

## Specifications

### Conditions of Sale

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

### SPECIAL TO THIS PRODUCT:

**INCLUSIONS:** Series 2000 Circuit-Switchers incorporate major advancements in circuit-switcher interrupter and insulation design, ratings, configurations, and economy. These advancements make Series 2000 Circuit-Switchers especially well-suited for switching and protection of transformers, lines, cables, single shunt capacitor banks, and line-connected or tertiary-connected shunt reactors. Interrupting ratings for these applications are listed in Table 1 on page 4.

Series 2000 Circuit-Switchers use single-gap SF<sub>6</sub> puffer-type interrupters designed to close the circuit in six cycles, interrupt the circuit in six cycles, and maintain rated dielectric strength when open. These dual-function interrupters are factory-filled to full pressure under controlled conditions and then permanently sealed. Field filling is neither necessary nor possible, thus eliminating the risk of contaminating the interrupting medium. The interrupters are driven by a single, stored-energy mechanism located at ground level in the operator. The operator directly drives the interrupters open and closed through a simple high-speed power train leading from the top of the operator, through a horizontal interphase linkage enclosed in a steel-sheathed box-type base, to reciprocating-action insulated operating rods that pass through the center of insulating support columns.

Series 2000 Circuit-Switchers are available in a wide variety of mounting configurations to suit the broad spectrum of substation layouts and profiles. Model 2010 has horizontal interrupters and offers a vertical-break power-operated disconnect. This model is ideal for low-profile station layouts where an integral disconnect for the circuit-switcher is desired. Model 2040 also has horizontal interrupters but does not have a disconnect. It is well-suited for those low-profile station layouts where an integral disconnect is not necessary (for example, in existing stations already having a disconnect in series with the circuit-switcher).

Model 2020 has vertical interrupters and offers a side-break power-operated disconnect. This less expensive model is well-suited to installations where a low-profile configuration is not required and an integral disconnect is needed. Model 2030 also has vertical interrupters but does not have a disconnect, so it is ideal for such installations where an integral disconnect is not necessary.

All models are available in a 1200-ampere continuous current rating. In addition, Models 2010, 2030, and 2040, all rated 69 kV through 138 kV, are available in a 2000-ampere continuous current rating.

Models rated 69 kV through 138 kV with an integral disconnect are capable of opening and closing without hesitation under ¾-inch (19-mm) ice formation. Models rated 161 kV and 230 kV with an integral disconnect are capable of opening without hesitation under ¾-inch (19-mm) ice formation and of closing without hesitation under ½-inch (13-mm) ice formation.

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Series 2000 Circuit-Switcher includes a 48-Vdc or 125-Vdc operator. A 115-Volt, 60-Hertz operator is also available. The choice of operator control voltage and operator space-heater voltage—120 Volts, 60 Hertz or 240 Volts, 60 Hertz—are to be specified (see Table 6 on page 7).

Series 2000 Circuit-Switcher operators include the following:

- TRIP and CLOSE pushbuttons located inside the operator enclosure
- Manual trip lever—for tripping interrupters in the event control voltage is lost
- Manual charging handle, for opening disconnect after interrupters have been manually tripped open—in the event control voltage is lost (Models 2010 and 2020 only)
- Charged and discharged indicators for stored-energy mechanism
- Non-reset electric operation counter
- Eight nonadjustable single-pole double-throw auxiliary-switch contacts that follow the interrupters
- Weatherproof, dust-proof enclosure



### Conditions of Sale—Continued

- Decoupling mechanism that allows decoupling and locking of the disconnect-blade power train in the **Open** position, permitting operational checkout of the interrupters, the stored-energy mechanism, and the relaying equipment without closing the high-voltage circuit (Models 2010 and 2020 only).
- Two individually adjustable auxiliary- switch contacts that follow the disconnect-blade power train and operator when coupled, and the operator only when decoupled (Models 2010 and 2020 only)

The mechanism in the operator has an instantaneous trip-free capability: should the Series 2000 Circuit-Switcher be inadvertently closed into a fault sensed by user-furnished relaying, the mechanism will trip immediately. To accomplish trip-free operation, the mechanism uses two spring assemblies: one for closing, and one for opening. Both springs are charged by the operator motor before the Series 2000 Circuit-Switcher can be closed. Recharging time after a trip operation varies from 5 to 16 seconds, depending on model and voltage.

Series 2000 Circuit-Switchers include 96-inch (244-cm) high mounting pedestals. Mounting pedestals of 120-inch (305-cm), 144-inch (366-cm), 168-inch (427-cm), 192-inch (488-cm), 216-inch (549-cm), or 240-inch (610-cm) height are also available on most circuit-switchers. The choice of mounting pedestal height is to be specified (see Table 7 on page 9).

**EXCLUSIONS:** Series 2000 Circuit-Switchers do not include anchor bolts or connectors. Anchor bolts are available as indicated in Table 10 on page 13; specify quantity and catalog number of anchor bolts desired. Various connectors are available as listed in Table 9 on page 12; specify quantity and catalog number of connectors desired.

Series 2000 Circuit-Switchers do not include the services of an S&C field service specialist for evaluating the condition of the circuit-switcher.

**SPECIFICATION DEVIATIONS:** When Series 2000 Circuit-Switchers are to be provided with connectors other than those shown in Table 9 on page 12 (including all expansion, compression, and multi-conductor types), consult the nearest S&C Sales Office for availability.

Series 2000 Circuit-Switchers cannot be supplied less insulators, with insulators of lower voltage ratings, or with insulators of higher voltage ratings. Series 2000 Circuit-Switchers cannot be supplied with other than gray (Munsell Number 5 BG 7.0/0.4) standard station post insulators.

**USUAL OPERATING CONDITIONS:** Series 2000 Circuit-Switchers will perform as intended at temperatures within the range of  $-40^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$ ) to  $+40^{\circ}\text{C}$  ( $104^{\circ}\text{F}$ ), at altitudes of up to 5000 feet (1524 meters)●, and at wind loadings of up to 90 miles per hour. Further, Series 2000 Circuit-Switchers, when installed with the recommended S&C anchor bolts (see Table 10 on page 13) and with flexible-conductor connections at all six terminal pads, are capable of withstanding seismic loading of 0.2-g ground acceleration in any direction, as well as performing as intended during such loading and afterward. For applications at temperatures not within the specified range, at higher wind loadings, or where higher seismic withstand capabilities are required, refer to the nearest S&C Sales Office.

**SPECIAL WARRANTY PROVISIONS:** The standard warranty contained in the seller's standard conditions of sale, as set forth in Price Sheet 150, applies to S&C Series 2000 Circuit-Switchers and associated options, except that the first paragraph of said warranty is replaced by the following:

- (1) **General:** The seller warrants to the purchaser for a period of five years from the date of shipment that the equipment delivered will be of the kind and quality specified in the contract description and will be free of defects of workmanship and material. Should any failure to conform to this warranty appear under proper and normal use within five years after the date of shipment, the seller agrees, upon prompt notification thereof and confirmation that the equipment has been stored, installed, operated, inspected, and maintained in accordance with recommendations of the seller and standard industry practice, to correct the nonconformity either by repairing any damaged or defective parts of the equipment or (at the seller's option) by shipment of necessary replacement parts.

Replacement parts provided by the seller under the warranty for the original equipment will be covered by the original-equipment warranty for its duration. Replacement parts purchased separately will be covered by the warranty contained in the seller's standard conditions of sale, as set forth in Price Sheet 150.

● Series 2000 Circuit-Switchers can be installed at altitudes greater than 5000 feet (1524 meters) with derated BIL voltage. Refer to the nearest S&C Sales Office for details.

**WARRANTY QUALIFICATIONS:** Warranty of Series 2000 Circuit-Switchers is contingent upon both of the following:

- Installation and adjustment of Series 2000 Circuit-Switchers in accordance with S&C's applicable instruction sheets
- Conformance with the inspection recommendations defined in S&C Data Sheet 716-590

**How to Order**

**STEP 1.** Obtain the catalog number of the desired Circuit-Switcher from Tables 2 through 5 on pages 5 through 8. The tables are arranged according to circuit-switcher model.

Catalog Number:

**STEP 2.** Obtain the suffix for the desired standard features (to be specified), which are the operator control voltage, mounting pedestal height, and operator space-heater voltage, from Tables 6 and 7 on pages 8 and 9. Add the indicated suffix to the catalog number of the circuit-switcher selected in Step 1.

Suffix:

Catalog Number:

**STEP 3.** Obtain the suffix of desired optional feature(s) from Table 8 on pages 10 and 11. Add the indicated suffix(es) to the catalog number of the circuit-switcher selected in Step 1.

Suffix:

Catalog Number:

**STEP 4.** Obtain the catalog number of the required anchor bolts from Table 10 on page 13, taking care to note the quantity of anchor bolts required for the circuit-switcher selected.

Catalog Number:

**STEP 5.** Obtain the catalog number of the desired connector from Table 9 on page 12. Order six connectors for each circuit-switcher.

Catalog Number:

**NOTE:** Spare or replacement interrupters and enhanced-visibility low-gas pressure indicators—for retrofit applications—are ordered using the same method outlined above.

**Example:** For an S&C Series 2000 Circuit-Switcher Model 2010 rated 115 kV, 1200 A continuous, 25-kA fault interrupting, with 102-inch (259-cm) phase spacing, 48-Vdc operator control voltage, 120-inch-high (305-cm) mounting pedestals, 120-Volt 60-Hertz operator space heater voltage, grounding switch for jaw-contact terminal pads, and position-indicating lamps, specify “catalog number 197838-AE10H1G2M.” Anchor bolts and connectors are ordered separately; see Tables 9 and 10 on pages 12 and 13.

**1 9 7 8 3 8** **A E 1 0 H 1 G 2 M**

**NOTE:** For specifications on Series 2000 Circuit-Switcher Model 2020 rated 161 kV and 230 kV, refer to the nearest S&C Sales Office.

**Table 1. Interrupting Ratings**

Application			Maximum Amperes, Interrupting, RMS, Symmetrical			
Class	Qualifications		1200 A Cont. Design	2000 A Cont. Design <sup>①</sup>	40 kA Fault Inter. Design <sup>②③</sup>	
Transformer Switching and Protection	Parallel switching	—	1200	2000	1200	
	Load dropping <sup>⑥</sup>	—	1200	2000	1200	
	Fault interrupting <sup>⑦</sup>	Primary faults	69 kV through 138 kV	25 000●■▲	25 000●■▲	40 000■▲
			161 kV and 230 kV	20 000◆■▼	N/A	N/A
		Secondary faults		4000□△	4000□△	4000□△
Internal faults—see both primary and secondary faults, above						
Line Switching	Load splitting (parallel or loop switching)	—	1200	2000	1200	
	Load dropping	—	1200	2000	1200	
	Line dropping	69 kV through 138 kV	400	400	200	
		161 kV	320	N/A	N/A	
	Fault interrupting	Short-line faults, through 138 kV	20 000■	N/A	N/A	
Cable Switching and Protection	Load splitting (parallel or loop switching)	—	1200	2000	1200	
	Load dropping	—	1200	2000	1200	
	Line dropping	69 kV through 138 kV	400	400	200	
		161 kV	320	N/A	N/A	
	Fault interrupting <sup>⑦</sup>	69 kV through 138 kV	25 000●■▲	25 000●■▲	N/A	
161 kV		20 000◆■▼	N/A	N/A		
Single Shunt Capacitor-Bank Switching and Protection <sup>④⑤</sup>	Bank current switching	Grounded capacitor banks applied on solidly grounded systems only, through 138 kV	400	N/A	N/A	
		Ungrounded capacitor banks through 115 kV				
	Fault interrupting <sup>⑦</sup>	—	25 000●■▲	N/A	N/A	
Series Reactor Switching		Refer to nearest S&C Sales Office				
Shunt Reactor Switching and Protection <sup>④</sup> (line-connected or tertiary-connected reactors)	Reactor current switching	Grounded reactors applied on solidly grounded systems only, through 138 kV	600	N/A	N/A	
		Ungrounded reactors, 69 kV only				
	Fault interrupting <sup>⑦</sup>	—	25 000●■▲	N/A	N/A	

① Series 2000 Circuit-Switchers rated 2,000 amperes, RMS, continuous have not been tested or certified for capacitor or reactor switching and protection applications.

② 40,000-ampere circuit-switchers retain the 40,000-ampere fault interrupting rating from -40°C (-40°F) through +40°C (+104°F).

③ Series 2000 Circuit-Switchers rated 40,000 amperes fault interrupting have been tested and certified or transformer and line switching only.

④ BankGuard Plus® Controls, described and listed in S&C Specification Bulletin 1011-31, have the sensitivity to detect the first faulted unit in a capacitor bank or to respond promptly to a shorted-turns fault in a shunt reactor, but with the discrimination to disregard system and bank unbalances as well as spurious transients.

⑤ For applications on parallel (“back-to-back”) capacitor banks, refer to the nearest S&C Sales Office.

⑥ Series 2000 Circuit-Switcher can close, carry, and interrupt the magnetizing current of the protected transformer.

⑦ The interrupting ratings shown are applicable for the following duty cycles: O or CO.

● At temperatures between -40°C (-40°F) and -30°C (-22°F), the fault interrupting rating is 20,000 amperes.

■ Tripping of Series 2000 Circuit-Switcher must be coordinated with source-side protective equipment for short-circuit currents in excess of this value.

▲ Rating is based on transient recovery voltage parameters defined in Table IIA of IEC Standard 56: 1987 for Series 2000 Circuit-Switchers rated 69 kV, and Table IID of IEC Standard 56: 1987 for Series 2000 Circuit-Switchers rated 115 kV through 138 kV.

TABLE 1 FOOTNOTES CONTINUED ►

TABLE 1 FOOTNOTES CONTINUED

- ◆ Rating is based on transient-recovery-voltage parameters defined in Table 3 of ANSI Standard C37.06-1987.
- ▼ At temperatures between -40°C (-40°F) and -30°C (-22°F), the fault interrupting rating is 15,000 amperes.
- At temperatures between -40°C (-40°F) and -30°C (-22°F), the secondary-fault interrupting rating of 161-kV and 230 kV switches is 2,000 amperes.
- △ Series 2000 Circuit-Switcher is suitable for transformer-primary applications where the inherent secondary fault current—the secondary side fault current as reflected on the primary side of the transformer, assuming an infinite (zero-impedance) source—does not exceed 4000 amperes for a fault external to the transformer. The inherent secondary fault current may be calculated as follows:

$$I = 57.8P$$

$$(\%Z)E$$

where I = Inherent secondary fault current, amperes  
 P = Transformer self-cooled three-phase rating, kVA  
 E = Primary-side system phase-to-phase voltage, kV  
 %Z = Percent transformer primary-to-secondary impedance, referred to transformer self-cooled three-phase kVA rating

For applications where the inherent secondary fault current exceeds the above limits but where the maximum expected fault current, based on transformer impedance plus source impedance (anticipating future system growth), is within these limits, contact the nearest S&C Sales Office.

