-phase transformer (or three-phase bank of single-phase transformers) connected solidly grounded-wye on the primary (switch) side and delta on the secondary side	●	E	—	E	—
		All other connections of three-phase transformers (or three-phase banks of single-phase transformers)—including autotransformers	●	G	G	F	F
		Single-phase transformers connected phase-to-ground on the primary (switch) side	●	E	—	—	—
		Single-phase transformers connected phase-to-phase on the primary (switch) side	●	G	G	—	—
Line Switching	Load Splitting (Parallel or Loop Switching)		■	A	A	A	A
	Load Dropping	Three-phase circuits with *all* load-side three-phase transformers (or three-phase banks of single-phase transformers) connected solidly grounded-wye on the primary (switch) side and delta on the secondary side, and *all* load-side single-phase transformers connected phase-to-ground on the primary (switch) side	■	E	—	E	—
		Three-phase circuits with load-side transformers connected other than as described above	■	G	G	F	F
		Single-phase circuits with *all* load-side transformers connected phase-to-ground on the primary (switch) side	■	E	—	—	—
		Single-phase circuits with load-side transformers connected other than as described above	■	G	G	—	—
	Line Dropping		▲	K	L	K	K

① Lower values may apply in "conditional applications." Refer to "CONDITIONAL APPLICATIONS" table at bottom of page 3.

② X_0/X_1 from 0 to + 3.0 and R_0/X_1 from 0 to + 1.0.

③ Applies to switching of the primary of a transformer which remains energized from the secondary bus, or to disconnecting of a loaded secondary bus from one of two transformers supplying that bus while the primary side of the transformer remains energized.

★ For higher current applications, refer to the nearest S&C Sales Office.

● S&C Alduti-Rupter Switches will drop loads through 600, 720, or 1200 amperes, depending upon their continuous rating, and will switch magnetizing currents associated with such loads.

■ Same as continuous-current rating.

▲ Maximum length of line: 100 miles for switches rated 4.8 kV through 25 kV; 10 to 15 miles for switches rated 34.5 kV.

TABLE CONTINUED ►

APPLICATION CLASSIFICATIONS (See symbols on pages 5 and 6)—Continued

Application			Maximum Interrupting Duty,① Amperes, RMS	Symbol			
				Single-Pole Switch		Three-Pole Switch	
Class		Qualifications		Solidly or Effectively② Grounded System	Ungrounded System	Solidly or Effectively② Grounded System	Ungrounded System
Cable Switching	Load Splitting		■	A	A	A	A
	Load Dropping	Three-phase circuits with *all* load-side three-phase transformers (or three-phase banks of single-phase transformers) connected solidly grounded-wye on the primary (switch) side and delta on the secondary side, and *all* load-side single-phase transformers connected phase-to-ground on the primary (switch) side	■	E	—	E	—
		Three-phase circuits with load-side transformers connected other than as described above	■	G	G	F	F
		Single-phase circuits with *all* load-side transformers connected phase-to-ground on the primary (switch) side	■	E	—	—	—
		Single-phase circuits with load-side transformers connected other than as described above	■	G	G	—	—
	Cable Dropping (charging current)	Shielded cable	▼	H	L	H	K
		Unshielded cable	▼	K	L	K	K
Capacitor-Bank Switching, Single Bank Only		Grounded capacitor bank	◆	H	L	H	K
		Ungrounded capacitor bank	◆	L	L	K	K

① Lower values may apply in "conditional applications." Refer to "CONDITIONAL APPLICATIONS" table below.

② X_0/X_1 from 0 to + 3.0 and R_0/X_1 from 0 to + 1.0.

■ Same as continuous-current rating.

▼ 30 to 75 miles of No. 1/0 cable, or 20 to 30 miles of 1000 kc mil cable, or equivalent, for switches rated 4.8 kV and 13.8 kV; 6 to 15 miles of No. 1/0 cable, or 4 to 6 miles of 1000 kc mil cable, or equivalent, for switches rated 25 kV and 34.5 kV.

