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3SM8L, MCCBs with earth leakage protection

Independent power supply with build-in power source, directly draws power from the incoming end to avoid the risk of protection function failure caused by supply failure.

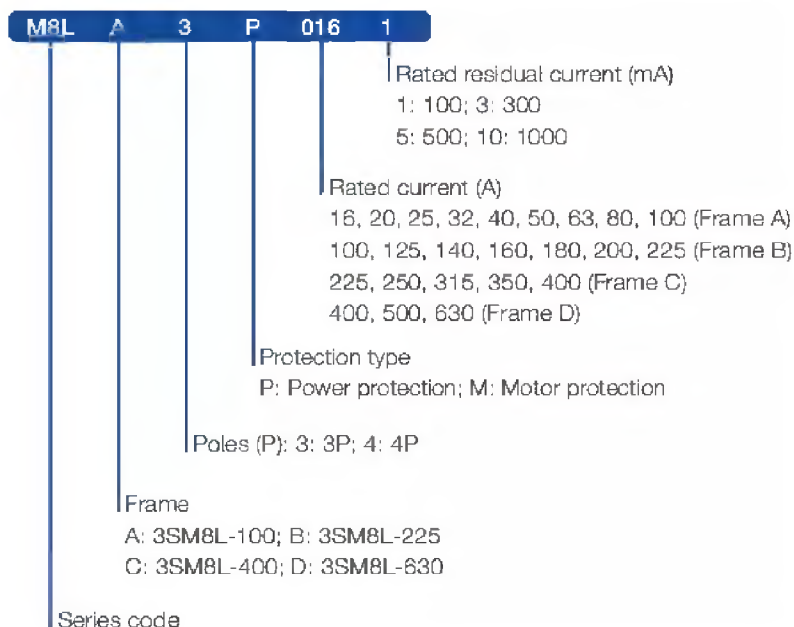
- Overload protection
- Short circuit protection
- Isolation
- Controlling
- Used in residential building, non-residential building, industry, energy and infrastructure



Functions

- Protection of plant and equipment against overload or damage by ground faults (ground-fault protection)
- Protection against fire hazard caused by insulation faults
- Switching and protection devices for motors, transformers and capacitors
- Disconnecter units with features for stopping and switching off in an emergency in conjunction with lockable rotary operating mechanisms and terminal covers

Instruction of type code



- Here is code of N-pole type for 4 pole circuit breaker:
 A: N-pole fixed without over-current release unit, it has been connected all along, and does not act with other three poles to turn on or off
 B: N-pole fixed without over-current release unit, it acts with other three poles

Technical Specifications

Frame type	A	B	C	D
Standards	IEC 60947-2 IEC 60947-4-1	IEC 60947-2 IEC 60947-4-1	IEC 60947-2 IEC 60947-4-1	IEC 60947-2 IEC 60947-4-1
Number of poles	3, 4	3, 4	3, 4	3, 4
Frame Current I _{nm}	A 100	225	400	630
Rated current I _n	A 16, 20, 25, 32, 40 50, 63, 80, 100	100, 125, 140, 160 180, 200, 225	225, 250, 315 350, 400	400, 500, 630
Rated residual currents I _{Δn}	mA 100, 300, 500, 1000	100, 300, 500, 1000	100, 300, 500	100, 300, 500, 100
Rated insulating voltage U _i	V 800	800	800	800
Rated operating voltage, U _e	V 400	400	400	400
Rated frequency	Hz 50/60	50/60	50/60	50/60
Rated impulsive withstand voltage, U _{imp}	kV 8	8	8	8
Rated ultimate short-circuit breaking capacity, I _{cu} (AC) 50-60 Hz 400 V O-CO	kA 50	50	65	65
Rated operating short-circuit breaking capacity, I _{cs} (AC) 50-60 Hz 400 V O-CO-CO	kA 35	35	42	42
Mechanical life	times 8500	7000	4000	4000
Electrical life	times 1500	1000	1000	1000
Flashover distance	mm ≤50	≤50	≤100	≤100
Utilization category (IEC60947-2)	A	A	A	A
Ambient temperature	-5 to +40 °C, max. 95% humidity			
Storage temperature	-40 to +75 °C			
Altitude	Max 2000			

Tripping characteristic

- For power distribution

Test No.	Test current	I/I _n	Conventional time	Start status	Ambient temperature
1	Conventional non-action time	1.05	1 h (I _n ≤ 63 A) 2 h (I _n > 63 A)	Cold status	+ 40 °C
2	Conventional action time	1.30	1 h (I _n ≤ 63 A) 2 h (I _n > 63 A)	Right after test No.1	+ 40 °C

