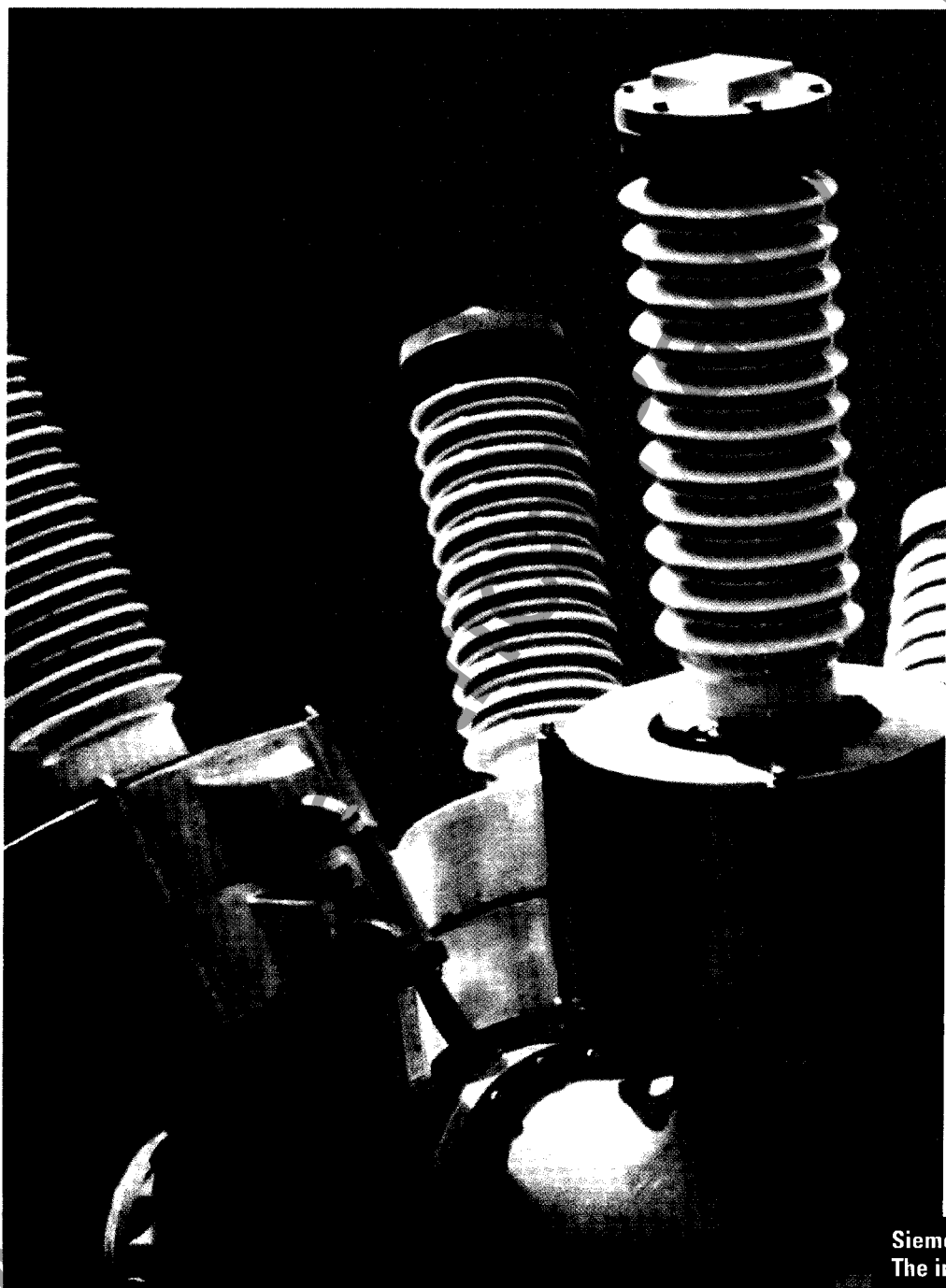


SIEMENS

SPS2 Circuit Breaker

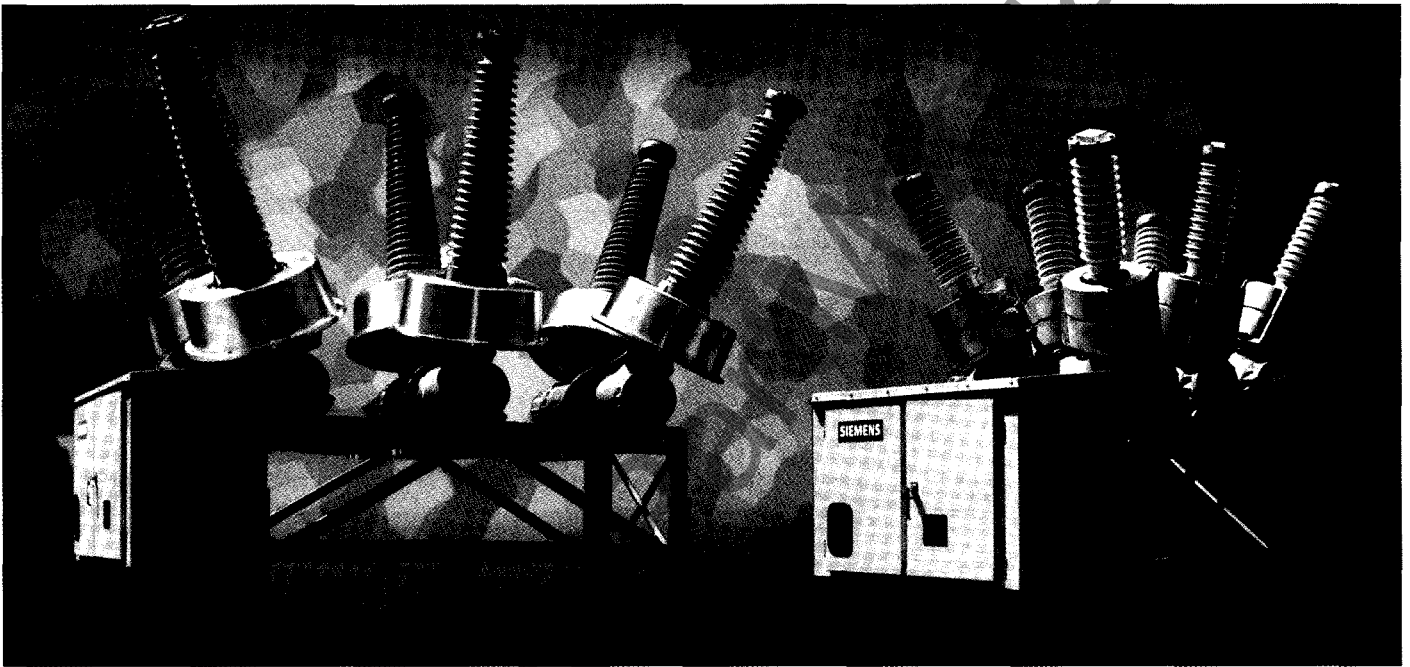
(15-245kV)

Longer Operating Life – Lower Maintenance Costs



Siemens Power Transmission & Distribution.
The intelligence to power your future.

SPS2 – A new generation of circuit breakers



The new SPS2 is not just another circuit breaker, it's a better circuit breaker. With the ability to handle 40kA without capacitors, three-cycle interruption, -40° C/F without tank heaters at 69kV and a simple one-time adjustment – SPS2 is the result of combined global engineering and major product improvements.