◆ 100 amperes for switches rated 4.8 kV and 13.8 kV; 20 amperes for switches rated 25 kV and 34.5 kV.

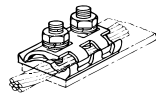
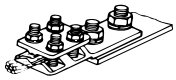
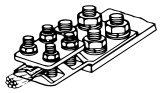
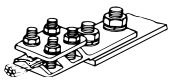
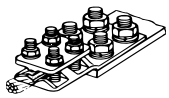
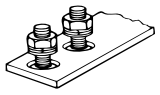
CONDITIONAL APPLICATIONS (See symbols in parentheses on pages 5 and 6)

Alduti-Rupter Switch Voltage Rating, kV	Application Symbol	Maximum Operating Voltage, Line-to-Line, kV①	Maximum Interrupting Duty
13.8	L	Over 9.0 and up through 17.0	10 amperes
34.5	K	Over 29.0 and up through 38.0	★

① Where maximum operating voltage for a conditional application is lower than the lowest range listed, refer to "APPLICATION CLASSIFICATIONS" table on pages 2 and 3 for applicable maximum interrupting duty values.

★ Line and cable dropping (charging current) only: 10 to 15 miles of line, or 0.6 to 1.5 miles of No. 1/0 cable or 0.4 to 0.6 mile of 1000 kc mil cable, or equivalent.

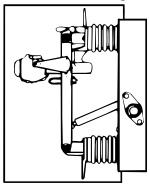
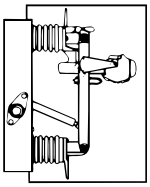
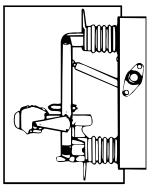
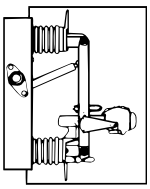
CONNECTORS

Illustration	Description	Accommodating Conductor	Catalog Number	
			For 600-Ampere Switches	For 1200-Ampere Switches
	Bronze Body, Tin Plated. Includes two ½″ –13 × 2½″ Galvanized Steel Bolts	No. 2 solid (33.6 mm^2) through 500 kc mil (335 mm^2) stranded copper or aluminum	4742■	—
 For 600-Ampere Switches or  For 1200-Ampere Switches	Standard Bronze Pad Terminal, Four-Bolt, Tin Plated. Includes two ½″–13 ×1½″ Galvanized Steel Bolts for attachment to terminal pads of switches	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 Switches or  For 1200-Ampere Switches	Standard Aluminum-Alloy Pad Terminal, Four-Bolt. Includes two ½″–13 ×1½″ Galvanized Steel Bolts for attachment to terminal pads of switches	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 ½″–13 × 2″ Galvanized Steel Bolts		4581■▲	—

■ Mechanical interference with blade prevents use on single-pole switches.

▲ When used with aluminum compression connectors, switch terminal pads should be tin plated. See “SPECIFICATION DEVIATIONS” on page 1.