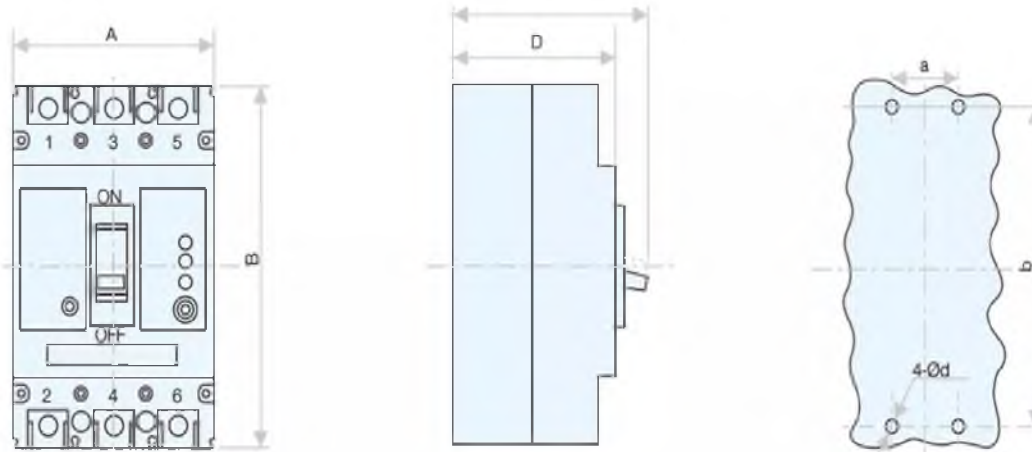
- For power distribution

Test No.	Setting current	Conventional time	Start status	Ambient temperature
1	1.05 I _n	I _{nm} = 100 A > 2 h no action I _{nm} = 225 A/400 A > 2 h no action I _{nm} = 630 A > 2 h no action	Cold status	+40 °C
2	1.2 I _n	I _{nm} = 100 A ≤ 2 h action I _{nm} = 225 A/400 A ≤ 2 h action I _{nm} = 630 A ≤ 2 h action	Right after test No.1	+40 °C
3	1.5 I _n	I _{nm} = 100 A ≤ 4 min action I _{nm} = 225 A ≤ 4 min action I _{nm} = 400/630 A ≤ 3 min action	Heat status	+40 °C
4	7.2 I _n	I _{nm} = 100 A ≥ 1 s action I _{nm} = 225 A 4 s < T ≤ 10 s action I _{nm} = 400/630 A 6 s < T ≤ 20 s action	Cold status	+40 °C

Action time of residual current protection

Residual current		1 I _{Δn}	2 I _{Δn}	5 I _{Δn}	10 I _{Δn}
Non time-delay type	Max. breaking time (s)	0.2	0.1	0.04	0.04
Time-delay type	Max. breaking time (s)	0.5/1.15/2.15	0.35/1/2	0.25/0.9/1.9	0.25/0.9/1.9
	Ultimate non-driven time Δt (s)	-	0.1/0.5/1	-	-

Outline and installation dimensions



Type	Number of poles	Outline dimensions (mm)				Installation dimensions (mm)		
		A	B	C	D	a	b	d
Frame A	3	92	150	110	92	30	129	4.5
3SM8L-100	4	122	150	110	92	60	129	4.5
Frame B	3	107	165	110	90	35	126	4.5
3SM8L-225	4	142	165	110	90	70	126	4.5
Frame C	3	150	257	146.5	106.5	44	194	7
3SM8L-400	4	198	257	146.5	106.5	88	194	7
Frame D	3	210	280	155	115.5	70	243	7
3SM8L-630	4	280	280	155	115.5	70	243	7