Table 2. Model 2010—With Horizontal Interrupters and Vertical-Break Power-Operated Disconnect

kV			Rating					Phase Spacing, Inches (mm)	Circuit-Switcher Catalog Number	Page Reference for Dimensional Information					
Nom.	Max	BIL	Cont.	Peak Withstand, Peak	Amperes		Fault- Closing, RMS, Sym.①				Fault Interrupting, RMS, Sym.				
					0.25-Sec.	1-Sec.									
69	72.5	350	1200	130 000	50 000	40 000	40 000	25 000	48 (1219)	197436	16				
				104 000	40 000			40 000■		198436					
				130 000	50 000			25 000	84 (2134)	197736					
				104 000	40 000			40 000■		198736					
			2000●	104 000	40 000	40 000	40 000	25 000	48 (1219)	197446	16				
				25 000	84 (2134)	197746									
			115	121	550	1200	130 000	50 000	40 000	40 000	25 000	84 (2134)	197738	18	
							104 000	40 000			40 000▲		198738		
130 000	50 000	25 000					102 (2591)	197838							
104 000	40 000	40 000▲						198838							
2000●	104 000	40 000				40 000	40 000	25 000	84 (2134)	197748	18				
	25 000	102 (2591)				197848									
138	145	650				1200	130 000	50 000	40 000	40 000	25 000	84 (2134)	197739		18
							104 000	40 000			40 000▲		198739		
			130 000	50 000	25 000		102 (2591)	197839							
			104 000	40 000	40 000▲			198839							
			2000●	104 000	40 000	40 000	40 000	25 000	84 (2134)	197749	18				
				25 000	102 (2591)	197849									
			161	169	750	1200	130 000	50 000	40 000	40 000	20 000	120 (3048)	187030▲	18	
			230	242	900	1200	130 000	50 000	40 000	40 000	20 000	120 (3048)	197030▲	20	
										197031					

① One-time duty-cycle. Rating expressed in amperes peak is 2.6 times the symmetrical value listed (or 104,000 amperes).  
 ● This circuit-switcher has not been tested or certified for capacitor or reactor switching and protection applications.

■ This circuit-switcher is only tested and certified for transformer switching and protection. For other applications, refer to the nearest S&C Sales Office.

▲ Catalog number 187030 is furnished with a set of two mounting pedestals. Catalog number 197030 is furnished with a set of three mounting pedestals.

# Series 2000 Circuit-Switchers

**Table 3. Model 2020—With Vertical Interrupters and Side-Break Power-Operated Disconnect**

Rating									Phase Spacing, Inches (mm)	Circuit-Switcher Catalog Number	Page Reference for Dimensional Information
kV			Amperes								
Nom.	Max	BIL	Cont.	Peak Withstand, Peak	Short-Time Withstand, RMS, Sym.		Fault-Closing, RMS, Sym. ①	Fault Interrupting, RMS, Sym.			
					0.25-Sec.	1-Sec.					
69	72.5	350	1200	104 000	40 000	40 000	40 000	25 000	48 (1219)	397436	22
								40 000●		398436	
								25 000	84 (2134)	397736	24
								40 000●		398736	
115	121	550	1200	104 000	40 000	40 000	40 000	25 000	84 (2134)	397738	
								40 000●		398738	
								25 000	102 (2591)	397838	
								40 000●		398838	
138	145	650	1200	104 000	40 000	40 000	40 000	25 000	84 (2134)	397739	
								40 000●		398739	
								25 000	102 (2591)	397839	
								40 000●		398839	

① One-time duty-cycle. Rating expressed in amperes peak is 2.6 times the symmetrical value listed (or 104,000 amperes).

● This circuit-switcher is only tested and certified for transformer switching and protection. For other applications, refer to the nearest S&C Sales Office.

Table 4. Model 2030—With Vertical Interrupters and Without Disconnect

Rating											Phase Spacing, Inches (mm)	Circuit-Switcher Catalog Number	Page Reference for Dimensional Information		
kV			Amperes												
Nom.	Max	BIL	Cont.	Peak Withstand, Peak	Short-Time Withstand, RMS, Sym.		Fault-Closing, RMS, Sym.①	Fault Interrupting, RMS, Sym.							
					0.25-Sec.	1-Sec.									
69	72.5	350	1200	130 000	50 000	40 000	40 000	25 000	48 (1219)	597436	26				
				104 000	40 000			40 000■		598436					
				130 000	50 000			25 000	84 (2134)	597736	28				
				104 000	40 000			40 000■		598736					
			2000●	104 000	40 000	40 000	40 000	25 000	48 (1219)	597446	26				
									84 (2134)	597746					
			115	121	550	1200	130 000	50 000	40 000	40 000	25 000	84 (2134)	597738	28	
							104 000	40 000			40 000■		598738		
130 000	50 000	25 000					102 (2591)	597838							
104 000	40 000	40 000■						598838							
2000●	104 000	40 000				40 000	40 000	25 000	84 (2134)	597748	28				
									102 (2591)	597848					
138	145	650				1200	130 000	50 000	40 000	40 000	25 000	84 (2134)	597739		28
							104 000	40 000			40 000■		598739		
			130 000	50 000	25 000		102 (2591)	597839							
			104 000	40 000	40 000■			598839							
			2000●	104 000	40 000	40 000	40 000	25 000	84 (2134)	597749	28				
									102 (2591)	597849					
			161	169	750	1200	130 000	50 000	40 000	40 000	20 000	120 (3048)	587030▲	28	
													597030▲	30	
230	242	900	1200	130 000	50 000	40 000	40 000	20 000	120 (3048)	597031					

① One-time duty-cycle. Rating expressed in amperes peak is 2.6 times the symmetrical value listed (or 104,000 amperes).  
 ● This circuit-switcher has not been tested or certified for capacitor or reactor switching and protection applications.

■ This circuit-switcher is only tested and certified for transformer switching and protection. For other applications, refer to the nearest S&C Sales Office.

▲ Catalog number 587030 is furnished with a set of two mounting pedestals. Catalog number 597030 is furnished with a set of three mounting pedestals.

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**Table 5. Model 2040—With Horizontal Interrupters and Without Disconnect**

Rating										Phase Spacing, Inches (mm)	Circuit-Switcher Catalog Number	Page Reference for Dimensional Information			
kV			Amperes												
Nom.	Max	BIL	Cont.	Peak Withstand, Peak	Short-Time Withstand, RMS, Sym.		Fault-Closing, RMS, Sym. ①	Fault Interrupting, RMS, Sym.							
					0.25-Sec.	1-Sec.									
69	72.5	350	1200	130 000	50 000	40 000	40 000	25 000	48 (1219)	697436	32				
				104 000	40 000			40 000■		698436					
				130 000	50 000			25 000		84 (2134)		697736			
				104 000	40 000			40 000■				698736			
			2000●	104 000	40 000	40 000	40 000	25 000	48 (1219)	697446					
									84 (2134)	697746					
			115	121	550	1200	130 000	50 000	40 000	40 000	25 000	84 (2134)	697738	34	
							104 000	40 000			40 000■		698738		
130 000	50 000	25 000					102 (2591)	697838							
104 000	40 000	40 000■						698838							
2000●	104 000	40 000				40 000	40 000	25 000	84 (2134)	697748					
									102 (2591)	697848					
138	145	650				1200	130 000	50 000	40 000	40 000	25 000	84 (2134)	697739		34
							104 000	40 000			40 000■		698739		
			130 000	50 000	25 000		102 (2591)	697839							
			104 000	40 000	40 000■			698839							
			2000●	104 000	40 000	40 000	40 000	25 000	84 (2134)	697749					
									102 (2591)	697849					
			161	169	750	1200	104 000	40 000	40 000	40 000	20 000	102 (2591)	697830▲	36	
							130 000	50 000	40 000	40 000	20 000	120 (3048)	687030▲	34	
										697030▲	36				
230	242	900	1200	130 000	50 000	40 000	40 000	20 000	120 (3048)	697031					

① One-time duty-cycle. Rating expressed in amperes peak is 2.6 times the symmetrical value listed (or 104,000 amperes).

● This circuit-switcher has not been tested or certified for capacitor or reactor switching and protection applications.

■ This circuit-switcher is only tested and certified for transformer switching and protection. For other applications, refer to the nearest S&C Sales Office.

▲ Catalog number 687030 is furnished with a set of two mounting pedestals. Catalog numbers 697030 and 697830 are furnished with a set of three mounting pedestals.

**Table 6. Standard Features—To Be Specified ①**

Feature		Suffix to be Added to Circuit-Switcher Catalog Number	Applicable to Circuit-Switcher		
Item	Description		Model	Rating, kV	Phase Spacing, Inches (mm)
Operator control voltage (select desired voltage)	48 Vdc	-A	All	All	All
	125 Vdc	-B	All	All	All
	115 V, 60 Hz	-D	All	All	All
Operator space-heater voltage (select desired voltage)	Regular wattage	120 V, 60 Hz	-H1	All	All
		240 V, 60 Hz	-H2		
	Reduced wattage	120 V, 60 Hz	-H3		

① Specify operator control voltage by adding suffix “-A,” “-B,” or “-D” to the circuit-switcher catalog number. Specify operator space-heater voltage by adding suffix “-H1,” “-H2,” or “-H3” to the circuit-switcher catalog number.



Table 7. Mounting Pedestals—To Be Specified<sup>①②③</sup>

Description	Suffix to be Added to Circuit-Switcher Catalog Number	Applicable to Circuit-Switcher		
		Model	Rating, kV	Phase Spacing, Inches (mm)
96 inch (2438 mm)	-E8	All	All	All
120 inch (3048 mm)	-E10	All	69	48 (1219)
			69	84 (2134)
		2010, 2030, and 2040	115,138, and 161●	84, 102, and 120 (2134, 2591, and 3048)
144 inch (3658 mm)	-E12	All	69	48 (1219)
			69	84 (2134)
		2010, 2030, and 2040	115, 138, and 161●	84, 102, and 120 (2134, 2591, and 3048)
168 inch (4267 mm)	-E14	All	69	48 (1219)
			69	84 (2134)
		2010, 2030, and 2040	115, 138, and 161●	84, 102, and 120 (2134, 2591, and 3048)
192 inch (4877 mm)	-E16	All	69	48 (1219)
			69	84 (2134)
		2010, 2030, and 2040	115, 138, and 161●	84, 102, and 120 (2134, 2591, and 3048)
216 inch (5486 mm)	-E18	All	69	48 (1219)
			69	84 (2134)
			115 and 138	84 and 102 (2134 and 2591)
		2030	161●	120 (3048)
2010, 2030, and 2040	161 and 230■	102 and 120 (2591 and 3048)		
240 inch (6096 mm)	-E20	All	69	48 (1219)
			69	84 (2134)
			115 and 138	84 and 102 (2134 and 2591)
		2030	161●	120 (3048)
		2010, 2030, and 2040	161 and 230■	102 and 120 (2534 and 3048)

① Specify mounting pedestal height by adding suffix “-E8,” “-E10,” “-E12,” “-E14,” “-E16,” “-E18,” or “-E20” to the circuit-switcher catalog number.

② 12-inch (305-mm) square steel-tube construction, galvanized finish. Single column for circuit-switchers rated 69 kV (with 48-inch (1219-mm) phase spacing); set of two for circuit-switchers rated 69 kV (with 84-inch (2134-mm) phase spacing), 115 kV, 138 kV, and 161 kV; set of three for circuit-switchers rated 161 kV and 230 kV.

③ Galvanized steel anchor bolts are available at an extra charge. See Table 10 on page 13.

● 161-kV two-pedestal mounting structure. Model 2020 is not available at 161 kV.

▲ Three mounting pedestals.

## Series 2000 Circuit-Switchers

**Table 8. Optional Features**

Item	Suffix to be Added to Circuit-Switcher Catalog Number	Applicable to Circuit-Switcher	
		Model	Rating, kV
Bypass accessory, single-pole, stick-operated, set of three, 1200 amperes continuous, 61,000 amperes momentary rating. Permits operational checkout of the circuit-switcher and relaying equipment without opening high-voltage circuit <sup>①</sup>	-F	2010	69 115 138 161 230
		2040	69 115 138 161 230
Bypass accessory, single-pole, stick-operated, set of three, 900 amperes continuous, 40,000 amperes momentary rating. Permits operational checkout of the circuit-switcher and relaying equipment without opening high-voltage circuit <sup>①②</sup>	-F1	2030	69 115 138 161
Grounding switch, manual, three-pole, group-operated, 64,000 amperes momentary rating, with flexible straps for current transfer at hinge end of grounding-switch blades; blades parallel to pole-unit bases when in open position. Grounds jaw-contact terminal pads of Models 2010 and 2020 <sup>①</sup>	-G2	2010 and 2020	69 115 138 161 230
Grounding switch, manual, three-pole, group-operated, 64,000 amperes momentary rating, with flexible straps for current transfer at hinge end of grounding-switch blades; blades parallel to pole-unit bases when in open position. Grounds interrupter-end terminal pads	-G4	2010	69 115 138 161 230
Grounding switch, manual, three-pole, group-operated, 64,000 amperes momentary rating, with flexible straps for current transfer at hinge end of grounding-switch blades; blades perpendicular to base when in open position. Grounds lower terminal pads <sup>②</sup>	-G6	2030	69 115 138 161 230
Deletion of TRIP and CLOSE pushbuttons located inside operator enclosure <sup>③</sup>	-J	All	All
Space heater thermostat for operator	-K	All	All
Key interlock located inside operator enclosure. Key may be removed when interrupters are tripped—thereby locking the interrupters open and disconnecting the control circuit. Key may then be used in interlock associated with grounding switch (such as Key Interlock option suffix “-L4”), or other device	-L1	All	All
Key interlock mounted on grounding-switch manual operating handle. Works in conjunction with Key Interlock option suffix “-L1” to guard against operating grounding switch with disconnect blades closed or with interrupters closed	-L4	All	All
International crating. Wood products used in the packaging are either hardwood or certified by the wood supplier as being “heat treated” (kiln dried) to a core temperature of 133°F (56°C) for a minimum of 30 minutes	-L71	All	All

<sup>①</sup> Not available for Series 2000 Circuit-Switchers rated 2000 amperes continuous.

<sup>②</sup> Catalog number suffix “-F1” cannot be furnished if catalog number suffix “-G6” is specified, and vice versa.

<sup>③</sup> Catalog number suffix “-J” cannot be furnished if catalog number suffix “-Y” is specified, and vice versa.

TABLE CONTINUED ►

**Table 8. Optional Features—Continued**

Item	Suffix to be Added to Circuit-Switcher Catalog Number	Applicable to Circuit-Switcher	
		Model	Rating, kV
Position-indicating lamps (one red, one green) located inside operator enclosure. Lamps are wired in series with trip coil, for local indication of circuit-switcher position and operator trip-circuit continuity <sup>①</sup>	-M	All	All
Enhanced-visibility low-gas-pressure indicator. Increases visibility of low-gas-pressure indicator when viewed from close proximity to the circuit-switcher base	-N	2020 2030	All
Low-Temperature Interrupters. For applications where temperature regularly falls below -40°F (-40°C). Includes modified red-target indicators	-N2	All	All
Anti-pump circuit. For applications where user's control scheme utilizes closing contact which is maintained longer than 6 seconds. Prevents alternating opening and closing attempts in the event Circuit-Switcher is closed into a fault, by causing circuit-switcher to remain open	-P	All	All
Remote gas-density monitor. Permits monitoring of SF <sub>6</sub> gas density in each interrupter. Includes two alarm relays that actuate at preset gas densities, system status alarm relay, 0- to 1-mA analog outputs for each interrupter, and a liquid crystal display inside the operator enclosure <sup>②</sup>	-R	All	All
Trip-circuit-monitoring relay wired in series with operator trip coil. Monitors continuity of trip circuit. Includes one normally open and one normally closed contact suitable for use with remotely located indicating lamps or alarms <sup>③</sup>	-T	All	All
Loss of control voltage relay (ac/dc). Provides appropriate contacts for use in, for example, a user-furnished alarm system	-T2	All	All
Disconnect/interrupter simultaneous-opening circuit. For applications where user's protective-relay contact closure is to initiate disconnect blade opening simultaneously with interrupter tripping	-U	2010 2020	All
Duplex receptacle with ground-fault circuit interrupter and convenience-light lampholder with switch located inside operator enclosure	-V	All	All
Eight additional nonadjustable single-pole double-throw auxiliary-switch contacts in operator that follow the interrupters	-W1	All	All
Local-remote selector switch. Prevents remote operation of operator when selector switch is placed in Local mode as, for example, during inspection <sup>③</sup>	-Y	All	All

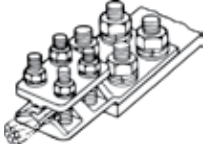
<sup>①</sup> Not available in applications furnished with an S&C Circuit-Switcher Relay and Control Pack.