ALDUTI-RUPTER SWITCHES—Three-Pole

Style	Rating							Applications (see pages 2 and 3)	Catalog Number⑤	Page Reference for Dimensional Information
	kV			Amperes, RMS						
	Nom.	Max	BIL	Cont. and Interr.	Short-Time		Fault-Closing, Duty-Cycle,② Two-Time③④			
					Mom. (Asym.)①	3-Sec (Sym.)				
Main Contact at Top Handle on Right 	4.8	5.5	60	600■	61 000	25 000●	61 000◆	AEFHK	34010R7	8
	4.8	5.5	60	1200	61 000	40 000	61 000◆	AEFHK	34020R3▲	
	13.8	17.0	95	600■	40 000	25 000	40 000	AEFHK	34012R7	
	13.8	15.0	95	1200	61 000	40 000	61 000◆	AEFHK	34022R3▲	
	25	29	125	600	40 000	25 000	28 000	AEFHK	234743R3★	
	34.5	38	150	600	40 000	25 000	28 000	AEFH(K)⑥	234614R6	
	34.5	38	200	600	40 000	25 000	28 000	AEFH(K)⑥	234814R7	
Main Contact at Top Handle on Left 	4.8	5.5	60	600■	61 000	25 000●	61 000◆	AEFHK	34110R7	9
	4.8	5.5	60	1200	61 000	40 000	61 000◆	AEFHK	34120R3▲	
	13.8	17.0	95	600■	40 000	25 000	40 000	AEFHK	34112R7	
	13.8	15.0	95	1200	61 000	40 000	61 000◆	AEFHK	34122R3▲	
	25	29	125	600	40 000	25 000	28 000	AEFHK	234753R3★	
	34.5	38	150	600	40 000	25 000	28 000	AEFH(K)⑥	234624R6	
	34.5	38	200	600	40 000	25 000	28 000	AEFH(K)⑥	234824R7	
Main Contact at Bottom Handle on Right 	4.8	5.5	60	600■	61 000	25 000●	61 000◆	AEFHK	234540R7	10
	4.8	5.5	60	1200	61 000	40 000	61 000◆	AEFHK	34240R3▲	
	13.8	17.0	95	600■	40 000	25 000	40 000	AEFHK	234542R7	
	13.8	15.0	95	1200	61 000	40 000	61 000◆	AEFHK	34242R3▲	
	25	29	125	600	40 000	25 000	28 000	AEFHK	234843R3★	
	34.5	38	150	600	40 000	25 000	28 000	AEFH(K)⑥	234714R6	
	34.5	38	200	600	40 000	25 000	28 000	AEFH(K)⑥	234914R7	
Main Contact at Bottom Handle on Left 	4.8	5.5	60	600■	61 000	25 000●	61 000◆	AEFHK	234640R7	11
	4.8	5.5	60	1200	61 000	40 000	61 000◆	AEFHK	34340R3▲	
	13.8	17.0	95	600■	40 000	25 000	40 000	AEFHK	234642R7	
	13.8	15.0	95	1200	61 000	40 000	61 000◆	AEFHK	34342R3▲	
	25	29	125	600	40 000	25 000	28 000	AEFHK	234853R3★	
	34.5	38	150	600	40 000	25 000	28 000	AEFH(K)⑥	234724R6	
	34.5	38	200	600	40 000	25 000	28 000	AEFH(K)⑥	234924R7	

① Momentary ratings of the 600-ampere switches, when used in combination with Type SM-5S or Type SM-5SS Power Fuses (S&C Alduti-Rupter Switches with Power Fuses), are increased to equal the interrupting rating of the fuse, i.e., up through 41,500 amperes at 7.2 kV; and 54,000 amperes at 13.8 kV and 14.4 kV, 60 hertz only (55,000 amperes on 7.2/12.47GrY-kV 60-hertz systems only).

② Duty-cycle fault-closing ratings define the ability to close the switch the specified number of times (one or two) against a three-phase fault with asymmetrical current in at least one phase equal to the rated value, with the switch remaining operable and able to carry and interrupt rated continuous current.

③ The two-time duty-cycle fault-closing ratings of the 600-ampere switches, when used in combination with Type SM-5S Power Fuses (S&C Alduti-Rupter Switches with Power Fuses), are 60,000 amperes at 4.16 kV; 43,500 amperes at 4.8 kV; and 41,500 amperes at 7.2 kV. Two-time duty-cycle fault-closing ratings have not been established for the 600-ampere switches in combination with Type SM-5SS Power Fuses.

④ The one-time duty-cycle fault-closing rating of the 600-ampere switches, when used in combination with Type SM-5SS Power Fuses (S&C Alduti-Rupter Switches with Power Fuses), is 54,000 amperes at 13.8 kV and 14.4 kV, 60 hertz only (55,000 amperes on 7.2/12.47GrY-kV 60-hertz systems only).

⑤ Top and bottom front-connected. These switches cannot be supplied for back connection. Switches are furnished with S&C Cypoxy® Insulators.

⑥ Applications indicated by symbols in parentheses are conditional. See "CONDITIONAL APPLICATIONS" table, page 3.