For power distribution

	Rated current In (A)	3-pole		4-pole		
		Type code	Order code	Type code	Order code	
3SM8L-100	30 - 100 - 300 mA adjustable					
	16A	M8LA 3P016/1	25214	M8LA 4BP016/1	10412	
	20A	M8LA 3P020/1	25215	M8LA 4BP020/1	10413	
	25A	M8LA 3P025/1	25216	M8LA 4BP025/1	10414	
	32A	M8LA 3P032/1	25217	M8LA 4BP032/1	10415	
	40A	M8LA 3P040/1	25218	M8LA 4BP040/1	10416	
	50A	M8LA 3P050/1	25219	M8LA 4BP050/1	10417	
	63A	M8LA 3P063/1	25220	M8LA 4BP063/1	10418	
	80A	M8LA 3P080/1	25221	M8LA 4BP080/1	10419	
	100A	M8LA 3P100/1	25222	M8LA 4BP100/1	10420	
	100 - 300 - 500 mA adjustable					
	16A	M8LA 3P016/3	25223	M8LA 4BP016/3	10421	
	20A	M8LA 3P020/3	25224	M8LA 4BP020/3	10422	
	25A	M8LA 3P025/3	25225	M8LA 4BP025/3	10423	
	32A	M8LA 3P032/3	25226	M8LA 4BP032/3	10424	
	40A	M8LA 3P040/3	25227	M8LA 4BP040/3	10425	
	50A	M8LA 3P050/3	25228	M8LA 4BP050/3	10426	
	63A	M8LA 3P063/3	25229	M8LA 4BP063/3	10427	
	80A	M8LA 3P080/3	25230	M8LA 4BP080/3	10428	
	100A	M8LA 3P100/3	25231	M8LA 4BP100/3	10429	
	3SM8L-225	30 - 100 - 300 mA adjustable				
		100A	M8LB 3P100/1	25232	M8LB 4BP100/1	10430
		125A	M8LB 3P125/1	25233	M8LB 4BP125/1	10431
		140A	M8LB 3P140/1	25234	M8LB 4BP140/1	10432
		160A	M8LB 3P160/1	25235	M8LB 4BP160/1	10433
		180A	M8LB 3P180/1	25236	M8LB 4BP180/1	10434
		200A	M8LB 3P200/1	25237	M8LB 4BP200/1	10435
225A		M8LB 3P225/1	25238	M8LB 4BP225/1	10436	
100 - 300 - 500 mA adjustable						
100A		M8LB 3P100/3	25239	M8LB 4BP100/3	10437	
125A		M8LB 3P125/3	25240	M8LB 4BP125/3	10438	
140A		M8LB 3P140/3	25241	M8LB 4BP140/3	10439	
160A		M8LB 3P160/3	25242	M8LB 4BP160/3	10440	
180A		M8LB 3P180/3	25243	M8LB 4BP180/3	10441	
200A		M8LB 3P200/3	25244	M8LB 4BP200/3	10442	
225A	M8LB 3P225/3	25245	M8LB 4BP225/3	10443		
3SM8L-400	100 - 300 - 500 mA adjustable					
	200A	M8LC 3P200/3	25246	M8LC 4BP200/3	10444	
	225A	M8LC 3P225/3	25247	M8LC 4BP225/3	10445	
	250A	M8LC 3P250/3	25248	M8LC 4BP250/3	10446	
	315A	M8LC 3P315/3	25249	M8LC 4BP315/3	10447	
	350A	M8LC 3P350/3	25250	M8LC 4BP350/3	10448	
	400A	M8LC 3P400/3	25251	M8LC 4BP400/3	10449	
	300 - 500 - 1000 mA adjustable					
	200A	M8LC 3P200/5	25252	M8LC 4BP200/5	10450	
	225A	M8LC 3P225/5	25253	M8LC 4BP225/5	10451	
	250A	M8LC 3P250/5	25254	M8LC 4BP250/5	10452	
	315A	M8LC 3P315/5	25255	M8LC 4BP315/5	10453	
	350A	M8LC 3P350/5	25256	M8LC 4BP350/5	10454	
	400A	M8LC 3P400/5	25257	M8LC 4BP400/5	10455	
	3SM8L-630	100 - 300 - 500 mA adjustable				
400A		M8LD 3P400/3	25258	M8LD 4BP400/3	10456	
500A		M8LD 3P500/3	25259	M8LD 4BP500/3	10457	
630A		M8LD 3P630/3	25260	M8LD 4BP630/3	10458	
300 - 500 - 1000 mA adjustable						
400A		M8LD 3P400/5	25261	M8LD 4BP400/5	10459	
500A		M8LD 3P500/5	25262	M8LD 4BP500/5	10460	
630A	M8LD 3P630/5	25263	M8LD 4BP630/5	10461		

