

# Circuit-breakers for power distribution

## Electrical characteristics

2

			Tmax T1 1P	Tmax T1				Tmax T2			
Rated uninterrupted current	[A]		160	160				160			
Poles	[No.]		1	3/4				3/4			
Rated service voltage, <b>Ue</b>	(AC) 50-60 Hz	[V]	240	690				690			
	(DC)	[V]	125	500				500			
Rated impulse withstand voltage, <b>Uimp</b>	[kV]		8	8				8			
Rated insulation voltage, <b>Ui</b>	[V]		500	800				800			
Test voltage at industrial frequency for 1 min.	[V]		3000	3000				3000			
Rated ultimate short-circuit breaking capacity, <b>Icu</b>			<b>B</b>	<b>B</b>	<b>C</b>	<b>N</b>	<b>N</b>	<b>S</b>	<b>H</b>	<b>L</b>	
(AC) 50-60 Hz 220/230 V	[kA]		25*	25	40	50	65	85	100	120	
(AC) 50-60 Hz 380/400/415 V	[kA]		-	16	25	36	36	50	70	85	
(AC) 50-60 Hz 440 V	[kA]		-	10	15	22	30	45	55	75	
(AC) 50-60 Hz 500 V	[kA]		-	8	10	15	25	30	36	50	
(AC) 50-60 Hz 690 V	[kA]		-	3	4	6	6	7	8	10	
(DC) 250 V - 2 poles in series	[kA]		25 (at 125 V)	16	25	36	36	50	70	85	
(DC) 250 V - 3 poles in series	[kA]		-	20	30	40	40	55	85	100	
(DC) 500 V - 2 poles in series	[kA]		-	-	-	-	-	-	-	-	
(DC) 500 V - 3 poles in series	[kA]		-	16	25	36	36	50	70	85	
(DC) 750 V - 3 poles in series	[kA]		-	-	-	-	-	-	-	-	
Rated service short-circuit breaking capacity, <b>Ics</b>											
(AC) 50-60 Hz 220/230 V	[%Icu]		75%	100%	75%	75%	100%	100%	100%	100%	
(AC) 50-60 Hz 380/400/415 V	[%Icu]		-	100%	100%	75%	100%	100%	100%	75% (70 kA)	
(AC) 50-60 Hz 440 V	[%Icu]		-	100%	75%	50%	100%	100%	100%	75%	
(AC) 50-60 Hz 500 V	[%Icu]		-	100%	75%	50%	100%	100%	100%	75%	
(AC) 50-60 Hz 690 V	[%Icu]		-	100%	75%	50%	100%	100%	100%	75%	
Rated short-circuit making capacity, <b>Icm</b>											
(AC) 50-60 Hz 220/230 V	[kA]		52.5	52.5	84	105	143	187	220	264	
(AC) 50-60 Hz 380/400/415 V	[kA]		-	32	52.5	75.6	75.6	105	154	187	
(AC) 50-60 Hz 440 V	[kA]		-	17	30	46.2	63	94.5	121	165	
(AC) 50-60 Hz 500 V	[kA]		-	13.6	17	30	52.5	63	75.6	105	
(AC) 50-60 Hz 690 V	[kA]		-	4.3	5.9	9.2	9.2	11.9	13.6	17	
Opening time (415 V)	[ms]		7	7	6	5	3	3	3	3	
Utilisation category (IEC 60947-2)			A	A				A			
Reference Standard			IEC 60947-2	IEC 60947-2				IEC 60947-2			
Isolation behaviour			■	■				■			
Trip units:											
thermomagnetic											
T fixed, M fixed	TMF		■	-				-			
T adjustable, M fixed	TMD		-	■				■			
T adjustable, M adjustable (5...10 x In)	TMA		-	-				-			
T adjustable, M fixed (3 x In)	TMG		-	-				■ <sup>(B)</sup>			
T adjustable, M adjustable (2.5...5 x In)	TMG		-	-				-			
magnetic only	MA		-	-				■ (MF up to In 12.5 A)			
electronic	PR221DS		-	-				■			
	PR221GP/PR221MP		-	-				■			
	PR222DS		-	-				-			
	PR223DS		-	-				-			
	PR231/P		-	-				-			
	PR232/P		-	-				-			
	PR331/P		-	-				-			
	PR332/P		-	-				-			
Interchangeability			-	-				-			
Versions			F	F				F-P			
Terminals	fixed		FC Cu	FC Cu-EF-FC CuAl-HR				F-FC Cu-FC CuAl-EF-ES-R			
	plug-in		-	-				F-FC Cu-FC CuAl-EF-ES-R			
	withdrawable		-	-				-			
Fixing on DIN rail			-	DIN EN 50022				DIN EN 50022			
Mechanical life	[No. operations]		25000	25000				25000			
	[No. Hourly operations]		240	240				240			
Electrical life @ 415 V AC	[No. operations]		8000	8000				8000			
	[No. Hourly operations]		120	120				120			
Basic dimensions - fixed version											
	3 poles	W [mm]	25.4 (1 pole)	76				90			
	4 poles	W [mm]	-	102				120			
		D [mm]	70	70				70			
		H [mm]	130	130				130			
Weight											
	fixed	3/4 poles	[kg]	0.4 (1 pole)				0.9/1.2			
	plug-in	3/4 poles	[kg]	-				1.1/1.5			
	withdrawable	3/4 poles	[kg]	-				1.5/1.9			