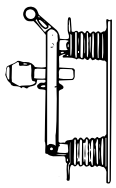
■ Nominal rating. Maximum rating is 720 amperes.

● 40,000 amperes RMS symmetrical 10-cycle short-time rating.

◆ One-time duty-cycle fault-closing rating. The two-time duty-cycle fault-closing rating is 40,000 amperes. For switches rated 13.8 kV nominal, the two-time duty-cycle fault-closing rating is applicable at system voltages up to 17.0 kV maximum.

▲ These switches are UL recognized.

★ Interphase barriers and side barriers are not required, nor furnished, with 25-kV three-pole switches.

ALDUTI-RUPTER SWITCHES—Single-Pole①									
Illustration	Rating						Applications (see pages 2 and 3)	Catalog Number②	Page Reference for Dimensional Information
	kV			Amperes, RMS					
	Nom.	Max	BIL	Continuous and Interrupting	Short-Time				
					Mom. (Asym.)	3-Sec (Sym.)			
	13.8	17.0	95	600	40 000	25 000	AEFGHK(L)③	20012R2	12

① For vertical or inverted mounting.

② Top and bottom front-connected. The switch cannot be supplied for back connection. Switch is furnished with S&C Cypoxy Insulators.

③ Applications indicated by symbols in parentheses are conditional. See "CONDITIONAL APPLICATIONS" table, page 3.

ACCESSORIES AND PARTS

Item	Type	For Use on Alduti-Rupter Switches Rated		Catalog Number
		kV	Amperes	
Interlock	Key	All	All	★
Spare or Replacement Interrupter, for three-pole switches	Single-bolt mounting	4.8▲	All	SA-30817R2
		13.8■◆	600	SA-30818R4
		13.8■	1200	SA-32664R2
	Two-stud mounting①	25, 34.5	600	SA-42790R1●
Spare or Replacement Interrupter, for single-pole switches	Single-bolt mounting	4.8▲	600	SA-30817R2
		4.8	1200‡	SA-35479
		13.8■	600	SA-30818R4
		13.8■	1200‡	SA-35480R2

① This is a Cypoxylated™ interrupter. *Cypoxylated* is the S&C trademark for devices employing the S&C Cypoxy cycloaliphatic epoxy resin system for multipurpose use as an assembly, encapsulation, and insulation medium.

▲ Also for use on discontinued 7.2-kV switches.

■ Also for use on discontinued 14.4-kV switches.

◆ Also for use on previous designs of 23-kV or 25-kV three-pole switches having the following catalog numbers:

34063	34063R1	34063R2
34163	34163R1	34163R2
		234553R2
		234653R2

‡ Previous designs of single-pole 1200-ampere switches (all those bearing catalog number supplement "-R8" or lower) require Catalog Number 4551R2 (4.8 kV) or 4552R4 (13.8 kV or 14.4 kV) interrupters (refer to Specification Bulletin 841-31).

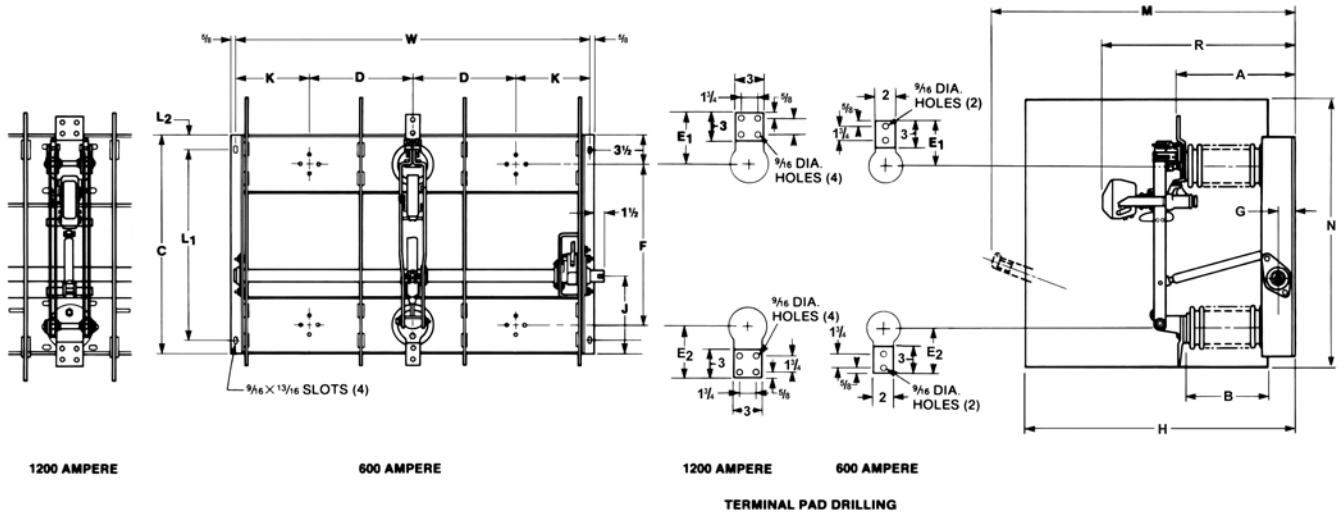
★ Order by description. Interlock manufacturer's net selling price will apply.

