

Circuit-breakers for power distribution

Electrical characteristics

2

		Tmax T4 ⁽¹²⁾				
Rated uninterrupted current	[A]	250/320				
Poles	[No.]	3/4				
Rated service voltage, Ue	(AC) 50-60 Hz	[V]	690			
	(DC)	[V]	750			
Rated impulse withstand voltage, Uimp	[kV]	8				
Rated insulation voltage, Ui	[V]	1000				
Test voltage at industrial frequency for 1 min.	[V]	3500				
Rated ultimate short-circuit breaking capacity, Icu		N	S	H	L	V
(AC) 50-60 Hz 220/230 V	[kA]	70	85	100	200	200
(AC) 50-60 Hz 380/400/415 V	[kA]	36	50	70	120	200
(AC) 50-60 Hz 440 V	[kA]	30	40	65	100	180
(AC) 50-60 Hz 500 V	[kA]	25	30	50	85	150
(AC) 50-60 Hz 690 V	[kA]	20	25	40	70	80
(DC) 250 V - 2 poles in series	[kA]	36	50	70	100	150
(DC) 250 V - 3 poles in series	[kA]	–	–	–	–	–
(DC) 500 V - 2 poles in series	[kA]	25	36	50	70	100
(DC) 500 V - 3 poles in series	[kA]	–	–	–	–	–
(DC) 750 V - 3 poles in series	[kA]	16	25	36	50	70
Rated service short-circuit breaking capacity, Ics						
(AC) 50-60 Hz 220/230 V	[%Icu]	100%	100%	100%	100%	100%
(AC) 50-60 Hz 380/400/415 V	[%Icu]	100%	100%	100%	100%	100%
(AC) 50-60 Hz 440 V	[%Icu]	100%	100%	100%	100%	100%
(AC) 50-60 Hz 500 V	[%Icu]	100%	100%	100%	100%	100%
(AC) 50-60 Hz 690 V	[%Icu]	100%	100%	100%	100%	100%
Rated short-circuit making capacity, Icm						
(AC) 50-60 Hz 220/230 V	[kA]	154	187	220	440	660
(AC) 50-60 Hz 380/400/415 V	[kA]	75.6	105	154	264	440
(AC) 50-60 Hz 440 V	[kA]	63	84	143	220	396
(AC) 50-60 Hz 500 V	[kA]	52.5	63	105	187	330
(AC) 50-60 Hz 690 V	[kA]	40	52.5	84	154	176
Opening time (415 V)	[ms]	5	5	5	5	5
Utilisation category (IEC 60947-2)		A				
Reference Standard		IEC 60947-2				
Isolation behaviour		■				
Trip units:						
thermomagnetic						
T fixed, M fixed	TMF	–				
T adjustable, M fixed	TMD	■ (up to 50 A)				
T adjustable, M adjustable (5...10 x In)	TMA	■ (up to 250 A)				
T adjustable, M fixed (3 x In)	TMG	–				
T adjustable, M adjustable (2.5...5 x In)	TMG	–				
magnetic only	MA	■				
electronic	PR221DS	■				
	PR221GP/PR221MP	–				
	PR222DS	■				
	PR223DS	■				
	PR231/P	–				
	PR232/P	–				
	PR331/P	–				
	PR332/P	–				
Interchangeability		■				
Versions		F-P-W				
Terminals	fixed	F-FC Cu-FC CuAl-EF-ES-R-MC				
	plug-in	EF-ES-HR-VR-FC Cu-FC CuAl				
	withdrawable	EF-ES-HR-VR-FC Cu-FC CuAl				
Fixing on DIN rail		–				
Mechanical life	[No. operations]	20000				
	[No. Hourly operations]	240				
Electrical life @ 415 V AC	[No. operations]	8000 (250 A) - 6000 (320 A)				
	[No. Hourly operations]	120				
Basic dimensions - fixed version	3 poles	W [mm]	105			
	4 poles	W [mm]	140			
		D [mm]	103.5			
		H [mm]	205			
Weight	fixed	3/4 poles	[kg]	2.35/3.05		
	plug-in	3/4 poles	[kg]	3.6/4.65		
	withdrawable	3/4 poles	[kg]	3.85/4.9		

TERMINAL CAPTION

F = Front
EF = Front extended
ES = Front extended spread

FC Cu = Front for copper cables
FC CuAl = Front for copper-aluminium cables
R = Rear orientated
HR = Rear flat horizontal

VR = Rear flat vertical
HR/VR = Rear flat orientated
MC = Multicable
F = Fixed circuit-breakers