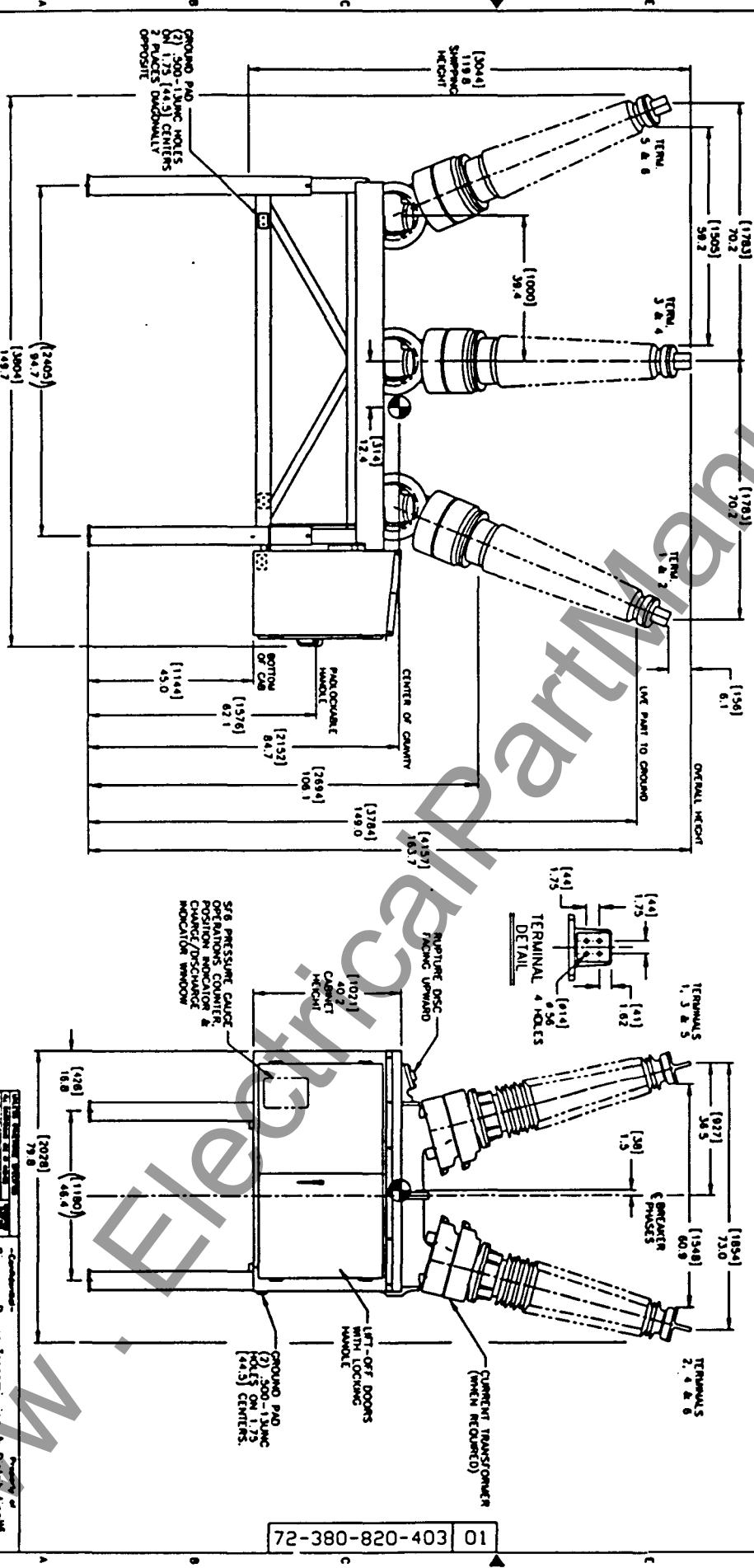
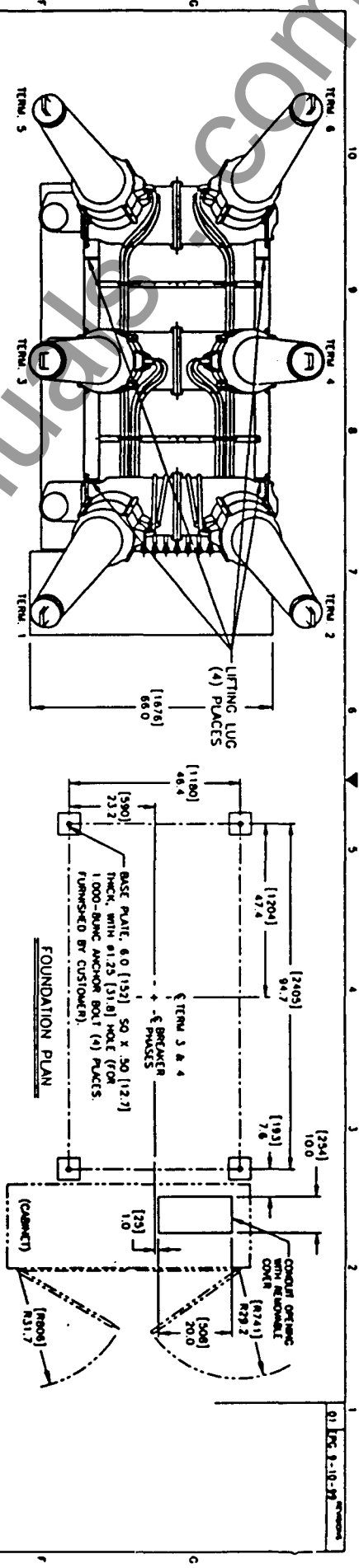
A family of circuit breakers designed to your specifications

Siemens took the best of what breaker technology has to offer and brought them together into one circuit breaker to offer reliable performance for a wide range of voltage requirements. Whether

you need 15kV right up through 245kV, the SPS2 can meet your requirements.

Each component of the SPS2 is made in our state-of-the-art manufacturing facility, which is quality certified to ISO 9001 standards. This precision manufacturing allows Siemens to make quality products, which are used in thousands of installations worldwide.

Siemens combines the latest in circuit breaker technology with the economies of a streamlined, closely monitored production process at the Siemens Power Transmission & Distribution plant in Jackson, Mississippi, to ensure both



APPENDIX WEIGHTS

PACKER COMPLETE 7200 LB (3266 KG)

SF6 56 LB (25 KG)

FOUNDATION REACTION NEGLIGIBLE

PORCELAIN BUSHINGS, 131.0 (3227) CENTER MINIMUM

ITEM NO.	DESCRIPTION	QTY
1	PACKER COMPLETE	1
2	SF6	1
3	FOUNDATION REACTION	1
4	PORCELAIN BUSHINGS	1

OUTLINE, SPSS

72-380-820-403

72-380-820-403 01

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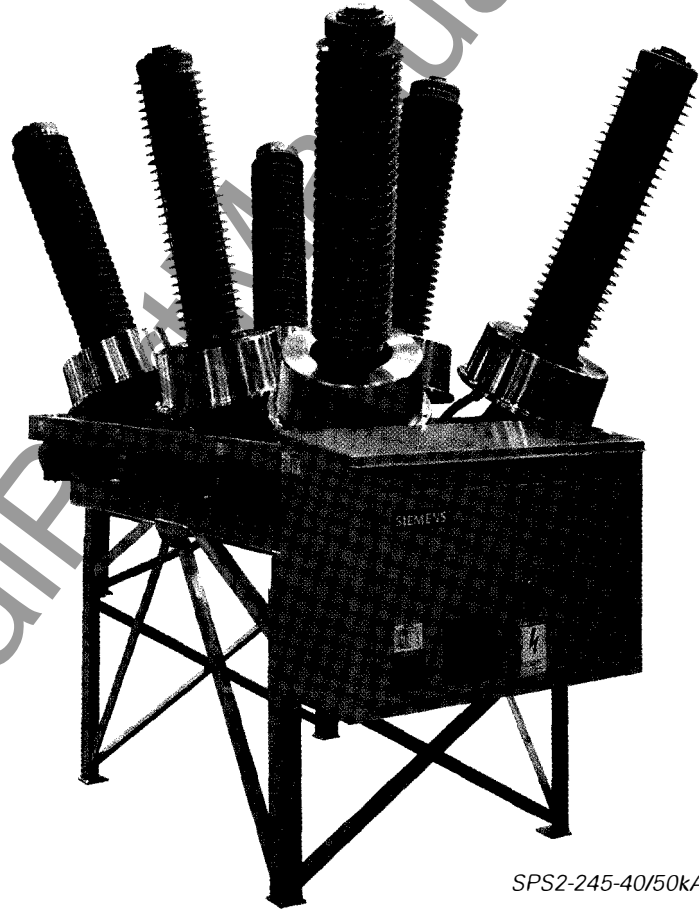
measurable quality improvements and cost containment. And to ensure product performance and customer satisfaction, the SPS2 is tested to ANSI and IEC standards in the world's largest laboratory.

Siemens quality inside and out

The durable dead-tank construction of the SPS2 circuit breaker means reliable, long-lasting performance in demanding operating conditions. Seismically qualified with a leak rate of less than 1% annually, the SPS2 has been tested to 6,000 mechanical operations and 3,000 operations at 6kA. Global components include the FA2/4 mechanism, 3AP arc-assist interrupter, rupture disks for each interrupter, porcelain or composite bushings with standard provision for two CTs per bushing – all factory assembled and tested with no field adjustments necessary.

Why SPS2 outperforms the rest

The SPS2 circuit breaker uses arc-assist interrupter technology – the second generation of this latest technology developed as a result of the successful arc-assist interrupters used in Siemens circuit breakers worldwide. Instead of the standard puffer mechanism that utilizes compression only, arc-assist uses temperature build-up to quench the arc. With fewer moving parts, your maintenance costs are reduced while increasing the operational life of your circuit breaker.



SPS2-245-40/50kA

The SPS2 – Circuit breaker technology to see you through deregulation

At a time when the utility industry is taking a cautious stance in the face of deregulation, Siemens is planning for the future. It's a position expected from a company that has been there through the ups and downs of the power industry.

Siemens is investing in research and development in order to manufacture the products you need now and will want in years to come. The SPS2 is more than just a better breaker. It's designed to perform more reliably under the most demanding specifications – yours.