<sup>②</sup> The remote gas-density monitor is suitable for circuit-switchers on mounting pedestals up to 20 feet (610 cm) high. For installation on mounting pedestals over 20 feet (610 cm) high, refer to the nearest S&C Sales Office.

<sup>③</sup> Catalog number suffix "-J" cannot be furnished if catalog number suffix "-Y" is specified, and vice versa.

## Series 2000 Circuit-Switchers

**Table 9. Connectors**<sup>①</sup>

Illustration	Description	Accommodating Conductor	Catalog Number <sup>②</sup>
	Standard bronze pad terminal, four-bolt, tin plated. Includes ½-inch galvanized steel hardware for attachment to terminal pads of circuit-switchers	2/0 stranded (89 mm <sup>2</sup> ) through 800 kc mil (539 mm <sup>2</sup> ) copper	4568R1
		4/0 stranded (141 mm <sup>2</sup> ) through 1000 kc mil (673 mm <sup>2</sup> ) copper	4569R1
	Standard aluminum-alloy pad terminal, four-bolt. Includes ½-inch galvanized steel hardware for attachment to terminal pads of circuit-switchers	250 kc mil (167.5 mm <sup>2</sup> ) through 400 kc mil (268.5 mm <sup>2</sup> ) copper or aluminum	5329
		350 kc mil (235.0 mm <sup>2</sup> ) through 600 kc mil (404.1 mm <sup>2</sup> ) copper or aluminum	5331
		600 kc mil (404.1 mm <sup>2</sup> ) through 900 kc mil (606.4 mm <sup>2</sup> ) copper or aluminum	5333
		900 kc mil (606.4 mm <sup>2</sup> ) through 1250 kc mil (841.9 mm <sup>2</sup> ) copper or aluminum	5334

<sup>①</sup> Connectors listed are suitable only for applications through 161 kV. For connectors for higher voltage applications, refer to the nearest S&C Sales Office.

<sup>②</sup> Add suffix letter to the catalog number to specify appropriate mounting bolt length as follows:

- “-A” for ½–13×1
- “-B” for ½–13×1½
- “-C” for ½–13×2

Table 10. Anchor Bolts for Mounting Pedestals<sup>①</sup>

Applicable to Circuit-Switcher				Anchor Bolt	
Model	Rating, kV	Phase Spacing, Inches (mm)	Mounting Pedestal Height, Inches (mm)	Quantity Required	Catalog Number <sup>②</sup>
2010	69	48 (1219)	96 through 144 (2438 through 3658)	4	S-81365-2
			168 through 240 (4267 through 6096)		S-81365-3
		84 (2134)	96 through 144 (2438 through 3658)	8	S-81365-1
			168 through 240 (4267 through 6096)		S-81365-2
	115 and 138	84 and 102 (2134 and 2591)	96 through 144 (2438 through 3658)	8	S-81365-1
			168 through 240 (4267 through 6096)		S-81365-2
	161●	120 (3048)	96 through 192 (2438 through 4877)	8	S-81365-2
	161 and 230■	120 (3048)	96 through 144 (2438 through 3658)	12	S-81365-1
168 through 240 (4267 through 6096)			S-81365-1		
2020 and 2040	69	48 (1219)	96 through 192 (2438 through 4877)	4	S-81365-2
			216 and 240 (5486 and 6096)		S-81365-3
		84 (2134)	96 through 144 (2438 through 3658)	8	S-81365-1
			168 through 240 (4267 through 6096)		S-81365-2
	115 and 138	84 and 102 (2134 and 2591)	96 through 144 (2438 through 3658)	8	S-81365-1
			168 through 240 (4267 through 6096)		S-81365-2
	161●	120 (3048)	96 through 192 (2438 through 4877)	8	S-81365-2
	161 and 230■	102 and 120 (2591 and 3048)	96 through 144 (2438 through 3658)	12	S-81365-1
168 through 240 (4267 through 6096)			S-81365-1		
2030	69	48 (1219)	96 through 240 (2438 through 6096)	4	S-81365-2
		84 (2134)	96 through 240 (2438 through 6096)	8	S-81365-1
	115 and 138	84 and 102 (2134 and 2591)	96 through 240 (2438 through 6096)	8	S-81365-1
	161●	120 (3048)	96 through 168 (2438 through 4267)	8	S-81365-1
			192 through 240 (4877 through 6096)		S-81365-2
	161 and 230■	120 (3048)	96 through 144 (2438 through 3658)	12	S-81365-1
			168 through 240 (4267 through 6096)		S-81365-1

① Each anchor bolt is of galvanized steel and is furnished with two hex nuts and two flat washers to facilitate leveling the mounting pedestals.

● Two-pedestal design.  
 ■ Three-pedestal design.

② Nominal sizes for the anchor bolts are as follows:

- S-81365-1: 1 × 2–9 (25 mm × 838 mm)
- S-81365-2: 1¼ × 3–8 (32 mm × 1118 mm)
- S-81365-3: 1½ × 4–6 (38 mm × 1372 mm)

Table 11. Spare Interrupters

Applicable to Circuit-Switcher Rated			Interrupter <sup>①</sup> Catalog Number
Nominal Voltage, kV	Amperes, RMS		
	Continuous	Fault Interrupting	
69 through 138	1200	25 000	SA-41695-A
			SA-41695-1-A●
			SXA-2218-A■
			SXA-2218-1-A●■
		SXA-4510-A	
		SXA-4510-1-A●	
	2000	40 000	SXA-4534-A■
			SXA-4534-1-A●■
			SXA-4452-A
			SXA-4452-1-A●
			SXA-4500-A■
			SXA-4500-1-A●■
161 and 230	1200	20 000	SA-42900-A
			SA-42900-1-A●
			SXA-2219-A■
			SXA-2219-1-A●■

① Interrupter exhibiting low gas-pressure indication (red target) and having porcelain housing in good condition may be exchanged for a new interrupter. To ensure proper handling, refer to the nearest S&C Sales Office to obtain a special serially numbered label to place on the shipping container. Enclose a packing slip showing purchase order or requisition number covering the exchange. Ship the replaced interrupter, transportation charges prepaid, to S&C Electric Company, Repair Center. For product returns, contact the local S&C representative for proper return material authorization documentation.

● Low-temperature interrupter intended for circuit-switchers furnished with catalog number suffix “-N2.”

■ This interrupter is outfitted with sensing equipment for the remote gas-density monitor and includes a new transmitter. It is intended for a circuit-switcher already equipped with a remote gas-density monitor, and does not include a complete monitoring system. If a complete remote gas-density monitor is desired, refer to the nearest S&C Sales Office.

**Table 12. Enhanced-Visibility Low-Gas-Pressure Indicator<sup>①</sup>**

Applicable to Circuit-Switcher		Enhanced-Visibility Low-Gas-Pressure Indicator
Model	Rating, kV	Catalog Number
2020 and 2030	All	SXA-2208

① Increases visibility of low-gas-pressure indicator when viewed from close proximity to the circuit-switcher base.

**Table 13. Spare or Replacement Parts for Remote Gas-Density Monitor Option**

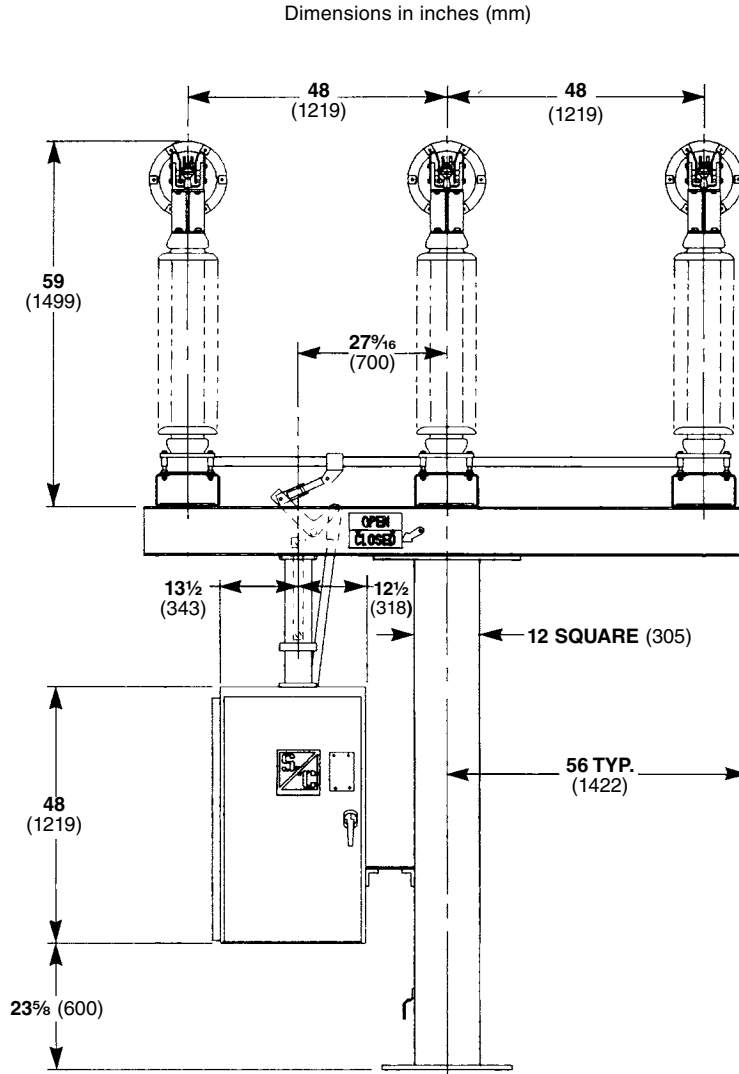
Item	Model	Rating, kV	Catalog Number
Transmitter battery	All	All	9933-547●
Magnet tool. For use in programming and testing receiver	All	All	SXA-2231

● Catalog number SXA-2234 for circuit-switchers manufactured before July 2000.

# Series 2000 Circuit-Switchers

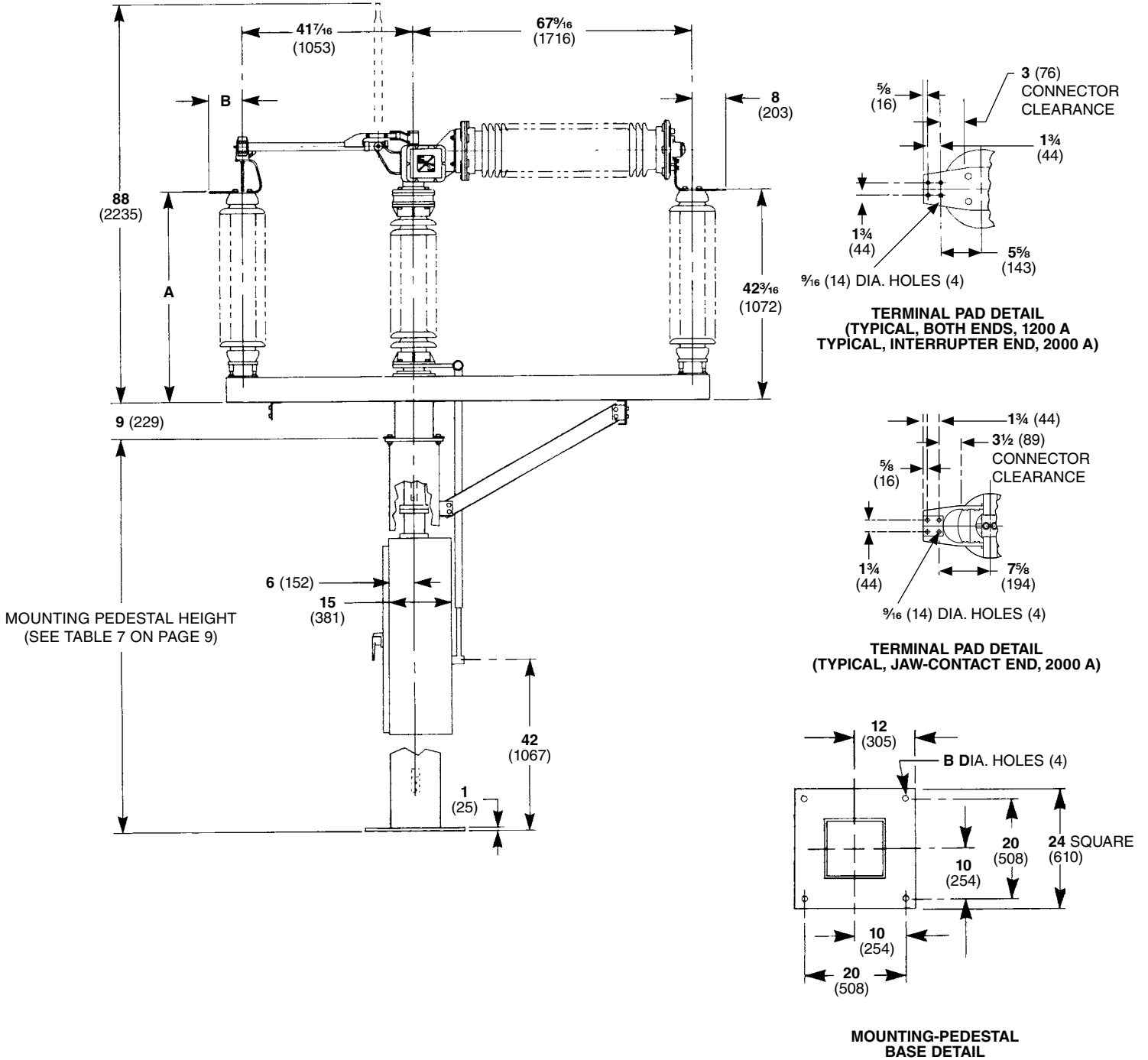
## Model 2010

With Horizontal Interrupters and Vertical-Break Power-Operated Disconnect  
69 kV, 48-Inch (1219-mm) Phase Spacing—Single Mounting Pedestal



Rating					Catalog Number	Dimensions in Inches (mm)		Net Weight, Lbs. (kg)
kV			Amperes, RMS			A	B	
Nom.	Max	BIL	Cont.	Fault-Interrupting, Sym.				
69	72.5	350	1200	25 000	197436	42½ (1070)	8 (203)	5200 (2359)
				40 000	198436			
			2000	25 000	197446	52½ (1334)	10 (254)	