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  
<sup>(1)</sup> The breaking capacity for settings  
In = 16 A and In = 20 A is 16 kA



**T5 400 – Fixed (F) – 3 Poles - Front terminals for copper cables (FC Cu)**

Electronic trip unit	In	I <sub>3</sub>	Icu (1000 V AC) Icu (1150 V AC)	1SDA.....R1	
				L (12 kA)	V (20 kA - 12 kA)
PR221DS-LS/I	320			063477	063485
PR221DS-I	320			063478	063486
PR222DS/P-LSI	320			063479	063487
PR222DS/P-LSIG	320			063480	063488
PR221DS-LS/I	400			054535	054539
PR221DS-I	400			054536	054540
PR222DS/P-LSI	400			054537	054541
PR222DS/P-LSIG	400			054538	054542
PR222MP	320			063456	
PR222MP	400			063457	

**T5 400 – Fixed (F) – 4 Poles - Front terminals for copper cables (FC Cu)**

Electronic trip unit	In	I <sub>3</sub>	Icu (1000 V AC) Icu (1150 V AC)	1SDA.....R1	
				L (12 kA)	V (20 kA - 12 kA)
PR221DS-LS/I	320			063481	063489
PR221DS-I	320			063482	063490
PR222DS/P-LSI	320			063483	063491
PR222DS/P-LSIG	320			063484	063492
PR221DS-LS/I	400			063440	063444
PR221DS-I	400			063441	063445
PR222DS/P-LSI	400			063442	063446
PR222DS/P-LSIG	400			063443	063447

**T5 400 – Fixed (F) – 3 Poles - Front terminals for copper cables (FC Cu)**

Thermomagnetic trip unit - TMA	In	I <sub>3</sub>	Icu (1000 V AC) Icu (1150 V AC)	1SDA.....R1	
				V (20 kA - 12 kA)	
	320	1600...3200		063437	
	400	2000...4000		063438	

**T5 400 – Fixed (F) – 4 Poles - Front terminals for copper cables (FC Cu)**

Thermomagnetic trip unit - TMA	In	I <sub>3</sub>	Icu (1000 V AC) Icu (1150 V AC) Icu (1000 V DC)	1SDA.....R1	
				V (20 kA - 12 kA - 40 kA)	
	320	1600...3200		054531	
	400	2000...4000		054532	