Ratings and Specifications – 15-72kV

Identification	Ratings								Related Capabilities			
	Type	Nominal kV Class	Voltage		Insulation		Current		Interrupting Time (Cycles)	Current Values — Amperes		
			Rated Max kV	Rated Voltage Range Factor	Low Freq. (kV, rms)	Impulse (kV, Crest)	Rated Continuous Current (Amps, rms)	Rated Short Circuit Current at Rated Max kV		Maximum Symmetrical Interrupting Capability	3-Sec. Short Time Current Carrying Capability	Closing and Latching Capability
SPS2 – 15.5-31.5	14.4	15.5	1.0	50	110	1200/4000	31,500	3	31,500	31,500	85,000	
SPS2 – 15.5-40	14.4	15.5	1.0	50	110	1200/4000	40,000	3	40,000	40,000	108,000	
SPS2 – 25.8-20	23.0	25.8	1.0	60	150	1200/4000	20,000	3	20,000	20,000	54,000	
SPS2 – 25.8-31.5	23.0	25.8	1.0	60	150	1200/4000	31,500	3	31,500	31,500	85,000	
SPS2 – 25.8-40	23.0	25.8	1.0	60	150	1200/4000	40,000	3	40,000	40,000	108,000	
SPS2 – 38-20	34.5	38.0	1.0	80	200	1200/4000	20,000	3	20,000	20,000	54,000	
SPS2 – 38-31.5	34.5	38.0	1.0	80	200	1200/4000	31,500	3	31,500	31,500	85,000	
SPS2 – 38-40	34.5	38.0	1.0	80	200	1200/4000	40,000	3	40,000	40,000	108,000	
SPS2 – 48.3-20	46.0	48.3	1.0	105	250	1200/4000	20,000	3	20,000	20,000	54,000	
SPS2 – 48.3-31.5	46.0	48.3	1.0	105	250	1200/4000	31,500	3	31,500	31,500	85,000	
SPS2 – 48.3-40	46.0	48.3	1.0	105	250	1200/4000	40,000	3	40,000	40,000	108,000	
SPS2 – 72.5-20	69.0	72.5	1.0	160	350	1200/4000	20,000	3	20,000	20,000	54,000	
SPS2 – 72.5-31.5	69.0	72.5	1.0	160	350	1200/4000	31,500	3	31,500	31,500	85,000	
SPS2 – 72.5-40	69.0	72.5	1.0	160	350	1200/4000	40,000	3	40,000	40,000	108,000	

Supplementary Specifications

Voltage

DESCRIPTION	UNIT	SPS2 15.5	SPS2 25.8	SPS2 38	SPS2 48.3	SPS2 72.5
Lightning Impulse Withstand Voltage						
Chopped Wave 2 μ s	kV	142	194	258	322	452
Chopped Wave 3 μ s	kV	126	172	230	288	402
Rated Normal Current (10 ³)	A	12/20/31.5/40	12/20/31.5/40	12/20/31.5/40	12/20/31.5/40	12/20/31.5/40
Normal Frequency	Hz	60	60	60	60	60
Optional Frequency	Hz	50	50	50	50	50
Rated Permissible Tripping Delay (Y)	s	2	2	2	2	2
Auxiliary Voltage	Vac	115/230				
Operating Mechanism	—	Spring ("OCO")				
Trip Coils		Single (standard) – Dual (optional)				
Trip and Close Coil Rating	Vdc	48/125/250				
Breaks Per Phase	—	1				
Contact Gap	in	3.5				
Phase Spacing	in	370				
Seismic Withstand Standard	g	0.3 Dynamic				
Optional	g	0.5 Dynamic				
Rated Voltage Range Factor	(k)	1.0				
RIV at 1000 kHz	μ V	<<500				

Current

DESCRIPTION	UNIT	20kA	31.5kA	40kA
Rated Short Circuit Current	kA	20	31.5	40
Rated Making Current	kA	20	31.5	40
Closing and Latching Capability rms peak	kA	32	50	64
	kA	54	85	108
Capacitance Switching General Purpose Overhead Line Isolated Current	A		100	
Definite Purpose Overhead Line Isolated Current	A		250	
	A		100	
	A		630	
Asymmetrical Int. Capability Ratio (S)	—		12	
Normal Operating Temperature Range Standard	°C		-40°C to 55°C	
Special	°C		-50°C to 55°C	
Closing Time (total)	ms		100	
Rated Reclosing Time	Cycles		12	
Rated Duty Cycle	—		OCO-10S-CO (No derating)	
External Creep Standard	in	73	73	73
Special	in	85	85	85
External Strike To Ground Standard	in	23	23	23
Special	in	27	27	27
Qty. SF ₆	lbs		33	
SF ₆ Pressure	psig		65 @ 68° F/20°C	

Ratings and Specifications – 121-145-170kV

Identification	Ratings							Related Capabilities				
	Type	Nominal kV Class	Voltage		Insulation		Current		Interrupting Time (Cycles)	Current Values — Amperes		
			Rated Max kV	Rated Voltage Range Factor	Rated Withstand Test Voltage		Rated Continuous Current (Amps, rms)	Rated Short Circuit Current at Rated Max. kV		Maximum Symmetrical Interrupting Capability	3-Sec. Short Time Current Carrying Capability	Closing and Latching Capability
				Low Freq. (kV, rms)	Impulse (kV, Crest)							
SPS2 – 121-20	115	121	1.0	260	550	1200/4000	20,000	3	20,000	20,000	54,000	
SPS2 – 121-31.5	115	121	1.0	260	550	1200/4000	31,500	3	31,500	31,500	85,000	
SPS2 – 121-40	115	121	1.0	260	550	1200/4000	40,000	3	40,000	40,000	108,000	
SPS2 – 121-50	115	121	1.0	260	550	1200/4000	50,000	3	50,000	50,000	135,000	
SPS2 – 121-63	115	121	1.0	260	550	1200/4000	63,000	3	63,000	63,000	170,000	
SPS2 – 145-20	138	145	1.0	310	650	1200/4000	20,000	3	20,000	20,000	54,000	
SPS2 – 145-31.5	138	145	1.0	310	650	1200/4000	31,500	3	31,500	31,500	85,000	
SPS2 – 145-40	138	145	1.0	310	650	1200/4000	40,000	3	40,000	40,000	108,000	
SPS2 – 145-50	138	145	1.0	310	650	1200/4000	50,000	3	50,000	50,000	135,000	
SPS2 – 145-63	138	145	1.0	310	650	1200/4000	63,000	3	63,000	63,000	170,000	
SPS2 – 170-20	161	170	1.0	365	750	1200/4000	20,000	3	20,000	20,000	54,000	
SPS2 – 170-31.5	161	170	1.0	365	750	1200/4000	31,500	3	31,500	31,500	85,000	
SPS2 – 170-40	161	170	1.0	365	750	1200/4000	40,000	3	40,000	40,000	108,000	
SPS2 – 170-50	161	170	1.0	365	750	1200/4000	50,000	3	50,000	50,000	135,000	
SPS2 – 170-63	161	170	1.0	365	750	1200/4000	63,000	3	63,000	63,000	170,000	

Supplementary Specifications

Voltage

DESCRIPTION	UNIT	SPS2 121	SPS2 145	SPS2 170
Lightning Impulse Withstand Voltage				
Chopped Wave 2 μ s	kV	710	838	968
Chopped Wave 3 μ s	kV	632	748	862
Rated Normal Current (10 ⁴)	A	12/20/31.5/40	12/20/31.5/40	12/20/31.5/40
Normal Frequency	Hz	60	60	60
Optional Frequency	Hz	50	50	50
Rated Pennissible Tripping Delay (Y)	s	1	1	1
Auxiliary Voltage	Vac	115/230		
Operating Mechanism		Spring ("OCO")		
Trip Coils		Single (standard) – Dual (optional)		
Trip and Close Coil Rating	Vdc	48/125/250		
Breaks Per Phase		1		
Contact Gap	in	3.5		
Phase Spacing	in	68.4		
Seismic Withstand Standard	g	0.3 Dynamic		
Optional	g	0.5 Dynamic		
Rated Voltage Range Factor	(k)	1.0		
RIV at 1000 kHz	μ V	<<500		

Current

DESCRIPTION	UNIT	20kA	31.5kA	40kA	50kA	63kA
Rated Short Circuit Current	kA	20	31.5	40	50	63
Rated Making Current	kA	20	31.5	40	50	63
Closing and Latching Capability rms peak	kA	32	50	64	80	101
	kA	54	85	108	135	170
Capacitance Switching General Purpose Overhead Line	A	100				
Isolated Current Definite Purpose Overhead Line	A	250				
Isolated Current	A	100				
Asymmetrical Int. Capability Ratio (S)	—	12				
Normal Operating Temperature Range Standard	°C	-30°C to 55°C				
Special	°C	-40°C/-50°C to 55°C				
Closing Time (total)	ms	100				
Rated Reclosing Time	Cycles	12				
Rated Duty Cycle	—	OCO-10S-CO (No derating)				
External Creep Standard	in	131	131	131	131	131
Special	in	144	144	144	144	144
External Strike To Ground Standard	in	46	46	46	46	46
Special	in	53	53	53	53	53
Qty. SF ₆	lbs	58	58	58	75	75
SF ₆ Pressure	psig	87 @ 68° F/20°C				