**Anchor Bolt Hole Diameter**

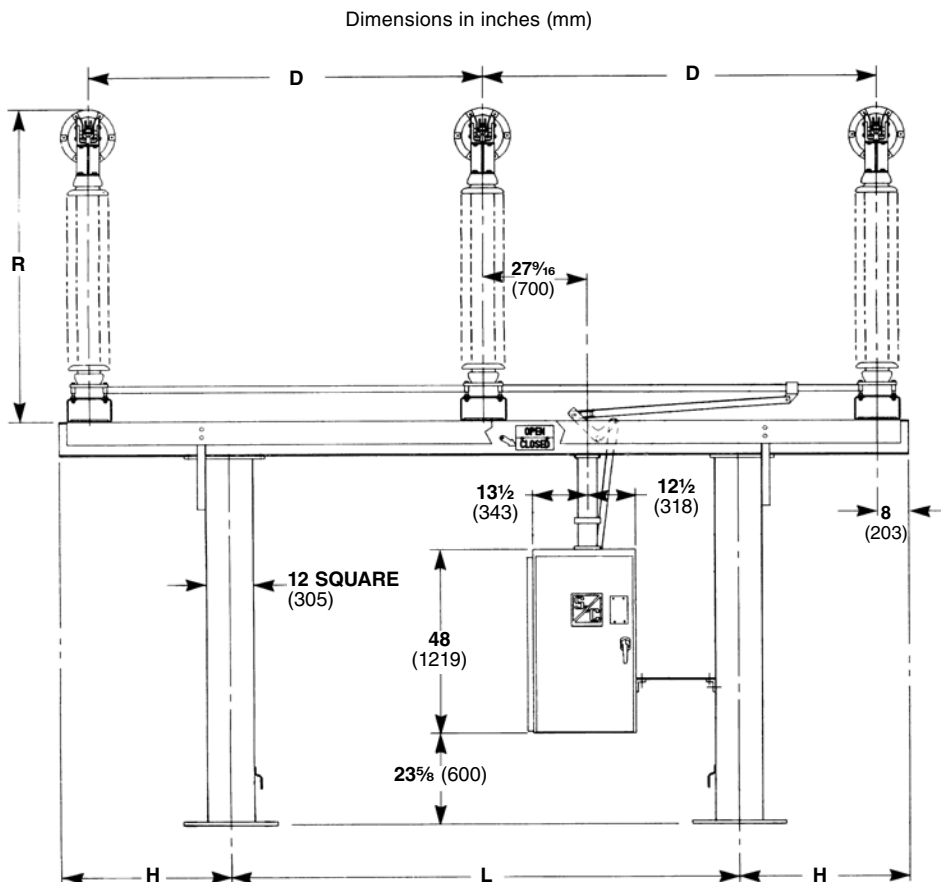
Mounting Pedestal Height, Inches (mm)	Anchor Bolt Hole Diameter, B, Inches (mm)
96 through 144 (2438 through 3658)	1 1/2 (38)
168 through 240 (4267 through 6096)	1 3/4 (44)

# Series 2000 Circuit-Switchers

## Model 2010

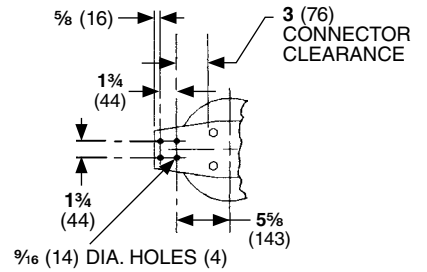
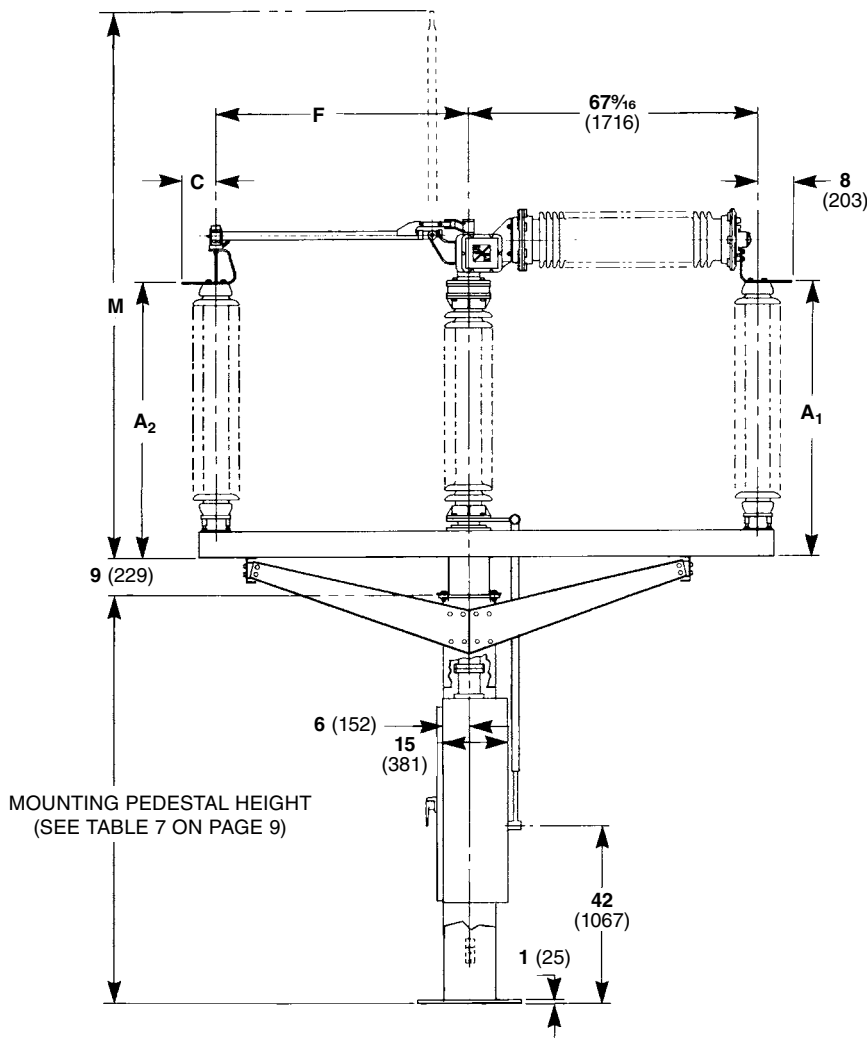
With Horizontal Interrupters and Vertical-Break Power-Operated Disconnect

69 kV, 84-Inch (2134-mm) Phase Spacing; 115 kV; 138 kV and 161 kV—Two Mounting Pedestals

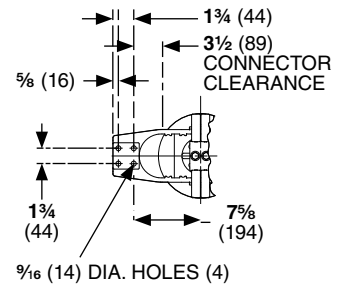


Rating						Dimensions in Inches (mm)						
kV			Amperes, RMS		Catalog Number	A <sub>1</sub>	A <sub>2</sub>	C	D	F	H	L
Nom.	Max	BIL	Cont.	Fault-Interrupting, Sym.								
69	72.5	350	1200	25 000	197736	42 1/8 (1070)	42 1/8 (1070)	8 (203)	84 (2134)	41 7/16 (1053)	38 (965)	108 (2743)
				40 000	198736							
			2000	25 000	197746	42 1/8 (1070)	52 1/2 (1334)	10 (254)	84 (2134)	41 7/16 (1053)	38 (965)	108 (2743)
115	121	550	1200	25 000	197738	55 1/4 (1403)	55 1/4 (1403)	8 (203)	84 (2134)	58 7/16 (1484)	38 (965)	108 (2743)
				40 000	198738							
			2000	25 000	197748	55 1/4 (1403)	65 1/2 (1664)	10 (254)	84 (2134)	58 7/16 (1484)	38 (965)	108 (2743)
			1200	25 000	197838	55 1/4 (1403)	55 1/4 (1403)	8 (203)	102 (2591)	58 7/16 (1484)	44 (1118)	132 (3353)
				40 000	198838							
2000	25 000	197848	55 1/4 (1403)	65 1/2 (1664)	10 (254)	102 (2591)	58 7/16 (1484)	44 (1118)	132 (3353)			
138	145	650	1200	25 000	197739	64 1/4 (1632)	64 1/4 (1632)	8 (203)	84 (2134)	67 7/16 (1716)	38 (965)	108 (2743)
				40 000	198739							
			2000	25 000	197749	64 1/4 (1632)	74 1/2 (1892)	10 (254)	84 (2134)	67 7/16 (1716)	38 (965)	108 (2743)
			1200	25 000	197839	64 1/4 (1632)	64 1/4 (1632)	8 (203)	102 (2591)	67 7/16 (1716)	44 (1118)	132 (3353)
				40 000	198839							
2000	25 000	197849	64 1/4 (1632)	74 1/2 (1892)	10 (254)	102 (2591)	67 7/16 (1716)	44 (1118)	132 (3353)			
161	169	750	1200	20 000	187030	72 1/4 (1835)	72 1/4 (1835)	8 (203)	120 (3048)	75 7/16 (1916)	63 1/2 (1613)	132 (3353)

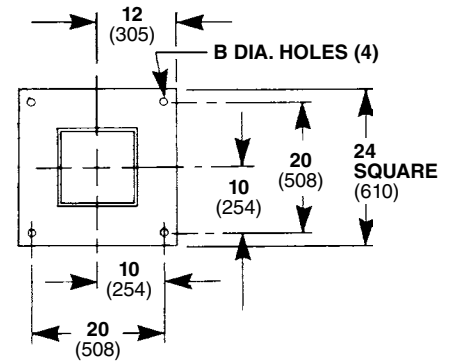
TABLE CONTINUED ►



TERMINAL PAD DETAIL  
(TYPICAL, BOTH ENDS, 1200 A  
TYPICAL, INTERRUPTER END, 2000 A)



TERMINAL PAD DETAIL  
(TYPICAL, JAW-CONTACT END, 2000 A)



MOUNTING-PEDESTAL  
BASE DETAIL

Dimensions in Inches (mm)		Net Weight, Lbs. (kg)
M	R	
88 (2235)	59 (1499)	6300 (2858)
88 (2235)	59 (1499)	6400 (2903)
118 (2997)	72 (1829)	7100 (3221)
118 (2997)	72 (1829)	7200 (3266)
118 (2997)	72 (1829)	7200 (3266)
118 (2997)	72 (1829)	7300 (3311)
136 (3454)	81 (2057)	7600 (3447)
136 (3454)	81 (2057)	7700 (3493)
136 (3454)	81 (2057)	7700 (3493)
136 (3454)	81 (2057)	7800 (3538)
$152\frac{3}{4}$ (3880)	$89\frac{7}{16}$ (2272)	8800 (3992)

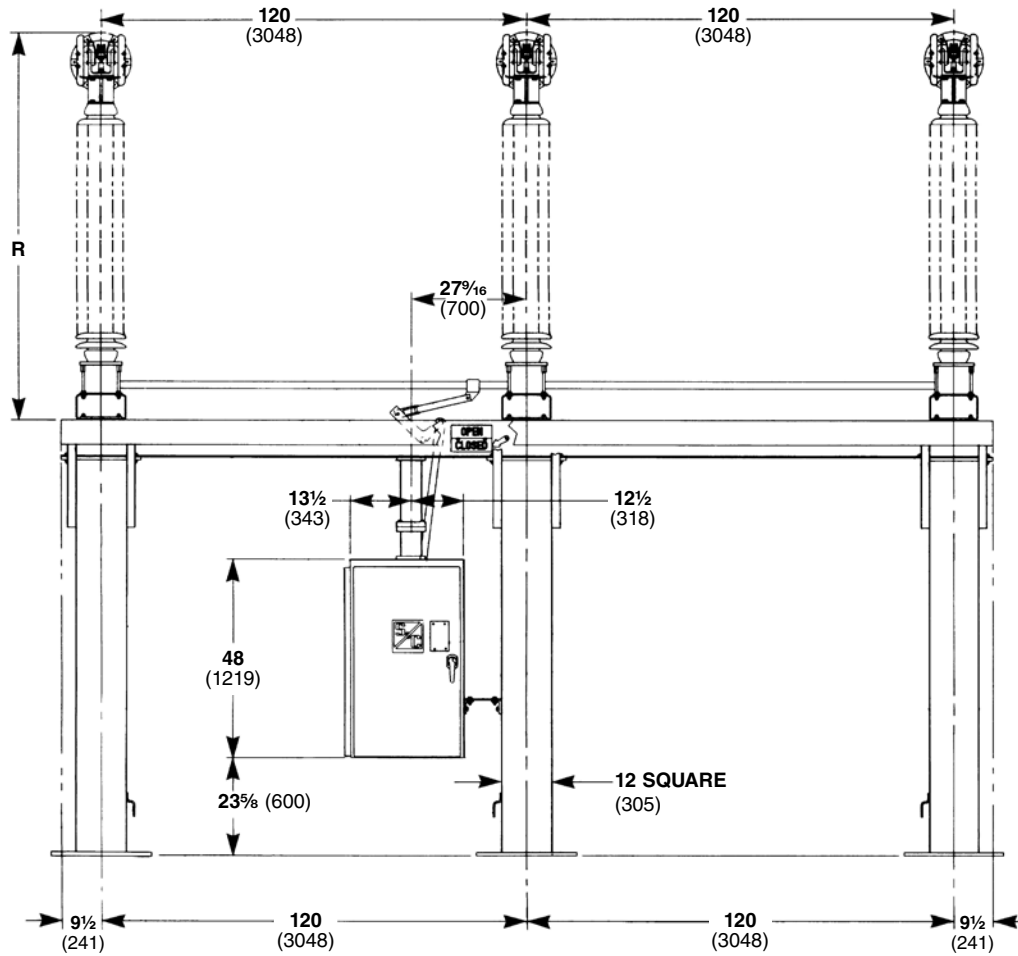
Anchor Bolt Hole Diameter

Rating, kV	Circuit-Switcher		Anchor Bolt Hole Diameter, B, Inches (mm)
	Phase Spacing, Inches (mm)	Mounting Pedestal Height, Inches (mm)	
69	84 (2134)	96 through 144 (2438 through 3658)	$1\frac{1}{4}$ (32)
		168 through 240 (4267 through 6096)	$1\frac{1}{2}$ (38)
115 and 138	84 and 102 (2134 and 2591)	96 through 144 (2438 through 3658)	$1\frac{1}{4}$ (32)
		168 through 240 (4267 through 6096)	$1\frac{1}{2}$ (38)
161	120 (3048)	96 through 192 (2438 through 4877)	$1\frac{1}{2}$ (38)

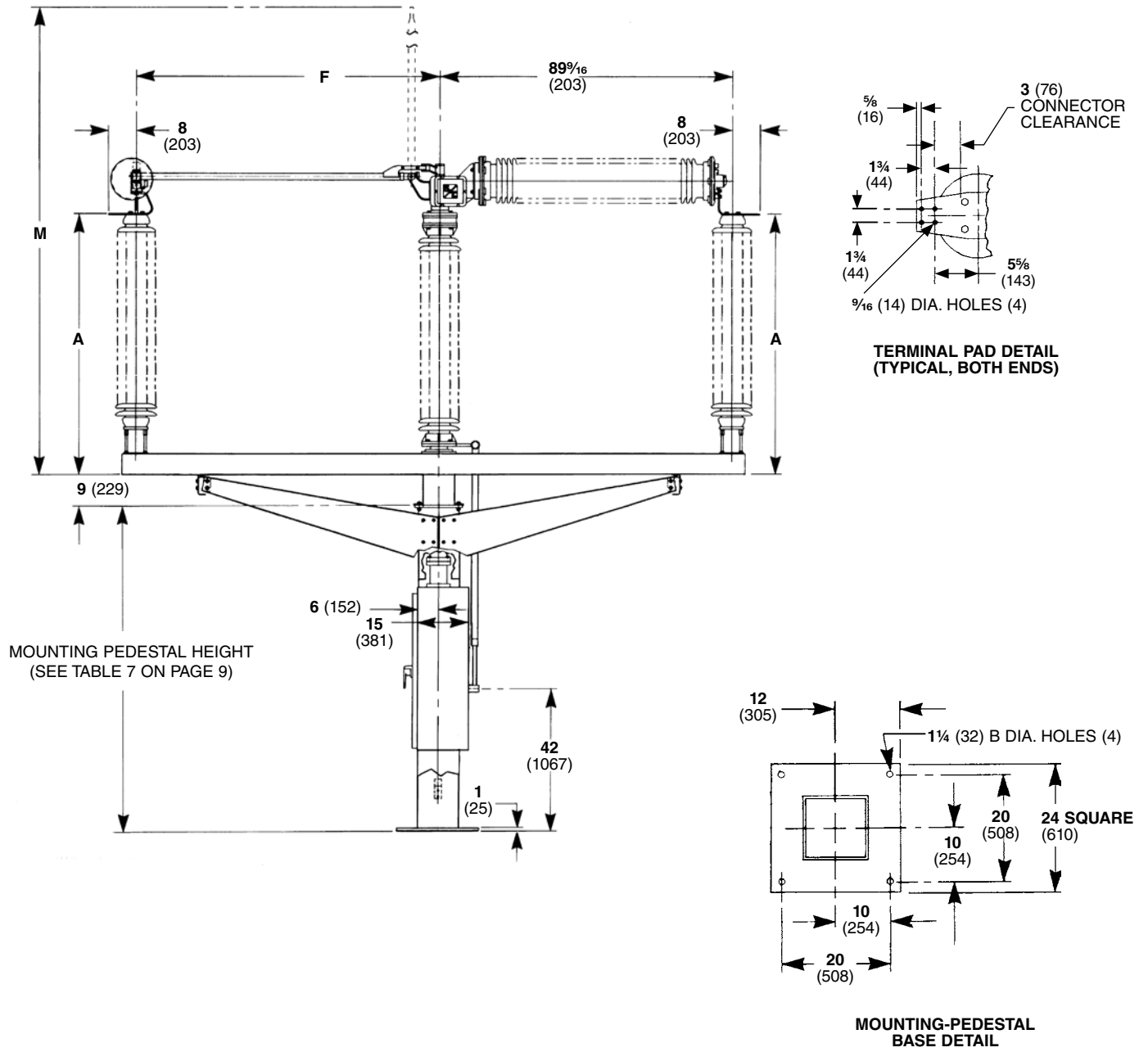
# Series 2000 Circuit-Switchers

## Model 2010 With Horizontal Interrupters and Vertical-Break Power-Operated Disconnect 161 kV and 230 kV—Three Mounting Pedestals

