

Gas Insulated Switchgear

TGP145

Technical Data

TGOOD
2020-5-21

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Operating environmental conditions

Place of installation	Indoor or outdoor
Ambient temperature	-45°C ~ +55°C
Altitude	1000m (no limitation for specially ordered products)
Air humidity	Daily average $\geq 95\%$ Monthly average $\geq 90\%$ (25°C)
Wind speed	$\geq 35\text{m/s}$ (wind pressure $\leq 700\text{Pa}$)
Irradiance	$\leq 0.1\text{W/cm}^2$ (wind speed: 0.5m/s)
Earthquake intensity	Horizontal acceleration $\leq 0.5\text{g}$, Vertical acceleration $\leq 0.5\text{g}$
Ice thickness	$\leq 10\text{mm}$
Creepage distance	25mm/kV (pollution level III), 31mm/kV (pollution level IV)

This product shall be placed in a site without risk of fire hazard, explosion, chemical corrosion and sharp vibration.

TGP145		
Rated voltage	kV	145
Rated frequency	Hz	50/60
Rated current	A	2000/2500/3150
Rated short time withstand current / time	kA/s	40/3
Rated peak withstand current	kA	104
Insulation level	Rated short time power frequency withstand voltage (1 min.)	kV 275 (to earth / interphase) 315 (across isolating distance)
	Rated lightning impulse withstand voltage (peak value)	kV 650 (to earth / interphase) 750 (across isolating distance)
Rated SF ₆ gas pressure / Min. functional pressure (20°C)	MPa	Circuit breaker gas tank 0.65/0.6; VT / surge arrester gas chamber 0.5 / 0.45; Other gas chambers 0.5 / 0.45
Water content of SF ₆	μL/L	Circuit breaker chamber ≤150 (during handover); Other gas chamber ≤ 250 (during handover)
Partial discharge	pC	≤10
SF ₆ annual leakage rate	%/y	≤0.1
Level of radio interference	μV	≤500
Enclosure and insulator strength	MPa	2.6
Compartment width	m	0.8

Circuit-breaker		
Rated short circuit breaking current	kV	40
Rated short circuit making current	kV	104
Rated circuit charging breaking current	A	50
Rated cable charging breaking current	A	160
Rated out-of-phase breaking current	kA	10
Close-in fault breaking current	kA	36/30
First-pole-to-clear factor		1.5

Rated operation sequence		0-0.3s-CO-180s-CO		
Closing time (rated voltage)	ms	85±10		
Opening time (rated voltage)	ms	32±5		
Total breaking time	ms	≤60		
Min.SF6 functional pressure (20°C)	MPa	0.6		
Actuation mechanism		Spring-actuated mechanism		
Mechanical endurance		M2		
Electrical endurance		E2		
Shunt reactor switching		Duty 1/2/3/4		
Closing / opening coil	Voltage (DC)	V	220	110
	Closing coil resistance / current	Ω/A	94/2.3	33/3.3
	Opening coil resistance / current	Ω/A	78/2.8	19/5.8
Energy storage motor	Power	W	600	
	Voltage (DC/AC) / Current	V/A	220V/2.3A	
Dynamic load		N	20,000 (Vertically upwards) 20,000 (Vertically downwards)	

Three-position switch

Rated operation time	s	Opening ≥3 Closing ≥3
Rated control voltage / power	V/W	(DC/AC)220/360
Rated operation torque	N·m	20
Rated making / breaking bus transfer current / voltage	A/V	1600/30
Times of rated making / breaking bus current transfer	times	100

Fast earthing switch

Rated operation time	s	Opening ≥3 Closing ≥3
Rated controlling voltage / power	V/W	(DC/AC)220/240
Rated operation torque	N·m	50
Rated short circuit making current	kA	104

Making / breaking electromagnetic induction current / voltage	A/kV	100/6
Making / breaking electrostatic induced current / voltage	A/kV	5/6
Bus charging switch	times/A	100/0.5

Busbar

Rated current	A	2000/2500/4000
Rated short-time power frequency withstand voltage (interphase, to earth, 1min)	kV	275
Rated lightning impulse withstand current (interphase, to earth, peak value)	kV	650

Bushing

Rated short-time power frequency withstand voltage (1min)	kV	275
Rated lightning impulse withstand voltage (peak value)	kV	650
Nominal creepage distance	mm	25/kV (Level III) 31/kV (Level IV)

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