● For previous designs of 25-kV or 34.5-kV three-pole switches having the catalog numbers shown below and bearing the indicated (or lower) catalog number supplement, the live parts must be replaced as well. Order Catalog Number SDA-10063R1-1 (25 kV nom., 125 kV BIL), SDA-10063R1-2 (34.5 kV nom., 150 kV BIL), or SDA-10063R1-3 (34.5 kV nom., 200 kV BIL) which provides one interrupter and one set of live parts.

234743R1	234753R1	234843R1	234853R1
234614R4	234624R4	234714R4	234724R4
234814R5	234824R5	234914R5	234924R5

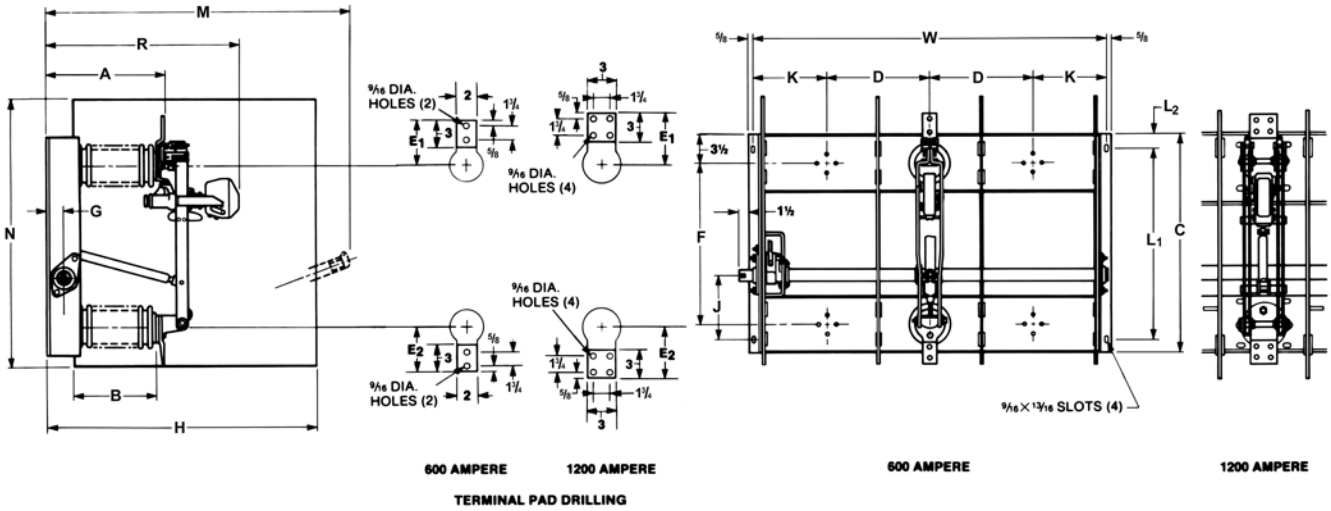
Three-Pole—Main Contact at Top

Handle on Right



Rating							Applications (see pages 2 and 3)	Catalog Number		
kV			Amperes, RMS							
Nom.	Max	BIL	Cont. and Interr.	Short-Time		Fault-Closing, Duty-Cycle, Two-Time		Main Contact at Top Handle on Right	Main Contact at Top Handle on Left	
				Mom. (Asym.)	3-Sec. (Sym.)					
4.8	5.5	60	600	61 000	25 000	61 000	AEFHK	34010R7	34110R7	