Dimensions in inches (mm)



Rating					Catalog Number	Dimensions in Inches (mm)				Net Weight, Lbs. (kg)
kV			Amperes, RMS			A	F	M	R	
Nom.	Max	BIL	Cont.	Fault-Interrupting, Sym.						
161	169	750	1200	20 000	197030	72 <sup>1</sup> / <sub>4</sub> (1835)	75 <sup>7</sup> / <sub>16</sub> (1918)	152 <sup>3</sup> / <sub>4</sub> (3880)	89 <sup>7</sup> / <sub>16</sub> (2273)	9600 (4364)
230	242	900	1200	20 000	197031	94 <sup>1</sup> / <sub>4</sub> (2394)	89 <sup>9</sup> / <sub>16</sub> (2276)	188 <sup>3</sup> / <sub>4</sub> (4794)	111 <sup>7</sup> / <sub>16</sub> (2832)	10 600 (4818)

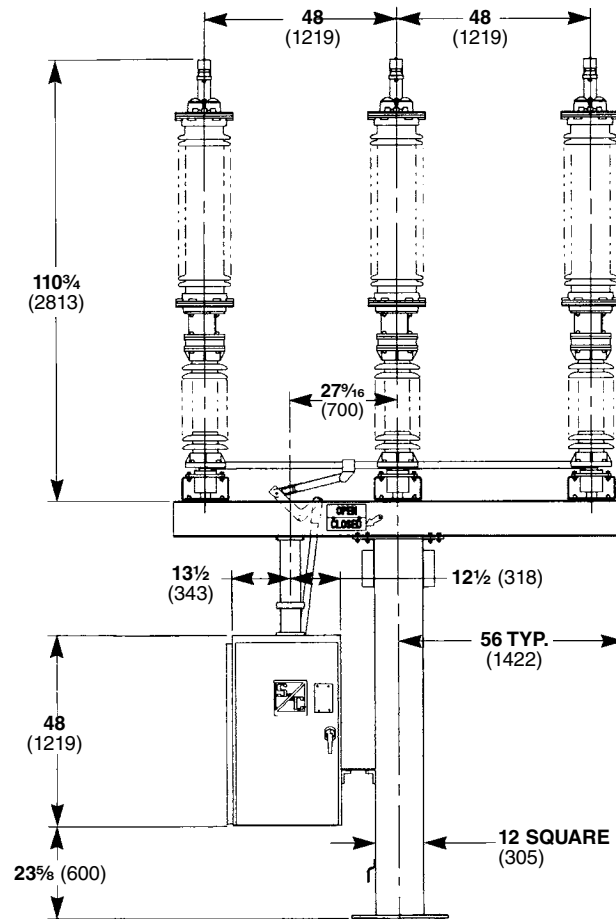


# Series 2000 Circuit-Switchers

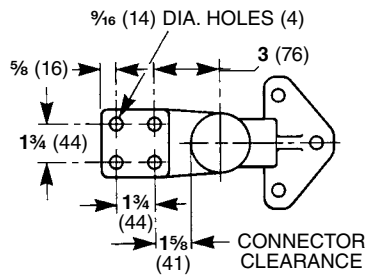
## Model 2020

### With Vertical Interrupters and Side-Break Power-Operated Disconnect 69 kV, 48-Inch (1219-mm) Phase Spacing—Single Mounting Pedestal

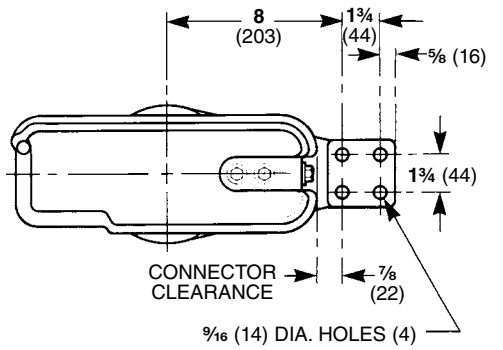
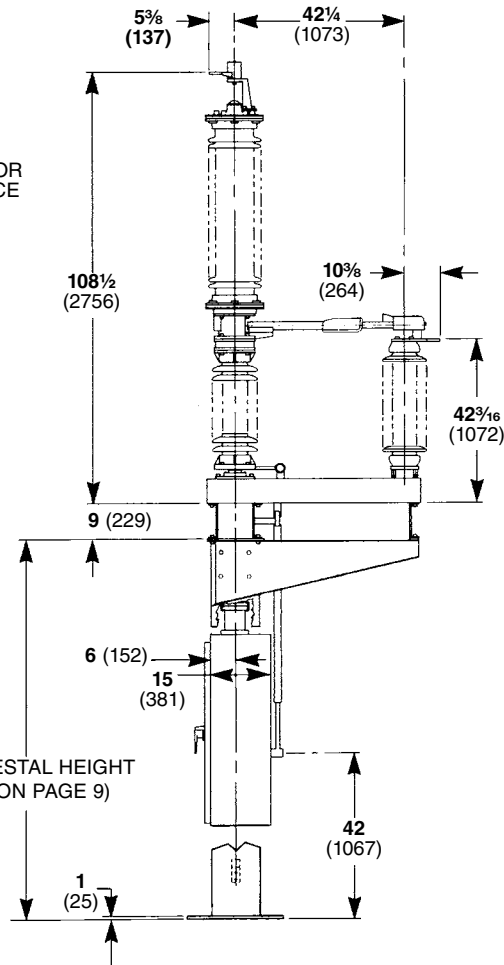
Dimensions in inches (mm)



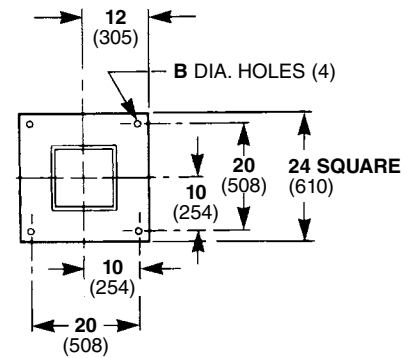
Rating					Catalog Number	Net Weight, Lbs. (kg)
kV			Amperes, RMS			
Nom.	Max	BIL	Continuous	Fault-Interrupting, Sym.		
69	72.5	350	1200	25 000	397436	4200 (1905)
				40 000	398436	



**INTERRUPTER-END  
 TERMINAL PAD DETAIL**



**JAW-CONTACT  
 TERMINAL PAD DETAIL**



**MOUNTING-PEDESTAL  
 BASE DETAIL**

**Anchor Bolt Hole Diameter**

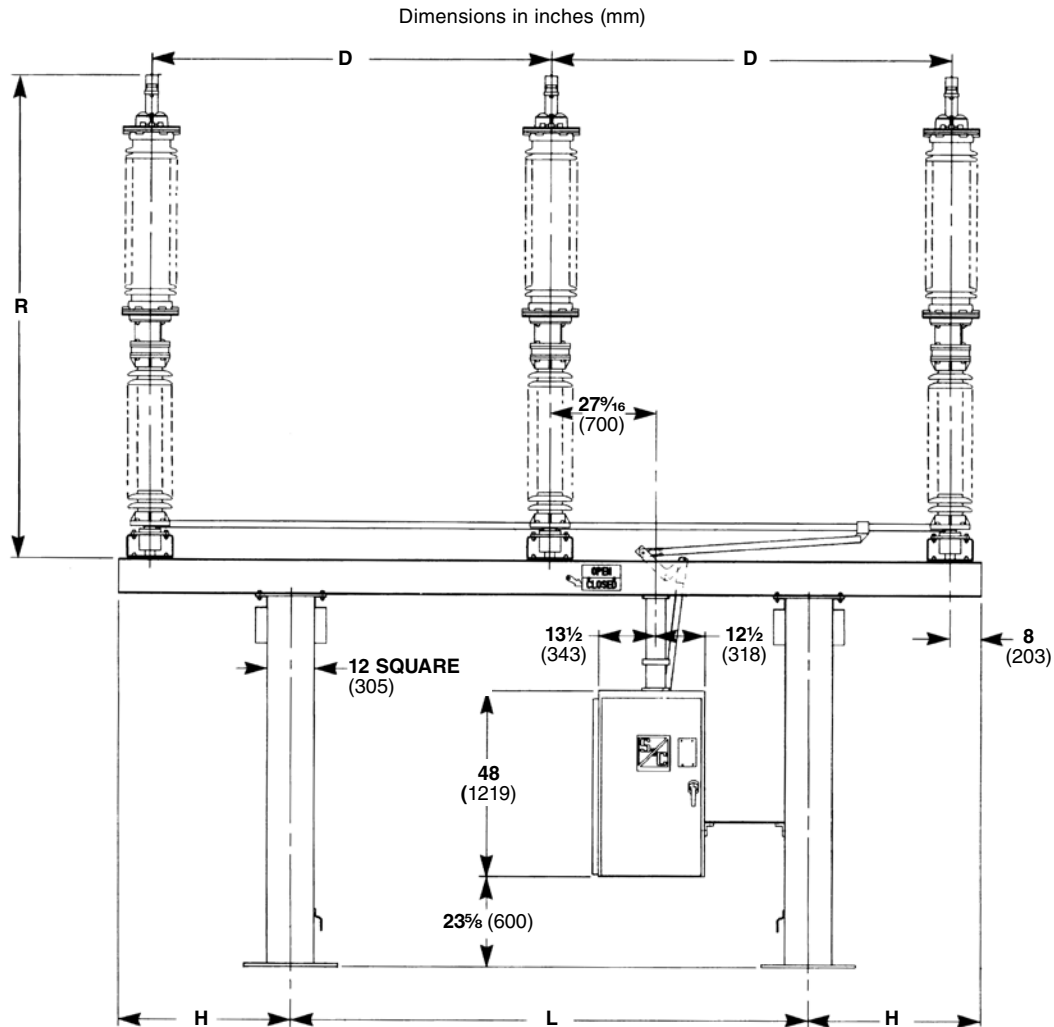
Mounting Pedestal Height, Inches (mm)	Anchor Bolt Hole Diameter, B, Inches (mm)
96 through 192 (2438 through 4877)	1 1/2 (38)
216 and 240 (5486 and 6096)	1 3/4 (44)

# Series 2000 Circuit-Switchers

## Model 2020

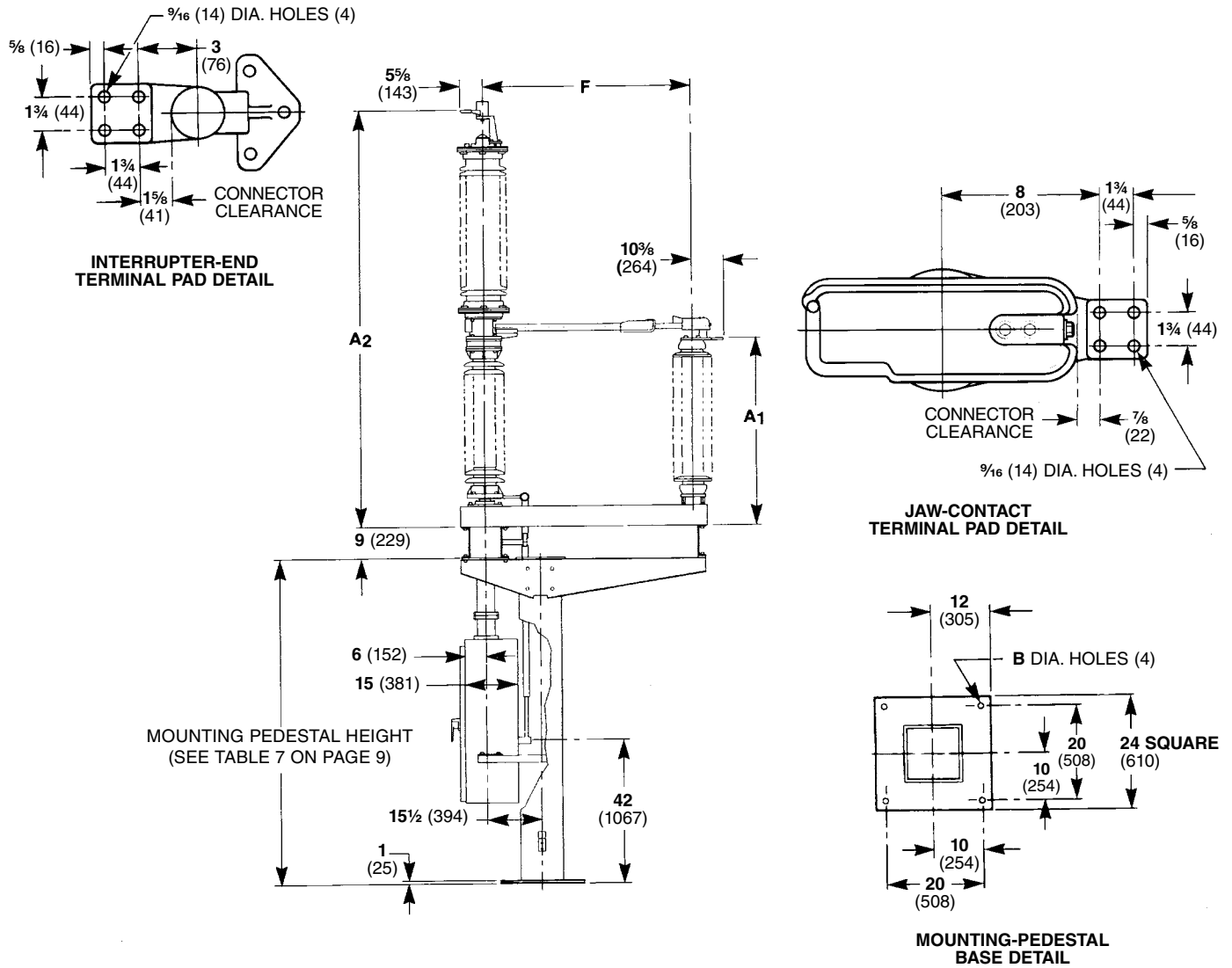
With Vertical Interrupters and Side-Break Power-Operated Disconnect

69 kV, 84-Inch (2134-mm) Phase Spacing, 115 kV; and 138 kV—Two Mounting Pedestals