Ratings and Specifications – 245kV

Identification	Ratings							Related Capabilities				
	Type	Nominal kV Class	Voltage		Insulation		Current		Interrupting Time (Cycles)	Current Values — Amperes		
			Rated Max kV	Rated Voltage Range Factor	Rated Withstand Test Voltage		Rated Continuous Current (Amps, rms)	Rated Short Circuit Current at Rated Max. kV		Maximum Symmetrical Interrupting Capability	3-Sec. Short Time Current Carrying Capability	Closing and Latching Capability
				Low Freq. (kA, rms)	Impulse (kV, Crest)							
SPS2 – 245-20	230	245	1.0	425	900	1200/4000	20,000	3	20,000	20,000	54,000	
SPS2 – 245-31.5	230	245	1.0	425	900	1200/4000	31,500	3	31,500	31,500	85,000	
SPS2 – 245-40	230	245	1.0	425	900	1200/4000	40,000	3	40,000	40,000	108,000	
SPS2 – 245-50	230	245	1.0	425	900	1200/4000	50,000	3	50,000	50,000	135,000	
SPS2 – 245-63	230	245	1.0	425	900	1200/4000	63,000	3	63,000	63,000	170,000	
SPS2 – 245-20	230	245	1.0	460	1050	1200/4000	20,000	3	20,000	20,000	54,000	
SPS2 – 245-31.5	230	245	1.0	460	1050	1200/4000	31,500	3	31,500	31,500	85,000	
SPS2 – 245-40	230	245	1.0	460	1050	1200/4000	40,000	3	40,000	40,000	108,000	
SPS2 – 245-50	230	245	1.0	460	1050	1200/4000	50,000	3	50,000	50,000	135,000	
SPS2 – 245-63	230	245	1.0	460	1050	1200/4000	63,000	3	63,000	63,000	170,000	

Supplementary Specifications

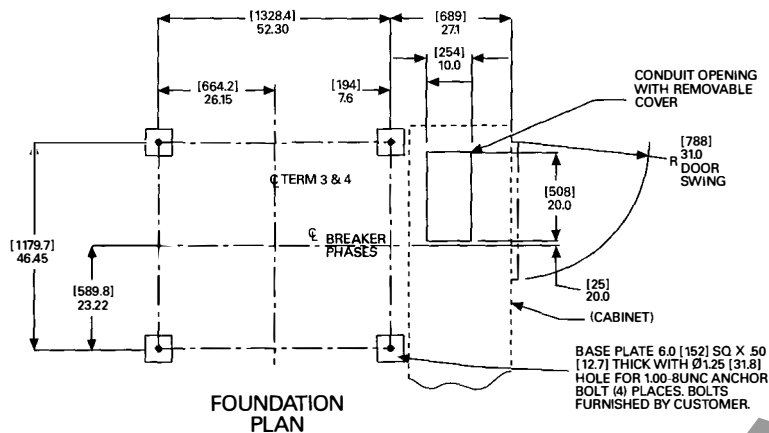
Voltage

DESCRIPTION	UNIT	SPS2 900 kV	SPS2 1050 kV
Lightning Impulse Withstand Voltage			
Chopped Wave 2 μ s	kV	1160	1160
Chopped Wave 3 μ s	kV	1040	1040
Rated Normal Current (10 ⁷)	A	12/20/31.5/40	12/20/31.5/40
Normal Frequency	Hz	60	60
Optional Frequency	Hz	50	50
Rated Permissible Tripping Delay (Y)	s	1	1
Auxiliary Voltage	Vac	115/230	
Operating Mechanism	—	Spring ("OCO")	
Trip Coils		Single (standard) – Dual (optional)	
Trip and Close Coil Rating	Vdc	48/125/250	
Breaks Per Phase	—	1	
Contact Gap	in	4.5	
Phase Spacing	in	832	
Seismic Withstand Standard	g	0.3 Dynamic	
Optional	g	0.5 Dynamic	
Rated Voltage Range Factor	(k)	10	
RIV at 1000 khz	μ V	<<500	

Current

DESCRIPTION	UNIT	20kA	31.5kA	40kA	50kA	63kA
Rated Short Circuit Current	kA	20	31.5	40	50	63
Rated Making Current	kA	20	31.5	40	50	63
Closing and Latching Capability rms peak	kA kA	32 54	50 85	64 108	80 135	101 170
Capacitance Switching General Purpose	A	160				
Overhead Line Isolated Current	A	160				
Definite Purpose Overhead Line Isolated Current	A	200				
Asymmetrical Int. Capability Ratio (S)	—	12				
Normal Operating Temperature Range Standard	°C	-30°C to 55°C				
Special	°C	-40°C/-50°C to 55°C				
Closing Time (total)	ms	100				
Rated Reclosing Time	Cycles	12				
Rated Duty Cycle	—	OCO-15S-CO (No derating)				
External Creep Standard	in	140	140	140	140	140
Special	in	205	205	205	205	205
External Strike To Ground Standard	in	68.5	68.5	68.5	68.5	68.5
Special	in	77.0	77.0	77.0	77.0	77.0
Qty. SF ₆	lbs	130				
SF ₆ Pressure	psig	87 @ 68° F/20°C				

Dimension Data – 15-72kV

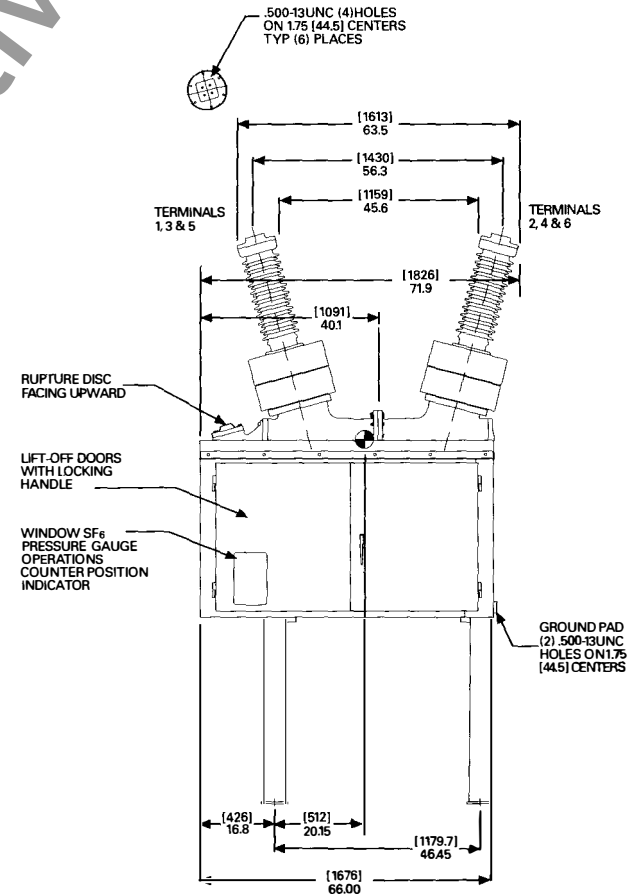
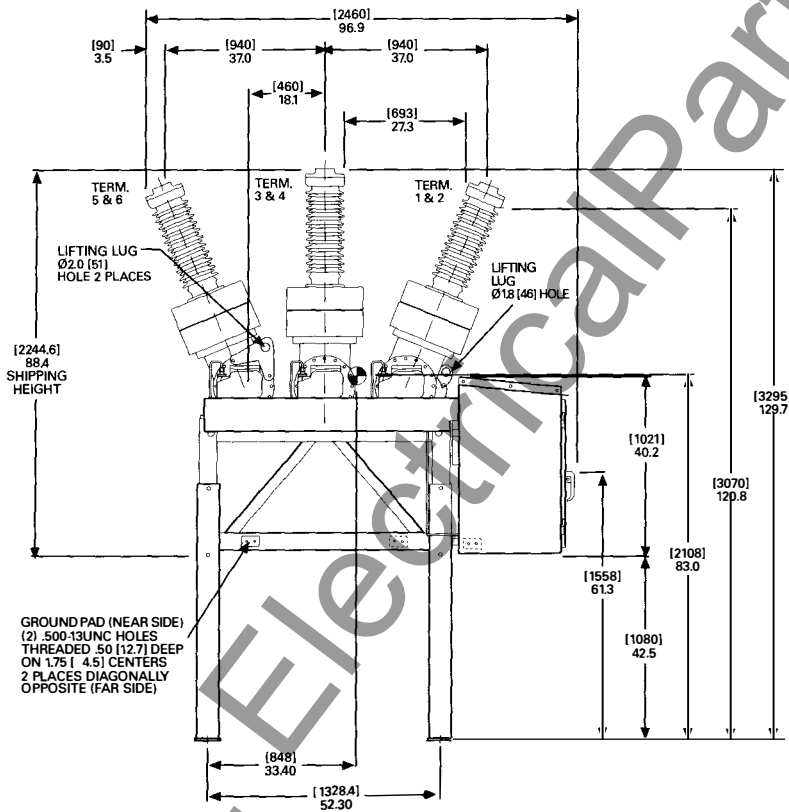


NOTES:

1. Metric Dimensions [XX.X] in millimeters.
2. Center of gravity is calculated with an equal number of CTs on each of six bushings.

APPROXIMATE WEIGHTS

Breaker Complete	4000lb [1814kG]
SF ₆	33lb [14kG]
Foundation Reaction	Negligible
Porcelain Bushings, 73"	[1854] Creep



Dimensions only for reference, not for construction purposes.

