

TECHNICAL DATA SHEETS:

Circuit breaker Type: 3AP1FG-145kV (110Vdc) Creepage – 31mm/kV

Technical data according to	IEC-62271-100	
Ambient temperature range	-20/+45	°C
Auto-reclosing, suitable for number of phases	3	
Insulation capacity		
Max. erection altitude	1.000	m
Rated voltage	145,0	kV
Service voltage	132,0	kV
Rated power frequency withstand voltage		
- to earth	275	kV
- across the open breaker	275	kV
- between phases	275	kV
Rated lightning impulse withstand voltage		
- to earth	650	kV
- across the open breaker	650	kV
- between phases	650	kV
Breaking capacity		
Arcing time (max.)	25	ms
Rated normal current	3.150,00	A
Rated short-circuit breaking current	40	kA
Rated duration of short-circuit	3	s
Rated frequency	50	Hz
Rated operating sequence	O-0,3s-CO-3min-CO	
Rated short-circuit making current	100	kA
First-pole-to-clear factor	1,5	p.u.
Rated Out-of-phase breaking current	10,0	kA
Out-of-phase factor PH	2,50	p.u.
----- Breaking of capacitive currents -----		
Unloaded overhead lines - breaking current	50,00	A
at a voltage factor of	1,40	p.u.
Unloaded cable - breaking current	140,00	A
at a voltage factor of	1,40	p.u.
Operating times		
Make time (min.)	61±8	ms
Closing time	65±8	ms
Rated break time	Max.60	ms
Opening time	29±6	ms
Dead time	300	ms
Simultaneity difference between poles (ON/OFF)	max.3/ max.2	ms

Design data

Number of operating mechanisms	1	
Number of poles	3	
Number of base frames	1	
Interrupter units per pole	1	
Centre distance of steel supporting structure	2.530	mm
Minimum clearance in air:		
- to earth	1.250	mm
- across the open breaker	1.200	mm
- Phase to phase	1.360	mm
Phase to phase spacing	1.700	mm
Creepage distance		
- to earth	31	mm/kV
- across open breaker	31	mm/kV

Design similar to dimension drawing

Reference GA enclosed

Arc quenching medium

Rated pressure SF6 at 20° C	6,00	bar rel.
Signal loss of SF6 at 20° C	5,20	bar rel.
General lockout at 20° C	5,00	bar rel.
Quantity of SF6 / breaker	7,2	kg
SF6-loss-rate / year	≤ 0.5	%

Operating mechanism

Spring operating mechanism

Control unit data

Control voltage	110 DC	V
Voltage of motor	110 DC	V
Voltage of heating	230 AC	V
Voltage tolerance	+10/-15	%
free auxiliary contacts, wired (NO/NC/W)	9/9/1	

Design of monitoring

Number of tripping-coils (Per breaker)	2
Number of closing-coils (Per breaker)	1