4.8	5.5	60	1200	61 000	40 000	61 000	AEFHK	34020R3	34120R3	
13.8	17.0	95	600	40 000	25 000	40 000	AEFHK	34012R7	34112R7	
13.8	15.0	95	1200	61 000	40 000	61 000	AEFHK	34022R3	34122R3	
25	29	125	600	40 000	25 000	28 000	AEFHK	234743R3	234753R3	
34.5	38	150	600	40 000	25 000	28 000	AEFH(K)	234614R6	234624R6	
34.5	38	200	600	40 000	25 000	28 000	AEFH(K)	234814R7	234824R7	

Handle on Left

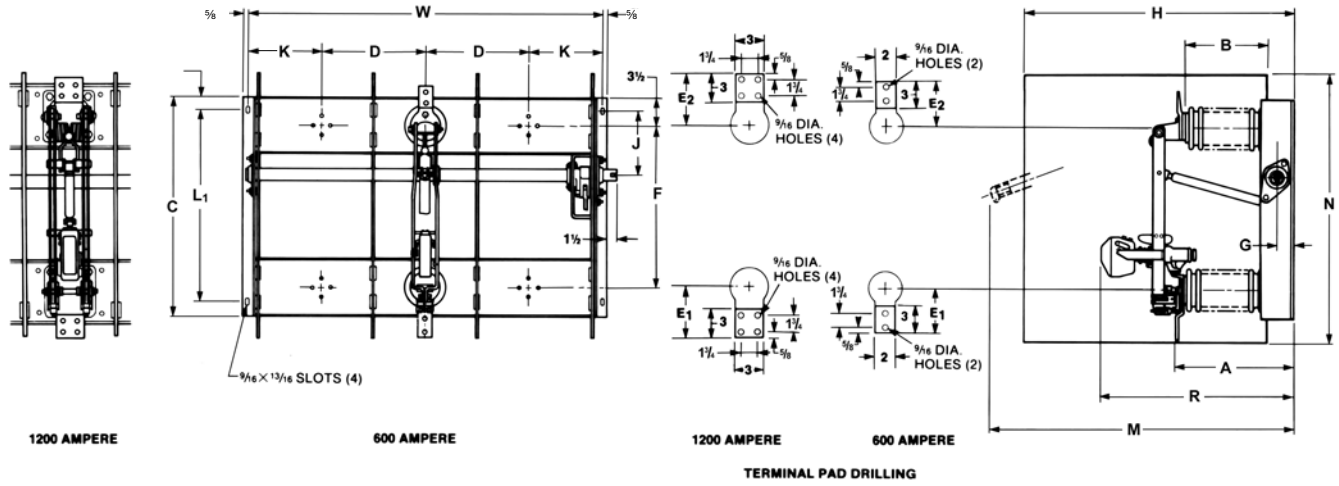


	Dimensions in Inches																Net Wt., Lbs.
	A	B	C	D	E_1	E_2	F	G	H	J	K	L_1	L_2	M	N	R	W	
	9¼	5	21½	8½	5½	5¼	15	2⁹⁄₁₆	19	6	6	17½	2	26½	26	16⅜	29	197
	10¾	5	21½	8½	5½	4¼	15	2⁹⁄₁₆	28	6	6	17½	2	26⅝	26	17⅞	29	236
	11¾	7½	26	10	5½	5¼	19	2⁹⁄₁₆	24¾	8½	7⅛	22	2	33⅝	30	22⅞	34¼	233
	13¼	7½	26	11	5½	4¼	19	2⁹⁄₁₆	34¾	8½	8⅛	22	2	32⅞	30	22⅞	38¼	281
	14	9	30	15	7	5½	23	2⅜	—	9	10¾	27	1½	41⅜	—	26⅛	51½	445
	19	14	30	15	7	5½	23	2⅜	31	9	10¾	27	1½	46⅜	38	31⅛	51½	609
	20	15	30	15	7	5½	23	2⅜	54⅝●	9	10¾	27	1½	47⅜	41●	32⅛	51½	683