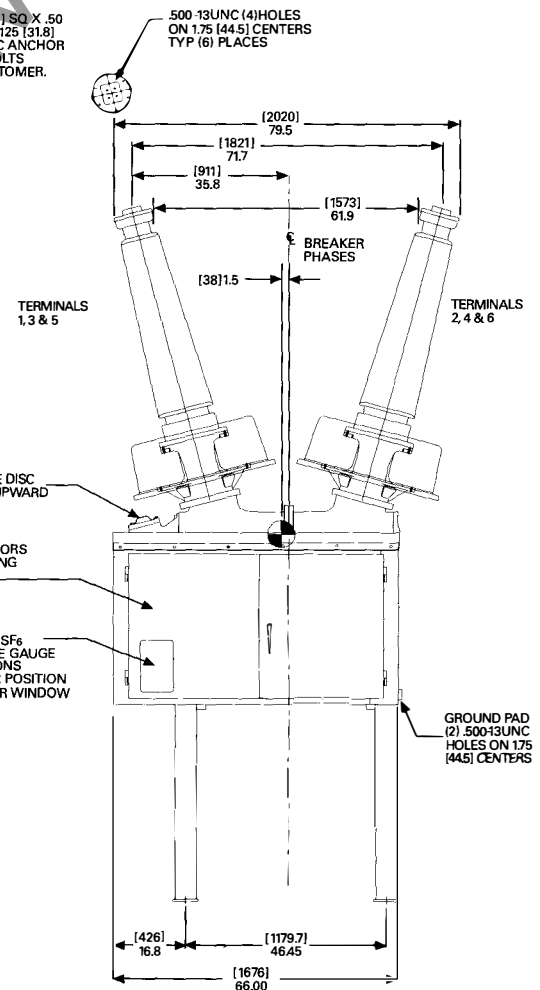
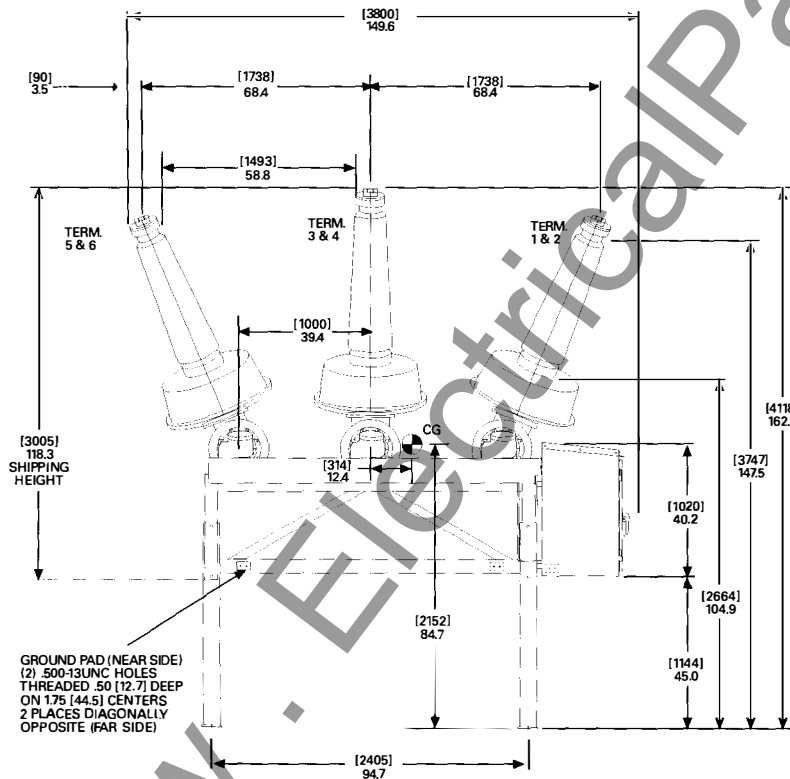
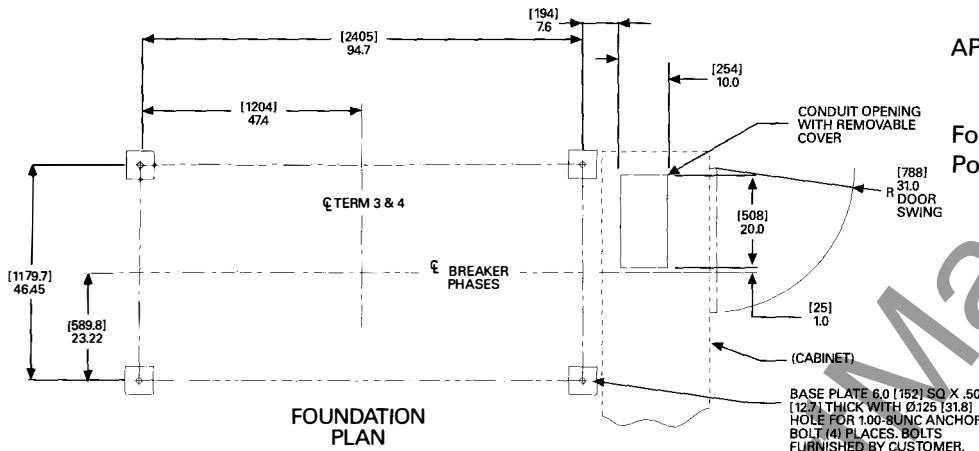
Dimension Data – 121, 145, 170kV-40kA

NOTES:

1. Metric Dimensions [XX.X] in millimeters.

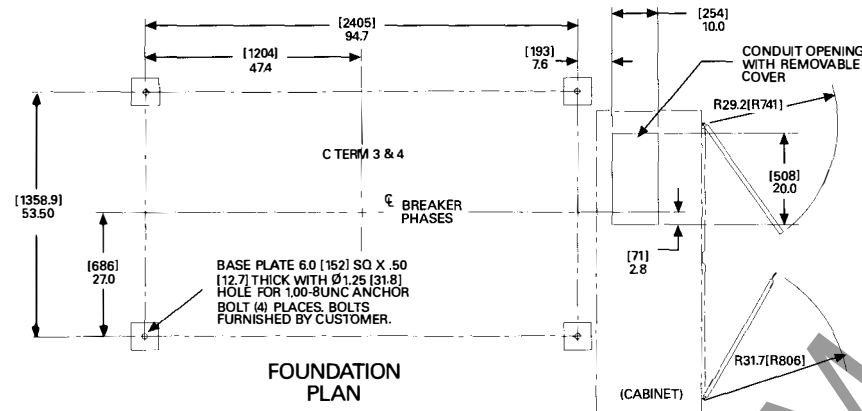
APPROXIMATE WEIGHTS

Breaker Complete7200lb [3266kG]
 SF₆.....58lb [26kG]
 Foundation ReactionNegligible
 Porcelain Bushings, 131" [3327] Creep



Dimensions only for reference, not for construction purposes.

Dimension Data – 121, 145, 170kV-50/63kA

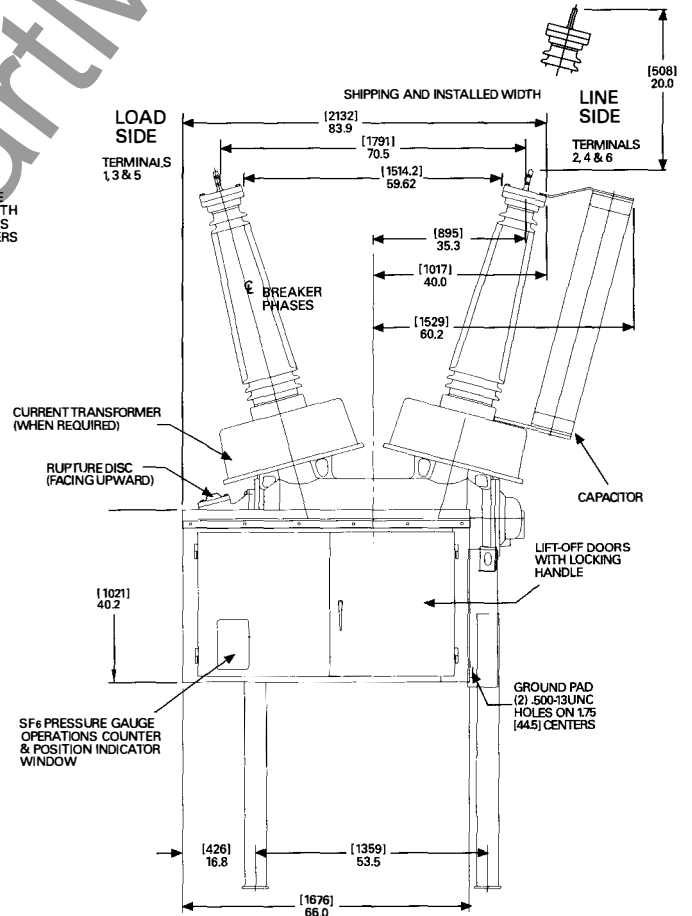
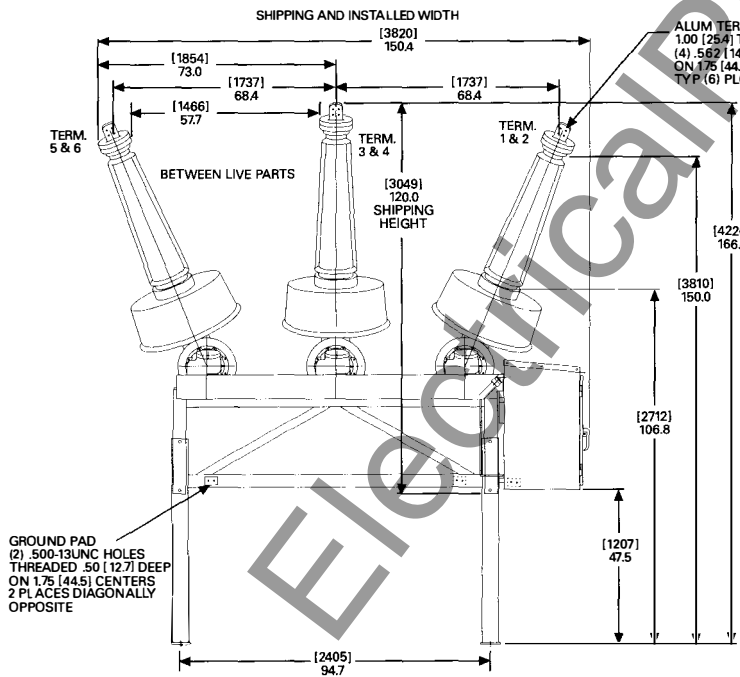