Rating					Catalog Number	Dimensions in Inches (mm)							Net Weight, Lbs. (kg)
kV			Amperes, RMS			A1	A2	D	F	H	L	R	
Nom.	Max	BIL	Cont.	Fault-Interrupting, Sym.									
69	72.5	350	1200	25 000	397736	42 1/4	108 1/2	84	42 1/4	38	108	110 3/4	5500
				40 000	398736	(1073)	(2756)	(2134)	(1073)	(965)	(2743)	(2813)	(2495)
115	121	550	1200	25 000	397738	55 1/4	121 1/2	84	59 1/4	38	108	123 3/4	6000
				40 000	398738	(1403)	(3086)	(2134)	(1505)	(965)	(2743)	(3143)	(2722)
				25 000	397838	55 1/4	121 1/2	102	59 1/4	44	132	123 3/4	6100
				40 000	398838	(1403)	(3086)	(2591)	(1505)	(1118)	(3353)	(3143)	(2767)
138	145	650	1200	25 000	397739	64 1/4	130 1/2	84	67 1/4	38	108	132 3/4	6400
				40 000	398739	(1632)	(3315)	(2134)	(1708)	(965)	(2743)	(3372)	(2903)
				25 000	397839	64 1/4	130 1/2	102	67 1/4	44	132	132 3/4	6500
				40 000	398839	(1632)	(3315)	(2591)	(1708)	(1118)	(3353)	(3372)	(2948)





**Anchor Bolt Hole Diameter**

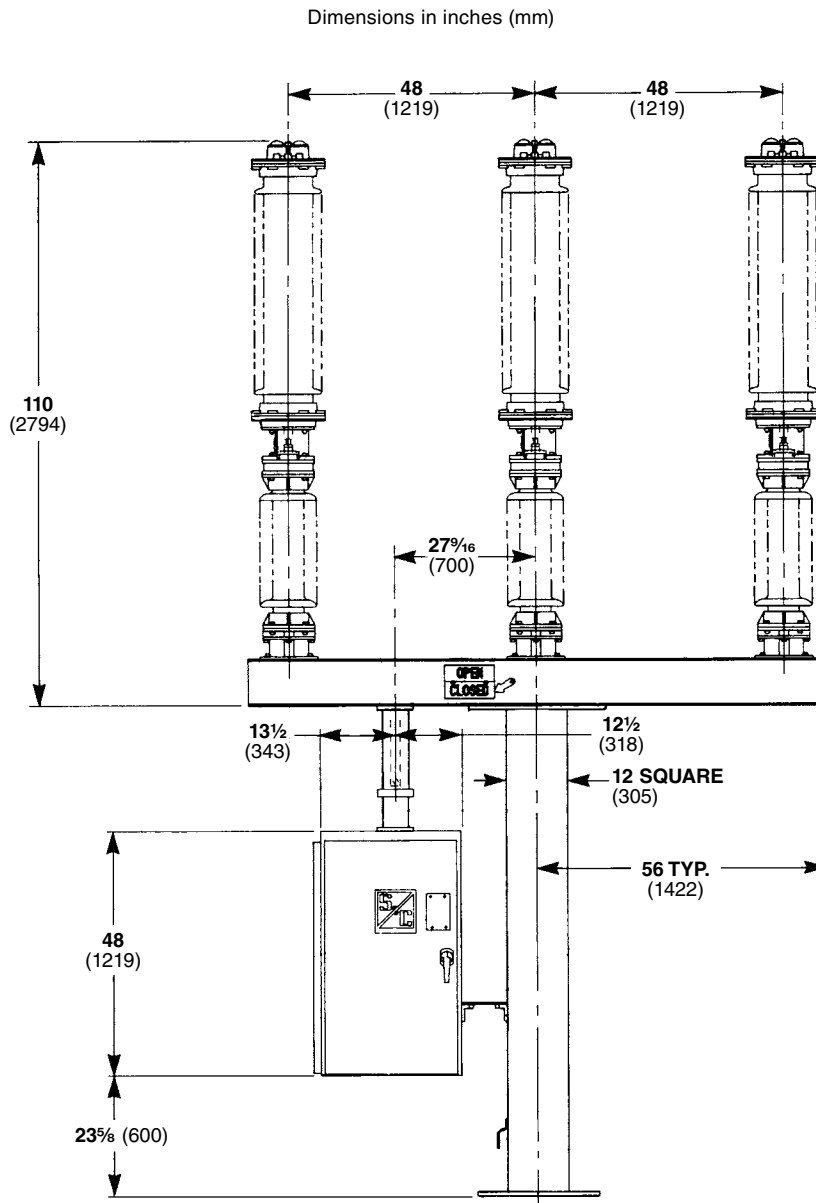
Circuit-Switcher			Anchor Bolt Hole Diameter, B, Inches (mm)
Rating, kV	Phase Spacing, Inches (mm)	Mounting Pedestal Height, Inches (mm)	
69	84 (2134)	96 through 144 (2438 through 3658)	1¼ (32)
		168 through 240 (4267 through 6096)	1½ (38)
115 and 138	84 and 102 (2134 and 2591)	96 through 144 (2438 through 3658)	1¼ (32)
		168 through 240 (4267 through 6096)	1½ (38)

# Series 2000 Circuit-Switchers

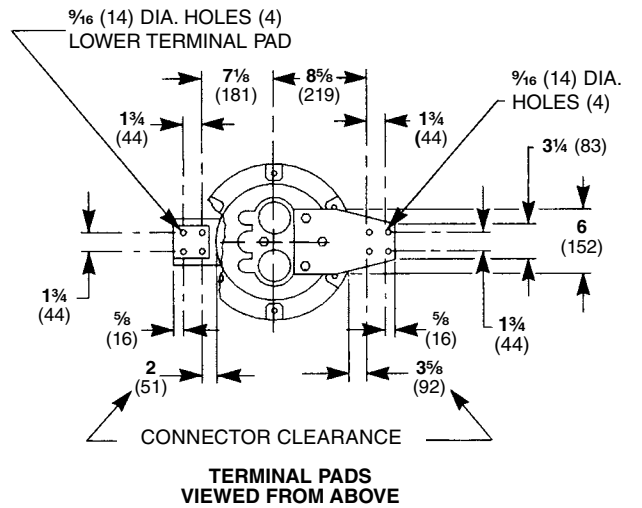
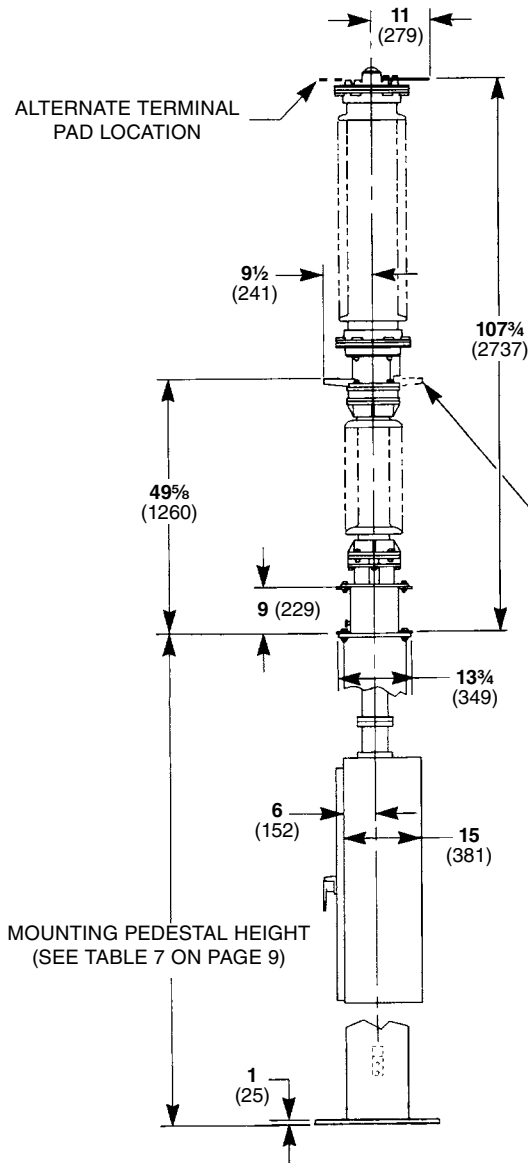
## Model 2030

With Vertical Interrupters and Without Disconnect

69 kV, 48-Inch (1219-mm) Phase Spacing—Single Mounting Pedestal

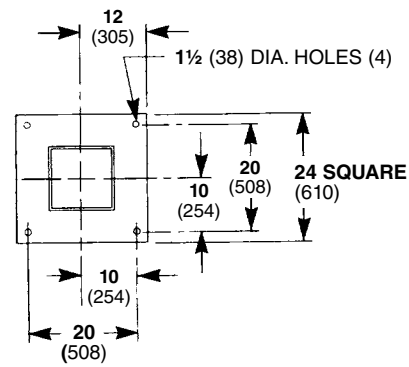


Rating					Catalog Number	Net Weight, Lbs. (kg)
kV			Amperes, RMS			
Nom.	Max	BIL	Cont.	Fault- Interrupting, Sym.		
69	72.5	350	1200	25 000	597436	3100 (1406)
				40 000	598436	
			2000	25 000	597446	



ALTERNATE TERMINAL PAD LOCATION

MOUNTING PEDESTAL HEIGHT  
(SEE TABLE 7 ON PAGE 9)



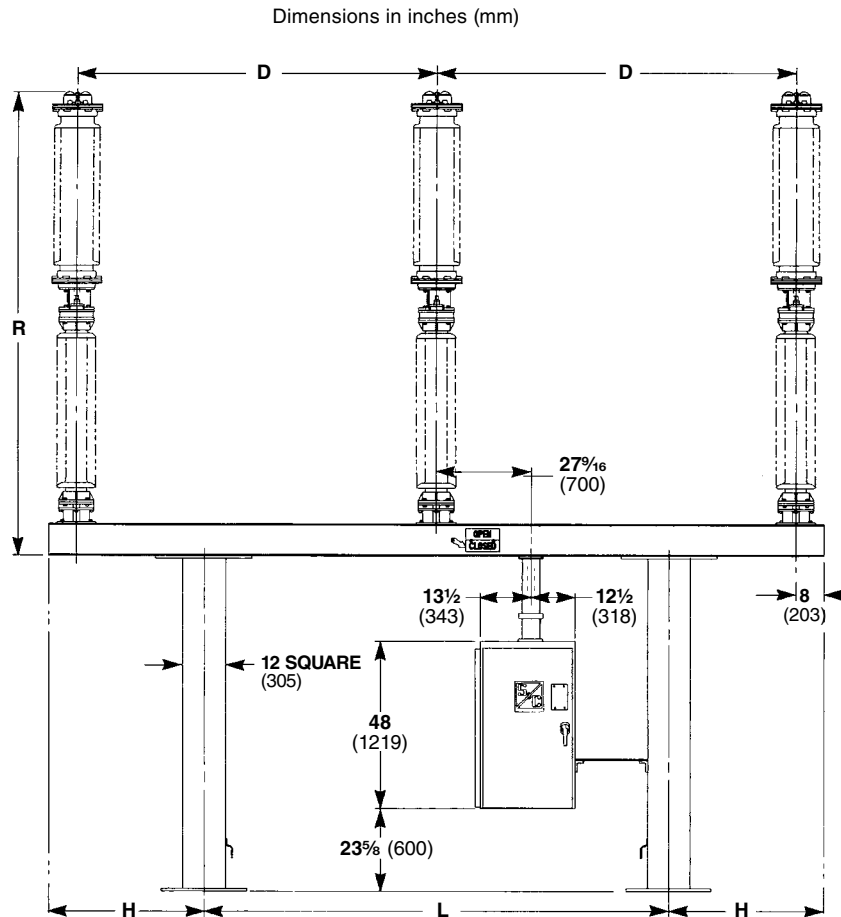
MOUNTING-PEDESTAL  
BASE DETAIL

# Series 2000 Circuit-Switchers

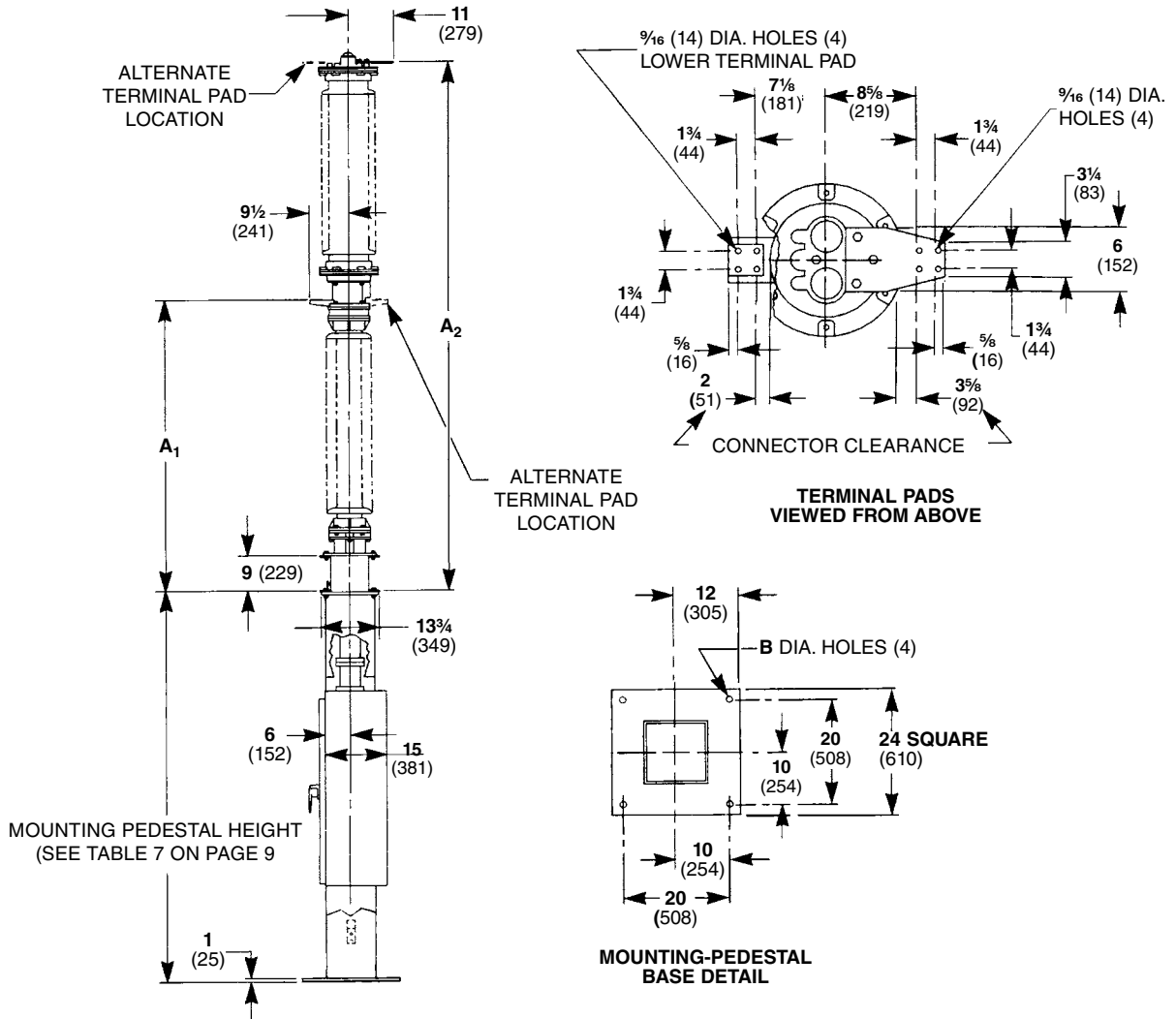
## Model 2030

With Vertical Interrupters and Without Disconnect

69 kV, 84-Inch (2134-mm) Phase Spacing; 115 kV; 138 kV and 161 kV—Two Mounting Pedestals