● Dimension applies to largest barrier; viz., the side barrier adjacent to the quick-make quick-break mechanism.

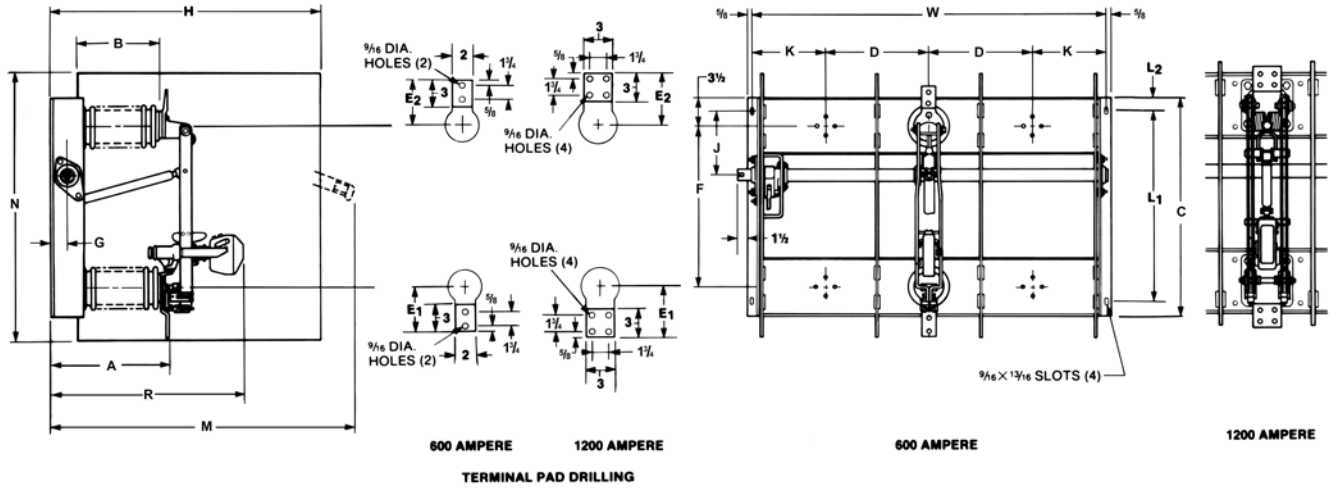
Three-Pole—Main Contact at Bottom

Handle on Right



Rating							Applications (see pages 2 and 3)	Catalog Number		
kV			Amperes, RMS							
Nom.	Max	BIL	Cont. and Interr.	Short-Time		Fault-Closing, Duty-Cycle, Two-Time		Main Contact at Top Handle on Right	Main Contact at Top Handle on Left	
				Mom. (Asym.)	3-Sec. (Sym.)					
4.8	5.5	60	600	61 000	25 000	61 000	AEFHK	234540R7	234640R7	
4.8	5.5	60	1200	61 000	40 000	61 000	AEFHK	34240R3	34340R3	
13.8	17.0	95	600	40 000	25 000	40 000	AEFHK	234542R7	234642R7	
13.8	15.0	95	1200	61 000	40 000	61 000	AEFHK	34242R3	34342R3	
25	29	125	600	40 000	25 000	28 000	AEFHK	234853R3	234853R3	
34.5	38	150	600	40 000	25 000	28 000	AEFH(K)	234724R6	234724R6	
34.5	38	200	600	40 000	25 000	28 000	AEFH(K)	234914R7	234924R7	