NOTES:

1. Metric Dimensions [XX.X] in millimeters.
2. Clearance required for insulator removal.

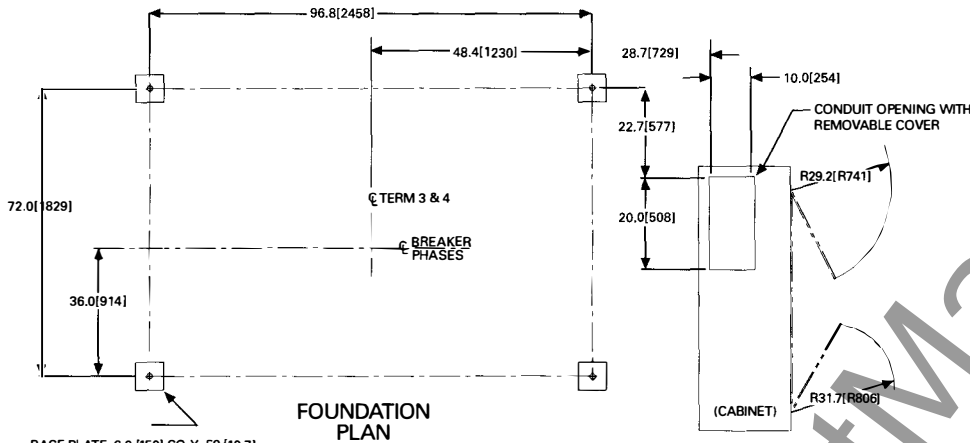
APPROXIMATE WEIGHTS

Breaker Complete7200lb [3266kG]
 SF₆.....75lb [34kG]
 Foundation ReactionNegligible
 Porcelain Bushings, 131" [3327] Creep



Dimensions only for reference, not for construction purposes.

Dimension Data – 245kV



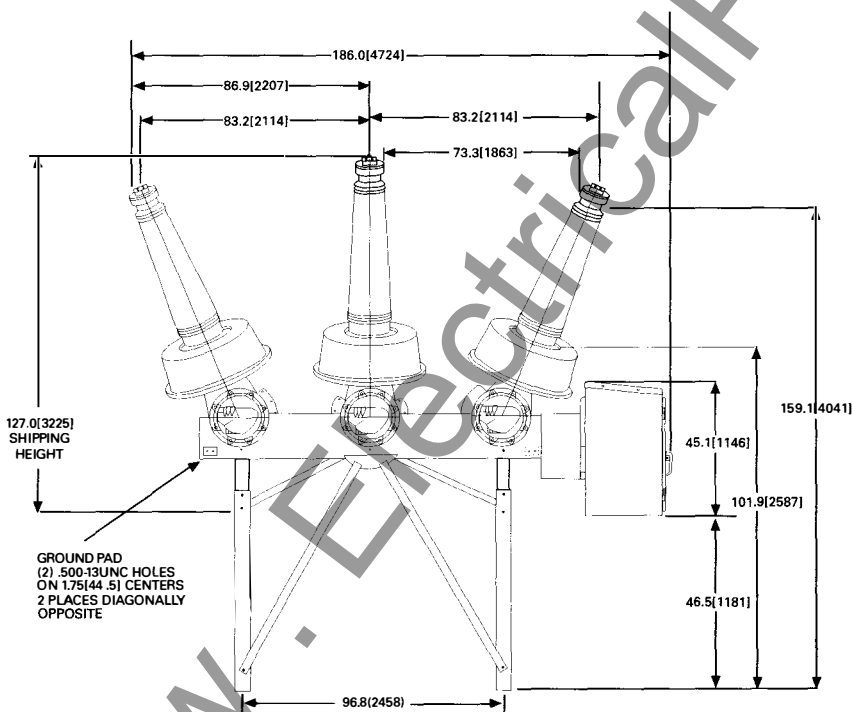
BASE PLATE, 6.0 [152] SQ X .50 [12.7] THICK, WITH Ø 1.25 [31.8] HOLE (FOR 1,000-8UNC ANCHOR BOLT (4) PLACES. FURNISHED BY CUSTOMER).

NOTES:

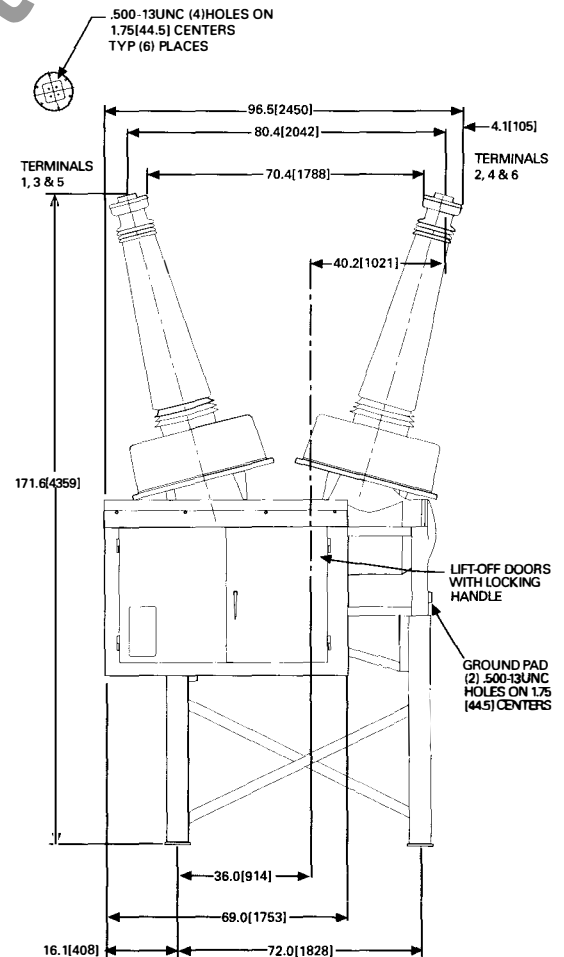
1. Metric Dimensions [XX.X] in millimeters.
2. Clearance required for insulator removal.

APPROXIMATE WEIGHTS

Breaker Complete 10,000lb [4545kG]
 SF₆ 130lb [59kG]
 Foundation Reaction Negligible
 Porcelain Bushings, 140" [3556] Creep



GROUND PAD (2) .500-13UNC HOLES ON 1.75 [44.5] CENTERS 2 PLACES DIAGONALLY OPPOSITE



.500-13UNC (4) HOLES ON 1.75 [44.5] CENTERS TYP (6) PLACES

LIFT-OFF DOORS WITH LOCKING HANDLE

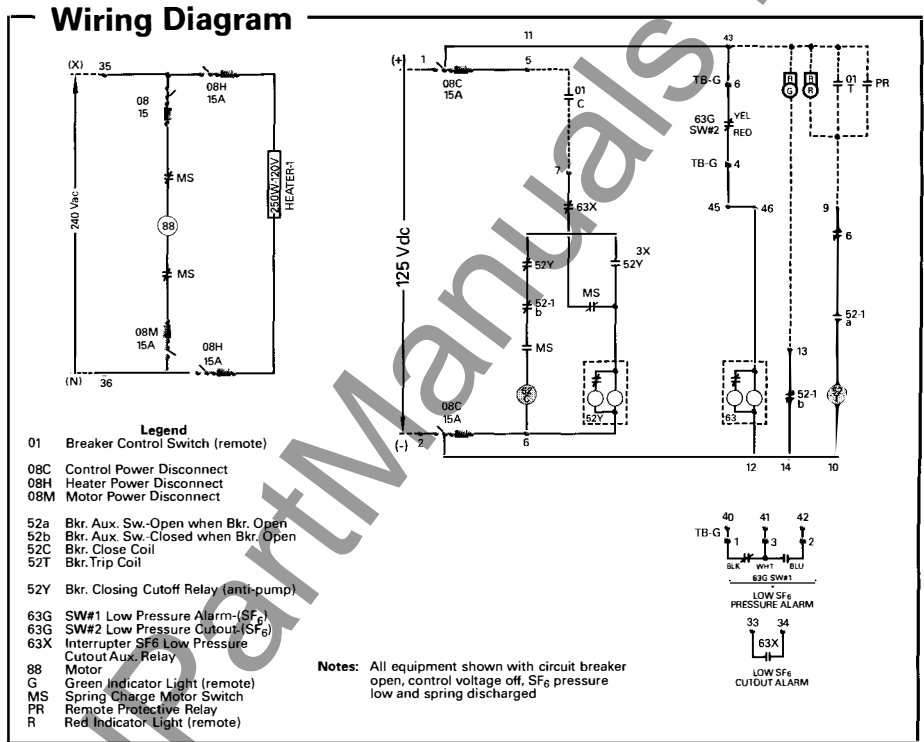
GROUND PAD (2) .500-13UNC HOLES ON 1.75 [44.5] CENTERS

Dimensions only for reference, not for construction purposes.

