



Type	3AT2/3AT3					
Rated voltage	kV	245	300	362	420	550
Number of interrupter units per pole		2	2	2	2	2
Rated power-frequency withstand voltage 1 min.	kV	160	460	520	610	800
Rated lightning impulse withstand voltage 1.2/50 μ	kV	1050	1050	1175	1425	1550
Rated switching impulse withstand voltage	kV	-	850	950	1050	1175
Rated current up to	A	4000	4000	4000	4000	4000
Rated short-time current (3 s) up to	kA	80	63	63	63	63
Rated peak withstand current up to	kA	216	170	170	170	170
Rated short-circuit breaking current up to	kA	80	63	63	63	63
Rated short-circuit making current up to	kA	216	170	170	170	170
Rated duty cycle		O-0.3 s - CO - 3min - CO or CO -15 s - CO				
Break time	cycles	2	2	2	2	2
Frequency	HZ	50/60	50/60	50/60	50/60	50/60
Operating mechanism type		Electrohydraulic mechanism				
Control voltage	V,DC					48...250
Motor voltage	V,DC					48...250 or
	V,AC					280/120... 500/289 50/60 Hz
Design data of the basic version:						
Clearance Phase/earth	mm	2200	2200	2700	3300	3800
in air across the contact gap	mm	2000	2400	2700	3200	3800
Minimum Phase/earth	mm	6050	6050	7165	9075	13750
Creepage distance across the contact gap	mm	6070	8568	9360	11390	13750
Dimensions Height	mm	4490	4490	6000	6000	6700
Width	mm	7340	8010	9300	10100	13690
Depth	mm	4060	4025	4280	4280	5135
Distance between pole centres	mm	3000	3400	3900	4300	5100
Weight of circuit-breaker	kg	5980	6430	9090	8600	12500
Inspection after		25 Years				



Type	3AP2/3AQ2		
Rated voltage	kV	362	420
Number of interrupter units per pole		2	2
Rated power-frequency withstand voltage 1 min.	kV	520	230
Rated lightning impulse withstand voltage 1.2/50 μ	kV	1175	1425
Rated switching impulse withstand voltage	kV	950	1050
Rated current up to	A	4000	4000
Rated short-time current (3 s) up to	kA	63	63
Rated peak withstand current up to	kA	170	170
Rated short-circuit breaking current up to	kA	6.3	63
Rated short-circuit making current up to	kA	170	170
Rated duty cycle	O-0.3 s - CO - 3min - CO or CO -15 s - CO		
Break time	cycles	3	3
Frequency	HZ	50/60	50/60
Operating mechanism type	Spring-stored energy mechanism/electrohydraulic mechanism		
Control voltage	V,DC		
Motor voltage	V,DC V,AC		
Design data of the basic version:			
Clearance Phase/earth	mm	2750	3400
in air across the contact gap	mm	2700	3200
Minimum Phase/earth	mm	7875	10375
Creepage distance across the contact gap	mm	9050	10500
Dimensions Height	mm	4150	4800
Width	mm	8800	9400
Depth	mm	3500	4100
Distance between pole centres	mm	3800	4100
Weight of circuit-breaker	kg	4700	5000
Inspection after	25 Years		



Type	3AP1/3AQ1					
Rated voltage	kV	72.5	123	145	170	245/3C
Number of interrupter units per pole		1	1	1	1	1
Rated power-frequency withstand voltage 1 min.	kV	140	230	275	325	460
Rated lightning impulse withstand voltage 1.2/50 μ	kV	325	550	650	750	1050
Rated switching impulse withstand voltage	kV	-	-	-	-	-/850
Rated current up to	A	4000	4000	4000	4000	4000
Rated short-time current (3 s) up to	kA	40	40	40	40/50	50
Rated peak withstand current up to	kA	108	108	108	135	135
Rated short-circuit breaking current up to	kA	40	40	40	40/50	50
Rated short-circuit making current up to	kA	108	108	108	135	135
Rated duty cycle						
Break time	cycles	3	3	3	3	3
Frequency	HZ	50/60	50/60	50/60	50/60	50/60
Operating mechanism type	Spring-stored energy mechanism/electrohydraulic mechanism					
Control voltage	V,DC					60...250
Motor voltage	V,DC					60...250
	V,AC					120...240 50/60 Hz
Design data of the basic version:						
Clearance Phase/earth	mm	700	1250	1250	1500	2200
in air across the contact gap	mm	1200	1200	1200	1400	1900/2
Minimum Phase/earth	mm	2248	3625	3625	4250	6150/7
Creepage distance across the contact gap	mm	3625	3625	3625	4250	6125/7
Dimensions Height	mm	2750	3300	3300	4030	5220/5
Width	mm	3200	3900	3900	4200	6600/7
Depth	mm	660	660	660	660	800
Distance between pole centres	mm	1350	1700	1700	1850	2800/3
Weight of circuit-breaker	kg	1350	1500	1500	1600	3000
Inspection after						25 Years