Handle on Left

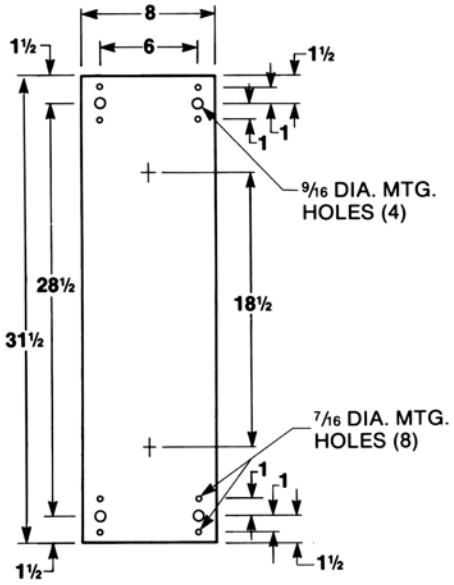


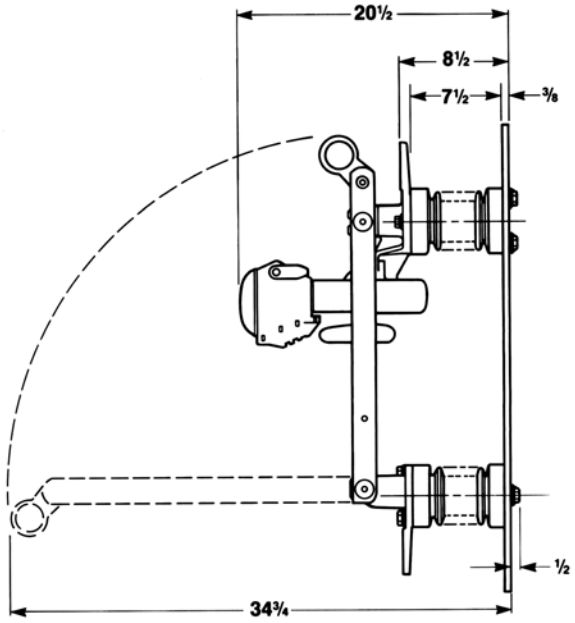
Dimensions in Inches																	Net Wt., Lbs.
A	B	C	D	E_1	E_2	F	G	H	J	K	L_1	L_2	M	N	R	W	
9¼	5	21½	8½	5½	5¼	15	2 3/16	19	6	6	17½	2	26½	26	16⅜	29	197
10¾	5	21½	8½	5½	4¼	15	2 3/16	28	6	6	17½	2	26⅝	26	17⅞	29	236
11¾	7½	26	10	5½	5¼	19	2 3/16	24¾	8½	7⅛	22	2	33⅝	30	22⅞	34¼	233
13¼	7½	26	11	5½	4¼	19	2 3/16	34¾	8½	8⅛	22	2	32⅞	30	22⅞	38¼	281
14	9	30	15	7	5½	23	2⅜	—	9	10¾	27	1½	41⅜	—	26⅛	51½	445
19	14	30	15	7	5½	23	2⅜	31	9	10¾	27	1½	46⅜	38	31⅛	51½	609
20	15	30	15	7	5½	23	2⅜	54⅝●	9	10¾	27	1½	47⅜	41●	32⅛	51½	683

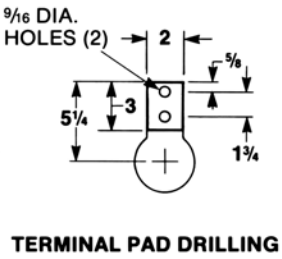
● Dimension applies to largest barrier; viz., the side barrier adjacent to the quick-make quick-break mechanism.

Single-Pole

Dimensions in inches







TERMINAL PAD DRILLING

Rating						Applications (see pages 2 and 3)	Catalog Number	Net Wt., Lbs.
kV			Amperes, RMS					
Nom.	Max	BIL	Cont. and Interr.	Short-Time				
				Mom. (Asym.)	3-Sec. (Sym.)			
13.8	17.0	95	600	40 000	25 000	AEFGHK(L)	20012R2	80

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