P = Plug-in circuit-breakers
W = Withdrawable circuit-breakers

Tmax T5					Tmax T6 ⁽⁹⁾					Tmax T7				
400/630					630/800/1000					800/1000/1250/1600				
3/4					3/4					3/4				
690					690					690				
750					750					-				
8					8					8				
1000					1000					1000				
3500					3500					3500				
N	S	H	L	V	N	S	H	L	V	S	H	L	V ⁽⁸⁾	X ⁽¹⁰⁾
70	85	100	200	200	70	85	100	200	200	85	100	200	200	170
36	50	70	120	200	36	50	70	100	150	50	70	120	150	170
30	40	65	100	180	30	45	50	80	120	50	65	100	130	170
25	30	50	85	150	25	35	50	65	85	40	50	85	100	170
20	25	40	70	80	20	22	25	30	40	30	42	50	60	75
36	50	70	100	150	36	50	70	100	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	36	50	70	100	20	35	50	65	70	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	25	36	50	70	16	20	36	50	50	-	-	-	-	-
100%	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%	100%	100%
100%	100%	100%	100%	100%	100%	100%	100%	75%	75% (120)	100%	100%	100%	100%	100%
100%	100%	100%	100%	100%	100%	100%	100%	75%	75% (100)	100%	100%	100%	100%	100%
100%	100%	100%	100% ⁽¹¹⁾	100% ⁽²⁾	100%	100%	100%	75%	75% (65)	100%	100%	75%	100%	100%
100%	100%	100% ⁽¹⁾	100% ⁽²⁾	100% ⁽²⁾	75%	75%	75%	75%	75%	100%	75%	75%	75%	100%
154	187	220	440	660	154	187	220	440	440	187	220	440	440	374
75.6	105	154	264	440	75.6	105	154	220	330	105	154	264	330	374
63	84	143	220	396	63	94.5	105	176	264	105	143	220	286	374
52.5	63	105	187	330	52.5	73.5	105	143	187	84	105	187	220	374
40	52.5	84	154	176	40	46	52.5	63	84	63	88.2	105	132	165
6	6	6	6	6	10	9	8	7	7	15	10	8	8	8
B (400 A) ⁽³⁾ - A (630 A)					B (630A - 800A) ⁽⁵⁾ - A (1000A)					B ⁽⁷⁾ - A (T7X)				
IEC 60947-2					IEC 60947-2					IEC 60947-2				
■					■					■				
-					-					-				
-					-					-				
■ (up to 500 A)					■ (up to 800 A) ⁽⁴⁾					-				
-					-					-				
■ (up to 500 A)					-					-				
-					-					-				
■					■					-				
-					-					-				
■					■					-				
-					-					-				
■					■					■ ⁽¹¹⁾				
-					-					■ ⁽¹¹⁾				
-					-					■				
-					-					■				
■					■					■				
-					-					-				
F-P-W					F-W ⁽⁴⁾					F-W ⁽¹¹⁾				
F-FC CuAl-EF-ES-R-RC					F-FC CuAl-EF-ES-R-RC					F-EF-ES ⁽¹¹⁾ -FC CuAl-HR/VR				
EF-ES-HR-VR-FC Cu-FC CuAl					-					-				
EF-ES-HR-VR-FC Cu-FC CuAl					EF-HR-VR					EF-HR/VR-RS-ES				
-					-					-				
20000					20000					10000				
120					120					60				
7000 (400 A) - 5000 (630 A)					7000 (630A) - 5000 (800A) - 4000 (1000A)					2000 (S, H, L versions) / 3000 (V, X versions)				
60					60					60				
140					210					210				
186					280					280				
103.5					103.5					154 (manual) / 178 (motorizable)				
205					268					268				
3.25/4.15					9.5/12					9.7/12.5 (manual) - 11/14 (motorizable)				
5.15/6.65					-					-				
5.4/6.9					12.1/15.1					29.7/39.6 (manual) - 32/42.6 (motorizable)				

⁽¹⁾ 75% for T5 630
⁽²⁾ 50% for T5 630
⁽³⁾ Icw = 5 kA
⁽⁴⁾ W version is not available on T6 1000 A
⁽⁵⁾ Icw = 7.6 kA (630 A) - 10 kA (800 A)
⁽⁶⁾ Only for T7 800/1000/1250 A
⁽⁷⁾ Icw = 20 kA (S,H,L versions) - 15 kA (V version)
⁽⁸⁾ For availability, please ask ABB SACE
⁽⁹⁾ T6V only for T6 630-800A
⁽¹⁰⁾ T7X only for T7 800A
⁽¹¹⁾ not available on T7X
⁽¹²⁾ T4 250 only L and V version

Notes: In the plug-in version of T5 630 and in the withdrawable version of T5 630 the maximum rated current available is derated by 10% at 40 °C