Type	3AT2/3AT3				
Rated voltage	kV	362	420	550	800
Number of interrupter units per pole		4	4	4	4
Rated power-frequency withstand voltage 1 min.	kV	520	610	800	1150
Rated lightning impulse withstand voltage 1.2/50 μ	kV	1175	1425	1550	2100
Rated switching impulse withstand voltage	kV	950	1050	1175	1425
Rated current up to	A	4000	4000	4000	4000
Rated short-time current (3 s) up to	kA	80	80	63	63
Rated peak withstand current up to	kA	200	200	160	160
Rated short-circuit breaking current up to	kA	80	80	63	63
Rated short-circuit making current up to	kA	200	200	160	160
Rated duty cycle					
Break time	cycles	2	2	2	2
Frequency	HZ	50/60	50/60	50/60	50/60
Operating mechanism type		Electrohydraulic mechanism			
Control voltage	V,DC	48...250			
Motor voltage	V,DC	48...250 or			
	V,AC	280/120... 500/289 50/60 Hz			
Design data of the basic version:					
Clearance Phase/earth	mm	2700	3300	3800	5000
in air across the contact gap	mm	4000	4000	4800	6400
Minimum Phase/earth	mm	7165	9075	10190	13860
Creepage distance across the contact gap	mm	12140	12140	17136	22780
Dimensions Height	mm	4990	6000	6550	8400
Width	mm	10600	11400	16600	22200
Depth	mm	6830	6830	7505	9060
Distance between pole centres	mm	4350	4750	7200	10000
Weight of circuit-breaker	kg	14400	14700	19200	23400
Inspection after		25 Years			



Quality

Right from the Start

Development

The foundations for the quality of Siemens high-voltage circuit breakers are laid right at the beginning of the development of a new product. Switching performance, high voltage stability and performance under normal mechanical loads (wind and short circuits) and in an earthquake are simulated and optimized in the outline design phase using computer-aided calculations.

All 3AP1 circuit breakers can be used in earth-quakes up to 0.5 g with-out additional fittings. In our Berlin switching plant, there is a modern testing laboratory, where all the required fittings are available:

Physics laboratory
High-voltage testing laboratory
Switching performance testing laboratory
Mechanical testing laboratory
Heating testing laboratory

The testing laboratory is certified by the German accreditation site Technik e.V. in accordance with DIN 45001. Through the society for electrical high-performance tests (PEHLA), the testing laboratory is part of the European network of independent testing organizations (STL).

The 3AP1 and 3AP2 circuit breakers were completely homologated in accordance with IEC 60056 and 60694 before their market launch.

Routine tests

Important modules are subjected to complete preliminary testing before assembly. As a result it is possible, for example to guarantee a leakage rate for the circuit breaker of less than 0.5% per year. Every circuit breaker is completely assembled in the test laboratory. The requirements for the computer aided routine testing are automatically taken from the order handling process. There by the fulfillment of every customer requirement is ensured before dispatch.

The routing testing is carried out according to IEC or ANSI and includes at least the following points:

A series of 100 mechanical operating cycles
Determination of operating time
Tripping and motor currents
Gas monitoring, testing of the control circuits according to the circuit diagram
Voltage drop in the main current path
High-voltage testing

EQUIPMENTS

Our workshop has been equipped with the following equipments for assembling and routine tests:

- 1- Semiautomatic C.B testing type CABT2 manufacturer: SIEMENS
- 2- SF6-gas service cart manufacturer: DILO
- 3- High voltage test transformer (600 kv-200 kva) DANESHGAHI ELM VA SANAT manufacturer: JAHAD
- 4- Leakage detector manufacturer: DILO
- 5- SF6 filling device manufacturer: DILO
- 6- Dew point instrument manufacturer: DILO
- 7- Volume percentage measuring device manufacturer: DILO