For motor protection

	Rated current In (A)	3-pole		4-pole	
		Type code	Order code	Type code	Order code
3SM8L-100	30 - 100 - 300 mA adjustable				
	16A	M8LA 3M016/1	25264	M8LA 4BM016/1	10462
	20A	M8LA 3M020/1	25265	M8LA 4BM020/1	10463
	25A	M8LA 3M025/1	25266	M8LA 4BM025/1	10464
	32A	M8LA 3M032/1	25267	M8LA 4BM032/1	10465
	40A	M8LA 3M040/1	25268	M8LA 4BM040/1	31386
	50A	M8LA 3M050/1	25269	M8LA 4BM050/1	31387
	63A	M8LA 3M063/1	25270	M8LA 4BM063/1	31388
	80A	M8LA 3M080/1	25271	M8LA 4BM080/1	31389
	100A	M8LA 3M100/1	25272	M8LA 4BM100/1	31390
	100 - 300 - 500 mA adjustable				
	16A	M8LA 3M016/3	25273	M8LA 4BM016/3	31391
	20A	M8LA 3M020/3	25274	M8LA 4BM020/3	31392
	25A	M8LA 3M025/3	25275	M8LA 4BM025/3	31393
	32A	M8LA 3M032/3	25276	M8LA 4BM032/3	31394
	40A	M8LA 3M040/3	25277	M8LA 4BM040/3	31395
	50A	M8LA 3M050/3	25278	M8LA 4BM050/3	31396
	63A	M8LA 3M063/3	25279	M8LA 4BM063/3	31397
	80A	M8LA 3M080/3	25280	M8LA 4BM080/3	31398
	100A	M8LA 3M100/3	25281	M8LA 4BM100/3	31399
3SM8L-225	30 - 100 - 300 mA adjustable				
	100A	M8LB 3M100/1	25282	M8LB 4BM100/1	31400
	125A	M8LB 3M125/1	25283	M8LB 4BM125/1	31401
	140A	M8LB 3M140/1	25284	M8LB 4BM140/1	31402
	160A	M8LB 3M160/1	25285	M8LB 4BM160/1	31403
	180A	M8LB 3M180/1	21538	M8LB 4BM180/1	31404
	200A	M8LB 3M200/1	21539	M8LB 4BM200/1	31405
	225A	M8LB 3M225/1	21540	M8LB 4BM225/1	31406
	100 - 300 - 500 mA adjustable				
	100A	M8LB 3M100/3	21541	M8LB 4BM100/3	31407
	125A	M8LB 3M125/3	21542	M8LB 4BM125/3	31408
	140A	M8LB 3M140/3	21543	M8LB 4BM140/3	31409
	160A	M8LB 3M160/3	21544	M8LB 4BM160/3	31410
	180A	M8LB 3M180/3	21545	M8LB 4BM180/3	31411
	200A	M8LB 3M200/3	21546	M8LB 4BM200/3	31412
	225A	M8LB 3M225/3	21547	M8LB 4BM225/3	31413
3SM8L-400	100 - 300 - 500 mA adjustable				
	200A	M8LC 3M200/3	21548	M8LC 4BM200/3	31414
	225A	M8LC 3M225/3	21549	M8LC 4BM225/3	31415
	250A	M8LC 3M250/3	10396	M8LC 4BM250/3	31416
	315A	M8LC 3M315/3	10397	M8LC 4BM315/3	31417
	350A	M8LC 3M350/3	10398	M8LC 4BM350/3	31418
	400A	M8LC 3M400/3	10399	M8LC 4BM400/3	31419
	300 - 500 - 1000 mA adjustable				
	200A	M8LC 3M200/5	10400	M8LC 4BM200/5	31420
	225A	M8LC 3M225/5	10401	M8LC 4BM225/5	31421
	250A	M8LC 3M250/5	10402	M8LC 4BM250/5	31422
	315A	M8LC 3M315/5	10403	M8LC 4BM315/5	10387
	350A	M8LC 3M350/5	10404	M8LC 4BM350/5	10388
	400A	M8LC 3M400/5	10405	M8LC 4BM400/5	10389
3SM8L-630	100 - 300 - 500 mA adjustable				
	400A	M8LD 3M400/3	10406	M8LD 4BM400/3	10390
	500A	M8LD 3M500/3	10407	M8LD 4BM500/3	10391
	630A	M8LD 3M630/3	10408	M8LD 4BM630/3	10392
	300 - 500 - 1000 mA adjustable				
	400A	M8LD 3M400/5	10409	M8LD 4BM400/5	10393
	500A	M8LD 3M500/5	10410	M8LD 4BM500/5	10394
	630A	M8LD 3M630/5	10411	M8LD 4BM630/5	10395

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