

DATA SHEETS - HS Series

72.5kV/31.5kA - 2000A

1. Voltage Rating	
1.1 Normal System Voltage	69kV
1.2 Rated Maximum Voltage	72.5kV
1.3 Voltage Range Factor	1.0
2. Interrupting Current Rating	
2.1 Symmetrical Short Circuit Capability	31.5kA
2.2 Three second short-time current carrying capability	31.5kA
2.3 Close and Latching Capability	85kA Crest
2.5 Capacitance Switching	
2.5.1 Line Charging Current	125A, rms
2.5.2 Isolated Shunt Capacitor Bank Current	630A, rms
2.5.3 Back to Back Shunt Capacitor Bank Current	630A, rms
2.6 Out of Phase Switching	7.875kA, rms
2.7 Percent interrupting capability after 0-0 sec-CO-15 sec-CO duty cycle	100%
3. Continuous Current Rating	2000A
4. Operating Time (60 Hz basis)	
4.1 Permissible Tripping Delay	2 sec.
4.2 Interrupting Time	3 cycles
4.3 Opening Time	1.8 cycles
4.4 Closing time	7 cycles
4.5 Minimum allowable reclosing time	20 cycles
4.6 Reclosing range	20-120 cycles
5. Environmental Capabilities	
5.1 Maximum Ambient	40°C
5.2 Minimum Ambient	
5.2.1 Without Tank Heaters	-30°C
5.3 Contact temperature rise (max.)	65°C
5.4 Seismic Capability, ANSI Standard	.2 g
5.5 Seismic Capability, Optimum	.5g
5.6 Wind Capability	112 mph

6.	Insulation Level	
6.1	One minute dry withstand (60 HZ)	160kV
6.2	Ten second wet withstand	140kV
6.3	Full wave lightning impulse (BIL)	350kV
6.4	2 μsec chopped wave withstand	452kV
6.4	3 μsec chopped wave withstand	402kV
7.	Dielectric Strength at Atmospheric Pressure	1.2 times
8.	Pre-insertion Resistors	None
9.	Voltage Grading Capacitors	None
10.	TRV Control Capacitors	None
11.	Breaks per Phase	1
12.	Operating Mechanism	
12.1	Type	Spring
12.2	Individual or common mechanism	Common
12.3	Motor Type	Series
12.4	Motor Manufacturer	B & D
	12.4.1 Voltage (Single Phase)	120 Vdc
	12.4.2 Power Requirements	.75 kw
12.5	Maximum number of stored open-close-open operations	1
12.6	Spring Charge Time	15 sec.
13.	SF6 System	
13.1	Normal operating pressure at 20°C	75 psig
13.2	Minimum operating pressure with full rating	64 psig
13.3	Temperature compensated gas density alarm	69 psig
13.4	Temperature compensated gas density lockout	64 psig
13.5	Overpressure relief valve	100 psig
13.6	Weight of SF6 gas	31 lbs.
13.7	Acceptable Moisture Level	150 ppm/wt
13.8	Dielectric Strength at Atmospheric Pressure	
	13.8.1 Impulse withstand voltage	N/A
	13.8.2 Low frequency (60 Hz) withstand voltage	
	Across open contacts	N/A
	Phase to Ground	N/A
13.9	Pressure below which breaker must be isolated	64 psig
14.	Trip Coil	

14.1	Voltage	125V DC
14.2	Allowable Voltage Range	70-140V DC
14.3	Current	21A
14.4	Resistance	6 ohms
14.5	Number of trip coils	2
15.	Close Coil	
15.1	Voltage	125V DC
15.2	Voltage Range	90-140V DC
15.3	Current	6.9A
15.4	Resistance	18 ohms
15.5	Number of close coils	1
16.	Bushings	
16.1	Manufacturer	Locke
16.2	Insulation Medium	SF6
16.3	Voltage rating	72.5kV, rms
16.4	Current rating	2000A, rms
16.5	Wet withstand test at operating frequency	140V, rms
16.6	Dry withstand voltage at operating frequency	160V, rms
16.7	Full-wave impulse withstand voltage test	350kV
16.8	Creepage distance	48"/1214 mm
16.9	Extra Creep distance	70"/1788 mm
16.10	Additional Height required to remove bushing	174 inches
16.11	Insulation Class (BIL)	350kV
16.12	Permissible safe cantilever strength	150 lbs
16.13	Strike distance (phase to ground)	22.8 inches
16.14	Phase spacing	44 inches
16.15	Strike distance (phase to phase)	36 inches

17.	Operating Mechanism & Auxiliaries	
17.1	Heater coil voltage	240 V,ac
17.2	Heater coil wattage	100 Watts
17.3	Cut on/off Temperature	52/67 F
17.4	Number of Auxiliary Contacts per Mechanism	6a, 6b
18.	Breaker Dimensions	
18.1	Height of breaker to top of terminal	138 inches
18.2	Total length	102 inches
18.3	Width	83 inches
18.4	Height of live part to foundation	125 inches
18.5	Net Weight (including SF6 gas)	5,000 lbs.
18.6	Shipping Weight (excluding SF6)	5,250 lbs.
18.5	Impact loading for foundation design	N/A
18.6	Phase spacing	46 inches
18.7	Intraphase spacing	51 inches
19.	CT Standard Ratings (<i>Dead Tank design, mounted directly on bushings</i>)	
19.1	Max. number available per bushing	2
19.2	Number proposed per bushing	per spec
19.3	Relaying or metering accuracy	per spec
19.4	Accuracy (relaying)	per spec
19.5	Ratio	per spec
19.6	Thermal Rating Factor	per spec
20.	Maintenance Requirements	
20.1	Arcing contact material	Cu/W
20.2	No. short circuits before internal maintenance check	10
20.3	Number of rated continuous current interruptions before internal maintenance check recommended	2000
21.	Applicable Standards	
21.1	ANSI	C37
21.2	NEMA	SG4