Spring charged operating mechanism

The SPS2 is the product of tried and proven performance in the field. Our reputation for quality and extensive global experience are captured in the design principles of this circuit breaker. For starters, more than 4,000 installations worldwide are up and running testimonies to the reliability of the spring-stored energy FA2/4 mechanism. This mechanism is fully equipped with a closing and opening spring fitted inside a common housing.

The operating mechanism incorporates roller bearings that allow wear-free transmission of forces and thus ensures a long service life. The charging gear, with its long-wearing spur wheels and its principle of no-load decoupling, is another component that ensures maintenance-free operation. Low operating mechanism force assures that the transmission elements are subjected to less stress resulting in optimal operating reliability.

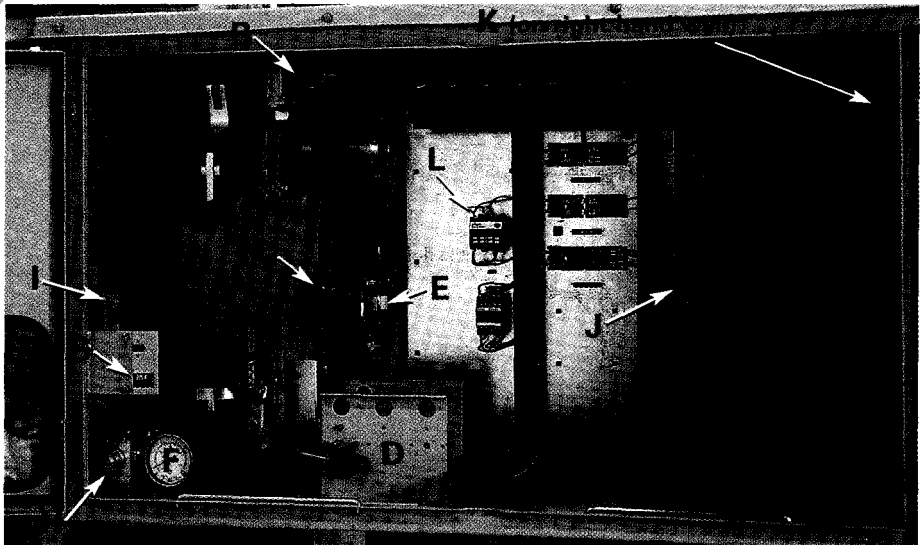


Control Power Requirements

Rated Voltage	48 VDC	125 VDC	250 VDC	115 VAC	230 VAC
Trip Coil Current (amps)	16	12.0	6.7	12.0	6.7
Close Coil Current (amps)	4.6	1.9	6.7	2.5	6.7
Motor Run Current (amps)	17.4	9.8	4.6	12.3	6.3

Spring charged operating mechanism

- A. Opening Spring
- B. Close Coil
- C. Trip Coil
- D. Auxiliary Switches
- E. Motor (125VDC/120VAC)
- F. SF₆ Pressure Gauge
- G. Open/Close Indicator
- H. SF₆ Fill Connection
- I. SF₆ Density Switch
- J. Control Terminal Blocks
- K. Transformer Terminal Blocks (on right hand wall)
- L. Control Relay (on back panel)



Live-tank and dead-tank circuit breakers

Same technology for every application in two designs

Both the live-tank and the dead-tank design possess their own special features, and each design has its own particular advantages.

Special technical features of live-tank design

On live-tank circuit breakers, the interrupter chamber is arranged in the insulator, which can be either porcelain or of a composite material, and is at high potential with the voltage level determining the length of the insulators for the interrupter chamber and the insulator column.

For higher voltage levels, several interrupter chambers are series-connected on live-tank circuit breakers and installed on the insulator column.

The current transformers are arranged separately either in front of or behind the live-tank circuit breakers. As in live-tank circuit breakers, no fault currents can occur between the interrupter unit and the housing; only one current transformer per pole assembly is necessary.

A further feature of live-tank circuit breakers are the comparatively small gas compartments. The advantage of the low gas volume is that there is a reduction in the amount of gas maintenance work.

To ensure the safe operation of live-tank circuit breakers in seismic regions, the breakers can be mounted on anti-friction structures, a solution that has been tested up to 800kV and has proved its worth many times.

Special technical features of dead-tank design

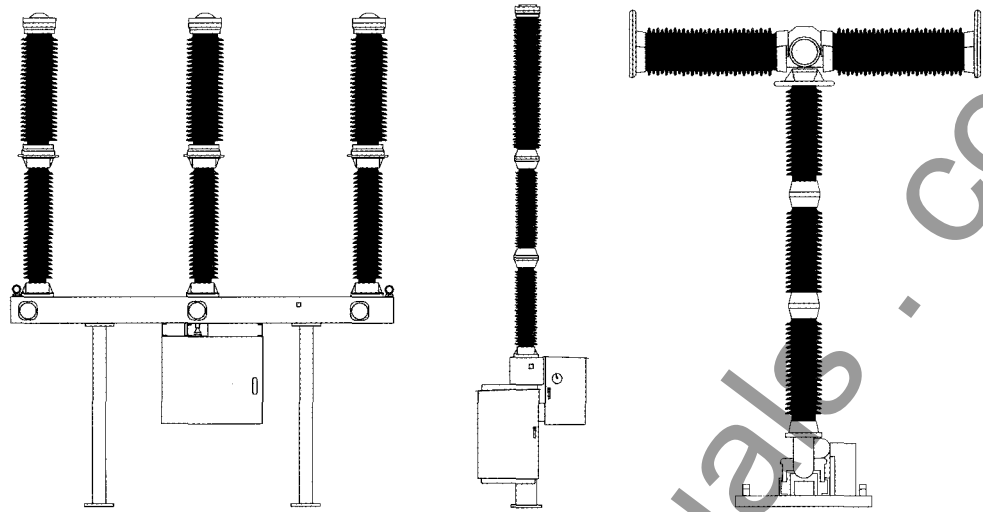
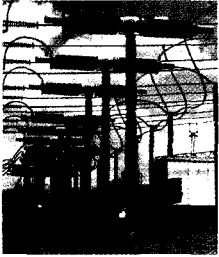
The distinguishing feature of dead-tank technology is that the interrupter chamber is accommodated in an earthed metal housing. With this arrangement, the SF₆ gas filling insulates the high voltage live parts of the contact assembly from the housing. The connection to the high voltage is via a SF₆ outdoor bushing.

The current transformers are mounted directly on the bushing, which eliminates the fastening devices and cabling required in the case of exterior mounting.

Dead-tank circuit breakers offer particular advantages if the protection design requires the use of several current transformers per pole assembly, such as for a typical American system. The possibility of being able to arrange current transformers in front of and behind the circuit breaker enables protection schemes to be met in a particularly cost-saving manner. Furthermore, it is relatively simple to retrofit the current transformers in the field.

As an additional advantage, dead-tank circuit breakers are particularly resistant to earthquakes due to their compact design and low center of gravity.

Live-Tank



Type

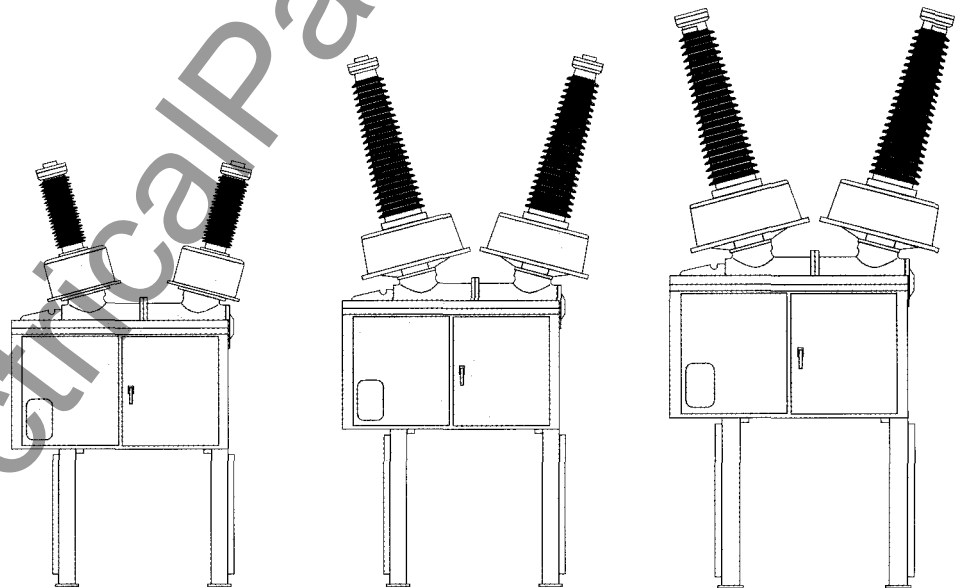
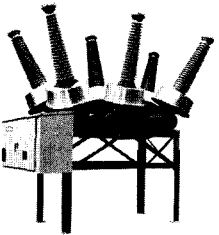
3AP1