Rating					Catalog Number	Dimensions in Inches (mm)						Net Weight, Lbs. (kg)	
kV			Amperes, RMS			A <sub>1</sub>	A <sub>2</sub>	D	H	L	R		
Nom.	Max	BIL	Cont.	Fault-Interrupting, Sym.									
69	72.5	350	1200	25 000	597736	49 <sup>5</sup> / <sub>8</sub> (1260)	107 <sup>3</sup> / <sub>4</sub> (2737)	84 (2134)	38 (965)	108 (2743)	110 (2794)	4000 (1814)	
				40 000	598736								
				2000	25 000								597746
115	121	550	1200	25 000	597738	62 <sup>5</sup> / <sub>8</sub> (1591)	120 <sup>3</sup> / <sub>4</sub> (3067)	84 (2134)	38 (965)	108 (2743)	123 (3124)	4200 (1905)	
				40 000	598738								
				2000	25 000								597748
				25 000	597838								
				1200	40 000								598838
				2000	25 000								597848
138	145	650	1200	25 000	597739	71 <sup>5</sup> / <sub>8</sub> (1819)	129 <sup>3</sup> / <sub>4</sub> (3296)	84 (2134)	38 (965)	108 (2743)	132 (3353)	4500 (2041)	
				40 000	598739								
				2000	25 000								597749
				25 000	597839								
				1200	40 000								598839
				2000	25 000								597849
161	169	750	1200	20 000	587030	79 <sup>5</sup> / <sub>8</sub> (2021)	159 <sup>1</sup> / <sub>2</sub> (4051)	120 (3048)	63 <sup>1</sup> / <sub>2</sub> (1613)	132 (3353)	162 (4115)	5000 (2268)	



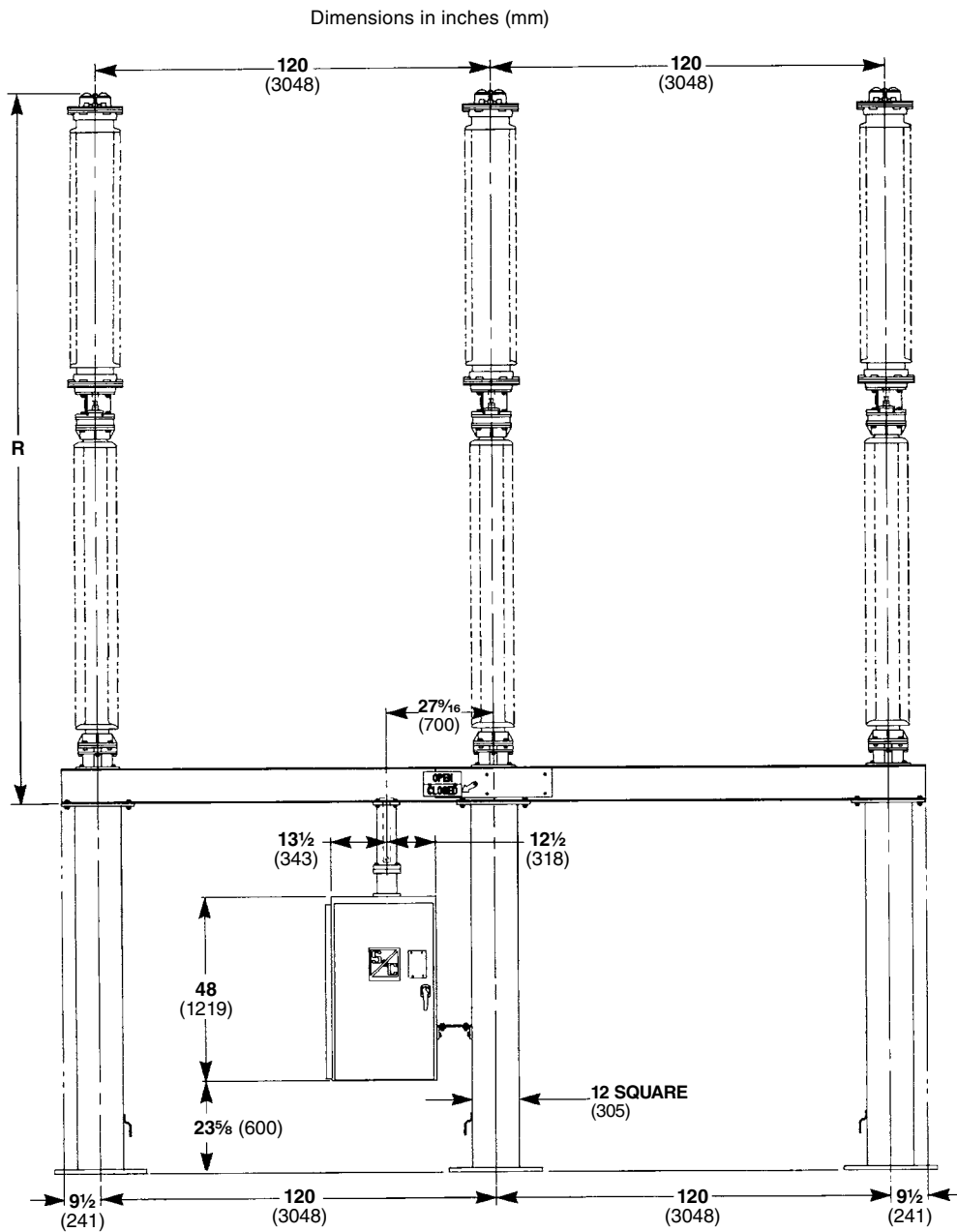
**Anchor Bolt Hole Diameter**

Circuit-Switcher			Anchor Bolt Hole Diameter, B, Inches (mm)
Rating, kV	Phase Spacing, Inches (mm)	Mounting Pedestal Height, Inches (mm)	
69	84 (2134)	All	1¼ (32)
115	84 (2134) 102 (2591)	All	1¼ (32)
138	84 (2134) 102 (2591)	All	1¼ (32)
161	120 (3048)	96 (2438) through 168 (4267)	1¼ (32)
		192 (4877) through 240 (6096)	1½ (38)

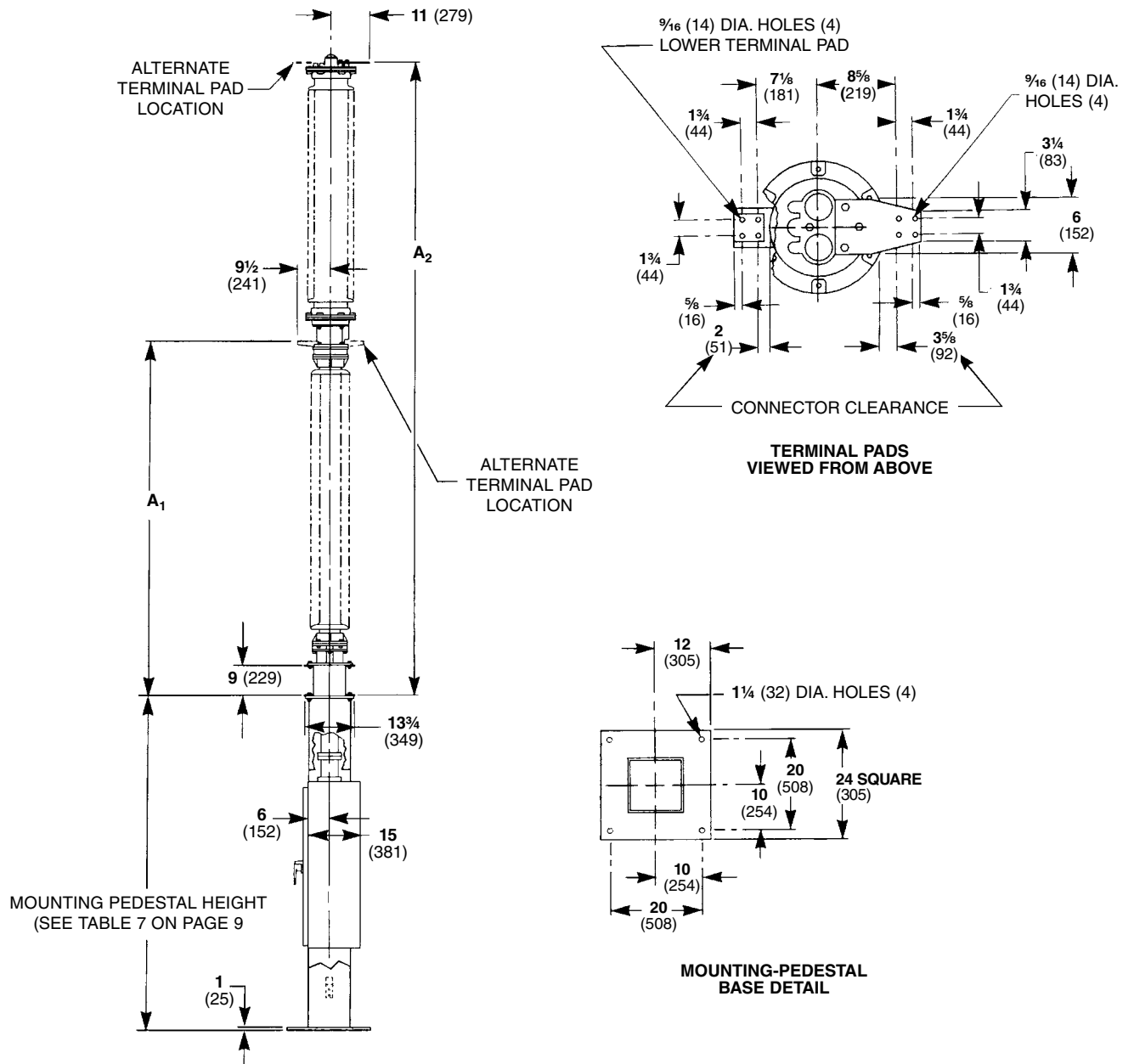
# Series 2000 Circuit-Switchers

## Model 2030

### With Vertical Interrupters and Without Disconnect 161 kV and 230 kV—Three Mounting Pedestals



Rating					Catalog Number	Dimensions in Inches (mm)			Net Weight, Lbs. (kg)
Nom.	Max	BIL	Amperes, RMS, Cont.	Fault-Interrupting, Sym.		A1	A2	R	
161	169	750	1200	20 000	597030	79 9/16 (2021)	159 1/2 (4051)	162 (4115)	5800 (2631)
230	242	900	1200	20 000	597031	101 9/16 (2580)	181 1/2 (4610)	184 (4674)	6100 (2767)

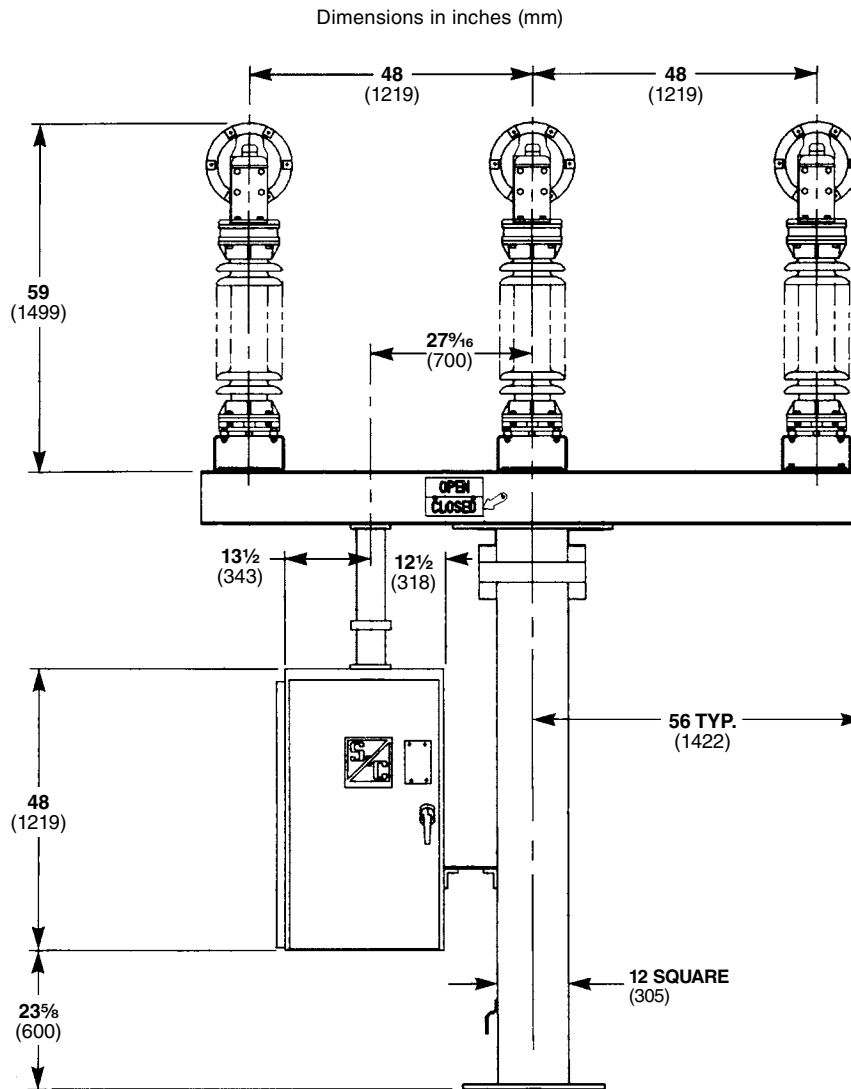


# Series 2000 Circuit-Switchers

## Model 2040

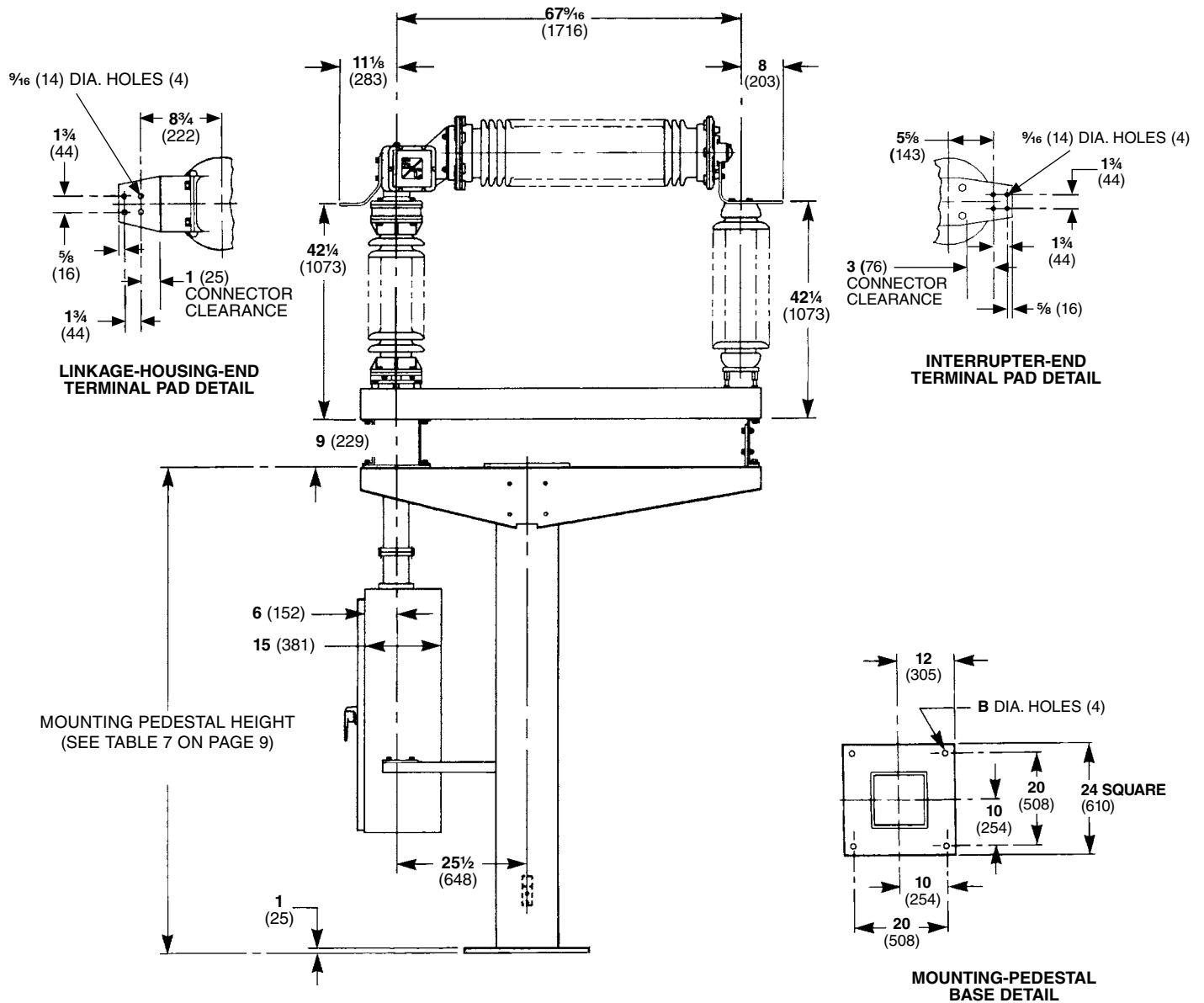
### With Horizontal Interrupters and Without Disconnect