3AT2/3

Electrical data

Rated voltage	kV	72.5	123	145	170	245/300	245	362	550
Rated power-frequency withstand voltage	kV	140	230	275	325	460	460	555	860
Rated lightning impulse withstand voltage	kV	325	550	650	750	1050	1050	1300	1800
Rated nominal current up to	A	4000	4000	4000	4000	4000	4000	4000	4000
Rated breaking current up to	kA	40	40	40	50	50	80	63	63

Dead-Tank



Type

SPS2

Electrical data

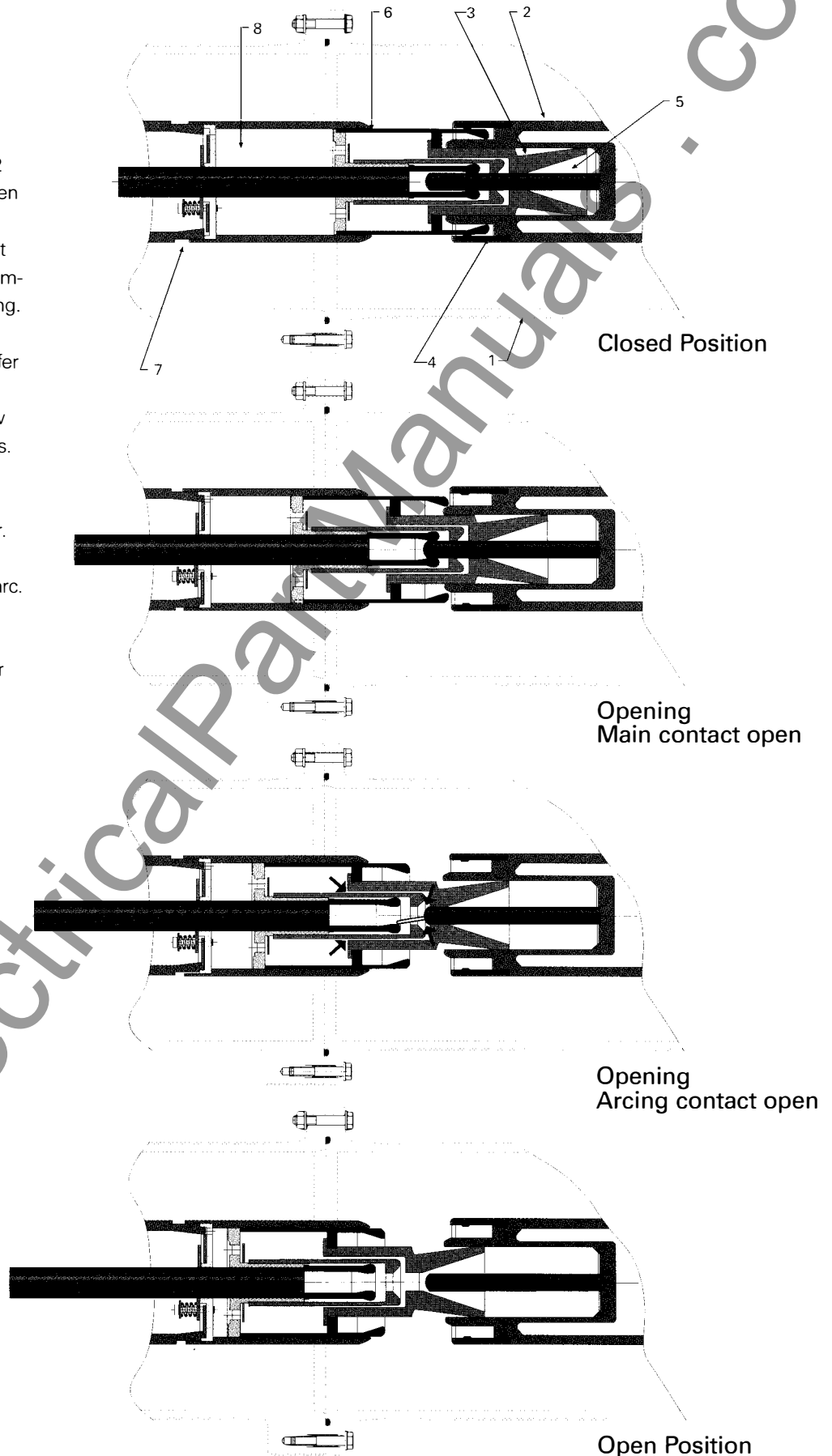
Rated voltage	kV	38	48.3	72.5	121	145	170	245
Rated power-frequency withstand voltage	kV	80	105	160	260	310	365	425
Rated lightning impulse withstand voltage	kV	200	250	350	550	650	750	900
Rated nominal current up to	A	4000	4000	4000	4000	4000	4000	4000
Rated breaking current up to	kA	40	40	40	63	63	63	63

Interrupter unit – Arc quenching

The durable construction of the SPS2 circuit breaker includes the field proven 3AP arc-assist interrupter. Each interrupter consists of a stationary contact assembly and a moving contact assembly mounted inside a pole unit housing.

During the opening operation, the puffer action in the compression cylinder of the 3AP interrupter is sufficient for low current faults and switching operations. During high current interruptions, heat from the arc causes the pressure to rise in the heating volume chamber. The resulting high pressure gas from the heating volume extinguishes the arc.

This arc-assist technology, coupled with our FA2 up to 170kV and FA4 for 245kV spring-stored energy operator, assures that the components are subjected to less stress which results in optimal operating reliability.



Getting the best breaker for your needs

In considering any circuit breaker, today's utilities must be concerned not only with initial price and installation, but also with the ongoing costs of ownership. The Siemens SPS2 wins in every category. Its relatively low price tag, simple installation and easy maintenance will continue to pay dividends decades into the future.

In addition to the reliable performance you can expect from your SPS2 breaker, you'll also find it can handle a number of special requirements, such as:

- ✎ Switching capacitors, cables and reactors
- ✎ Environmentally restricted sites requiring oil sumps
- ✎ System stability problems requiring three-cycle interrupting
- ✎ Reclosing duty without derating interrupting capability
- ✎ High contamination zones that require extra creep and low contamination weather sheds
- ✎ High altitude application up to 10,000 feet without derating

How to order

When ordering a Type SPS2 breaker, specify the following:

1. Breaker type and rating
2. Trip voltage (see Ratings Section)
3. Close voltage (see Ratings Section)
4. Motor voltage: 120 VAC/125 VDC, 240 VAC/250 VDC, 48 VDC
5. Heater voltage: 115, 230 VAC
6. BCTs: type, ratio, number, location
7. Terminals: specify in detail if desired
8. Include customer specifications covering special equipment, accessories, test, etc.

Basic breaker

The standard basic breaker includes:

1. Three-pole SF₆-filled outdoor power circuit breaker with three SF₆ interrupters
2. Galvanized frame with four galvanized steel legs
3. Light gray standard color
4. Six light gray SF₆-filled bushings
5. Six relaying accuracy bushing current transformers
6. Trip-free spring operating mechanism
7. Instrumentation to monitor SF₆ gas pressure and provide low pressure alarm
8. Twelve-stage auxiliary switch; eight stages for customer use
9. Trip coil and close coil
10. Cabinet heater to prevent condensation
11. Necessary terminal blocks and wiring
12. Operations counter
13. Fused knife switches (3)
14. Grounding pads (3)
15. Mechanical position indicator
16. Provision for travel recorder attachment
17. SF₆ gas for initial filling
18. Set of special hand tools required for installation

Operational modifications

1. Extra BCTs
2. Metering accuracy BCTs
3. Extra creepage bushings
4. Capacitor trip
5. Relays for reclosing or non-reclosing breaker application
6. External pull to trip handle
7. Cabinet light and convenience outlet
8. Special heaters and cabinet insulation for operation down to -50°C
9. One or two additional 12-pole auxiliary switches
10. Dual trip coils
11. Control switch
12. Local/remote switch
13. Thermostat for cabinet heater

Bushing current transformers

External bushing current transformers are mounted in weatherproof housings on both sides of the breaker. Their leads terminate in the control cabinet at short circuiting type terminal blocks. Space is available for mounting two current transformers per bushing. Up to three CTs can be supplied at 121kV and above.

Ratio ①,③	Accuracy ②	
	ANSI	IEC
600:5 MR	C-200	5P10@15VA
600:5 MR	C-400	10P20@50VA
1200:5 MR	C-400	CLASS0.5@30VA
1200:5 MR	C-800	CLASSX
2000:5 MR	C-400	10P20@50VA
2000:5 MR	C-800	CLASS0.5@30VA
3000:5 MR	C-800	CLASS0.5@30VA
300:5 SR	0.6B-0.5	CLASS0.25@20VA
600:5 SR	0.3B-0.5	5P20@20VA
600/1200:5 DR	0.3B-0.5/0.3B-1.0	10P20@50VA
1200:5 SR	0.3B-1.0	CLASS0.2@15VA
2000:5 S	0.3B-2.0	CLASS0.2@15VA

① **Ratio**
MR = Multiple Ratio
SR = Single Ratio
DR = Dual Ratio

② **Accuracy**
C = Relay Accuracy
B = Meter Accuracy

③ **Typical Ratios**
Special Ratios Available
Upon Request

www.ElectricalPartManuals.com

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