### 69 kV, 48-Inch (1219-mm) Phase Spacing—Single Mounting Pedestal



Rating					Catalog Number	Net Weight, Lbs. (kg)
kV			Amperes, RMS			
Nom.	Max	BIL	Cont.	Fault- Interrupting, Sym.		
69	72.5	350	1200	25 000	697436	4300 (1950)
				40 000	698436	
			2000	25 000	697446	4300 (1950)





**Anchor Bolt Hole Diameter**

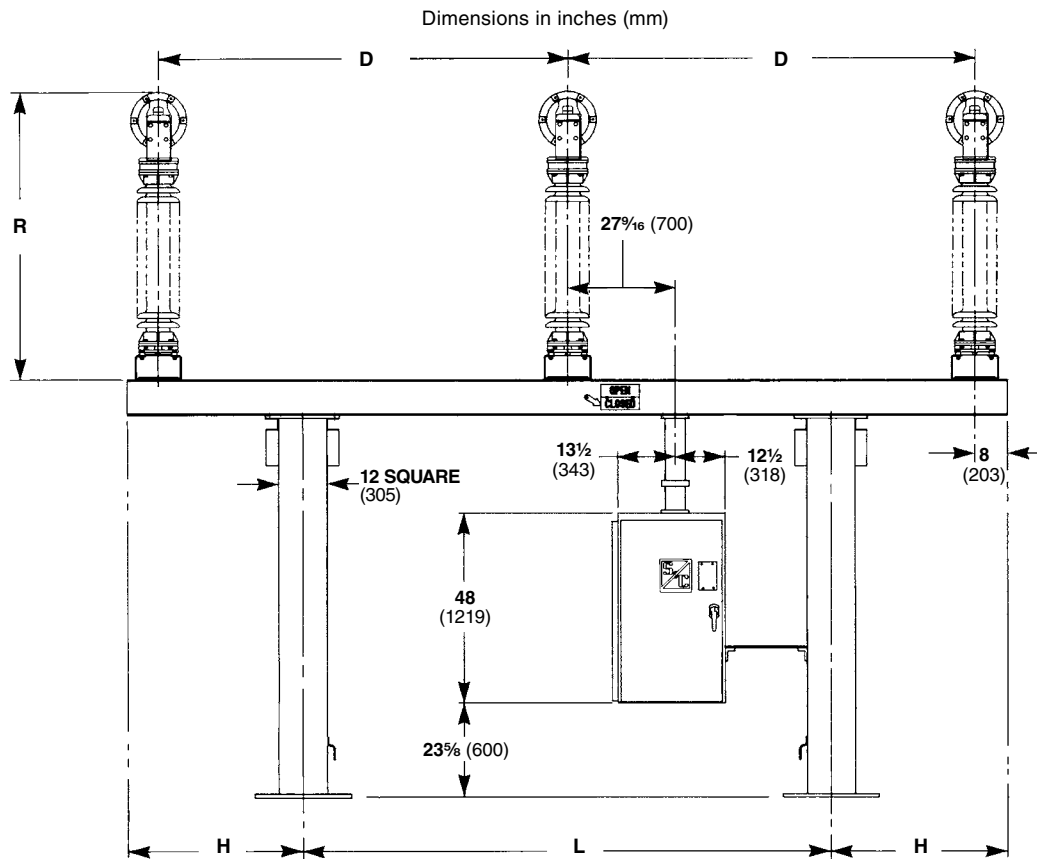
Mounting Pedestal Height, Inches (mm)	Anchor Bolt Hole Diameter, B, Inches (mm)
96 through 192 (2438 through 4877)	$1\frac{1}{2}$ (38)
216 and 240 (5486 and 6096)	$1\frac{3}{4}$ (44)

# Series 2000 Circuit-Switchers

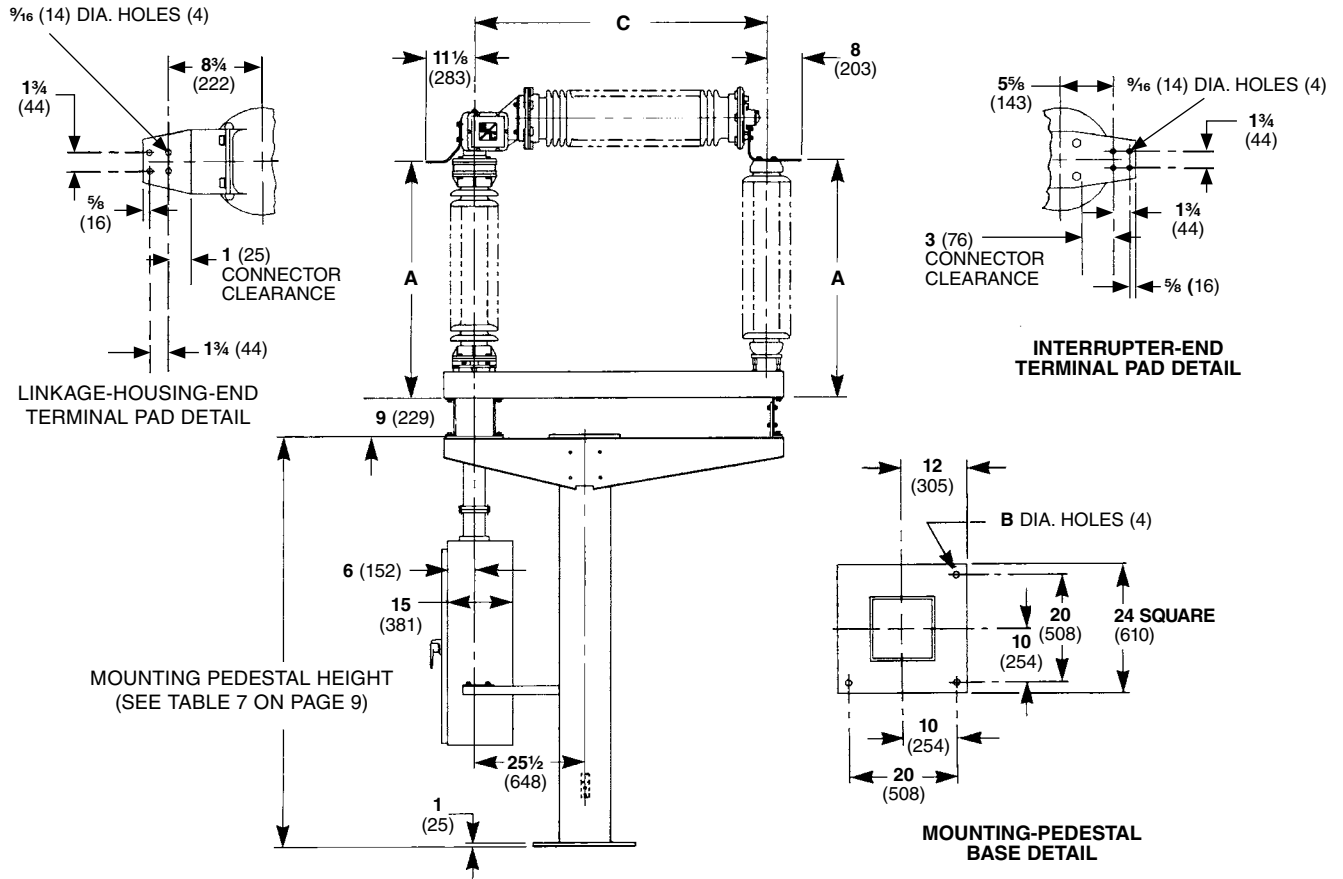
## Model 2040

### With Horizontal Interrupters and Without Disconnect

### 69 kV, 84-Inch (2134-mm) Phase Spacing; 115 kV; 138 kV and 161 kV—Two Mounting Pedestals



Rating						Dimensions in Inches (mm)						Net Weight, Lbs. (kg)
kV		Amperes, RMS				Catalog Number	A	C	D	H	L	
Nom.	Max	BIL	Cont.	Fault-Interrupting, Sym.								
69	72.5	350	1200	25 000	697736	42 1/4 (1073)	67 7/16 (1716)	84 (2134)	38 (965)	108 (2743)	59 (1499)	5600 (2540)
				40 000	698736							
			2000	25 000	697746	42 1/4 (1073)	67 7/16 (1716)	84 (2134)	38 (965)	108 (2743)	59 (1499)	5600 (2540)
				40 000								
115	121	550	1200	25 000	697738	55 1/4 (1403)	67 7/16 (1716)	84 (2134)	38 (965)	108 (2743)	72 (1829)	6000 (2722)
				40 000	698738							
			2000	25 000	697748	55 1/4 (1403)	67 7/16 (1716)	84 (2134)	38 (965)	108 (2743)	72 (1829)	6100 (2767)
				40 000	698838							
138	145	650	1200	25 000	697739	64 1/4 (1632)	67 7/16 (1716)	84 (2134)	38 (965)	108 (2743)	81 (2057)	6300 (2858)
				40 000	698739							
			2000	25 000	697749	64 1/4 (1632)	67 7/16 (1716)	84 (2134)	38 (965)	108 (2743)	81 (2057)	6400 (2903)
				40 000	698839							
			2000	25 000	697849	64 1/4 (1632)	67 7/16 (1716)	102 (2591)	44 (1118)	132 (3353)	81 (2057)	6400 (2903)
				40 000								
161	169	750	1200	20 000	687030	72 1/4 (1835)	89 7/16 (2275)	120 (3048)	63 1/2 (1613)	132 (3353)	89 7/16 (2272)	6100 (2767)



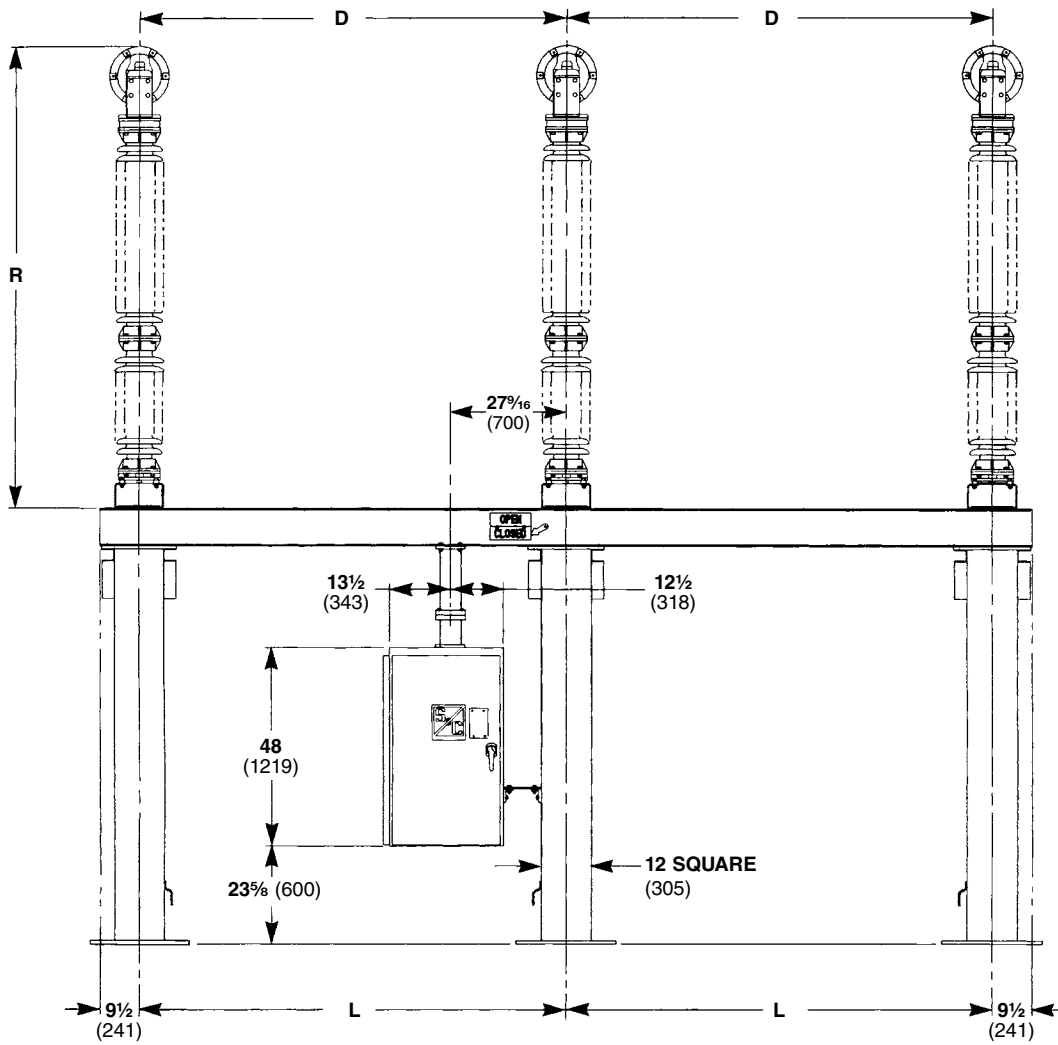
**Anchor Bolt Hole Diameter**

Rating, kV	Circuit-Switcher		Anchor Bolt Hole Diameter, B, Inches (mm)
	Phase Spacing, Inches (mm)	Mounting Pedestal Height, Inches (mm)	
69	84 (2134)	96 through 144 (2438 through 3658)	$1\frac{1}{4}$ (32)
		168 through 240 (4267 through 6096)	$1\frac{1}{2}$ (38)
115 and 138	84 and 102 (2134 and 2591)	96 through 144 (2438 through 3658)	$1\frac{1}{4}$ (32)
		168 through 240 (4267 through 6096)	$1\frac{1}{2}$ (38)
161	120 (3048)	96 through 192 (2438 through 4877)	$1\frac{1}{2}$ (38)

# Series 2000 Circuit-Switchers

## Model 2040 With Horizontal Interrupters and Without Disconnect 161 kV and 230 kV—Three Mounting Pedestals

Dimensions in inches (mm)



Rating					Catalog Number	Dimensions in Inches (mm)				Net Weight, Lbs. (kg)
kV			Amperes, RMS, Cont.	Fault-Interrupting, Sym.		A	D	L	R	
Nom.	Max	BIL								
161	169	750	1200	20 000	697830	72 $\frac{1}{4}$ (1835)	102 (2591)	102 (2591)	89 $\frac{7}{16}$ (2272)	6800 (3084)
					697030	72 $\frac{1}{4}$ (1835)	120 (3048)	120 (3048)	89 $\frac{7}{16}$ (2272)	6900 (3130)
230	242	900	1200	20 000	697031	94 $\frac{1}{4}$ (2394)	120 (3048)	120 (3048)	111 $\frac{7}{16}$ (2831)	7700 (3493)

