

# Moulded Case Circuit Breakers with Earth Leakage Protection

## Series QM2L

Quality & Service creates value



### Applications and 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

**M2L A 3 P 016 / 1**

#### Rated residual current(mA)

1: 100; 3: 300  
5: 500; 10: 1000

#### Rated current(A)

16, 20, 25, 32, 40, 50, 63, 80, 100 (Frame A)  
100, 125, 140, 160, 180, 200, 225 (Frame B)  
225, 250, 315, 350, 400 (Frame C)  
400, 500, 630 (Frame D)

#### Protection type

P: Power protection; M: Motor protection

**Poles(P):** 3: 3P; 4: 4P

#### Frame

A:QM2L-100;B:QM2L-225  
C:QM2L-400;D:QM2L-630

### Series 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	IEC60947-2 IEC60947-4-1	IEC60947-2 IEC60947-4-1	IEC60947-2 IEC60947-4-1	IEC60947-2 IEC60947-4-1
Approval	CE	CE	CE	CE
Number of poles	3,4	3,4	3,4	3,4
Frame Current Inm (A)	100	225	400	630
Rated current In(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 IΔn (mA)	100,300,500,1000	100,300,500,1000	100,300,500	100,300,500,1000
Rated insulating voltage Ui (V)	800	800	800	800
Rated operating voltage, Ue (V)	400	400	400	400
Rated frequency (Hz)	50/60	50/60	50/60	50/60
Rated impulsive withstand voltage, Uimp(kV)	8	8	8	8
Rated ultimate short-circuit breaking capacity, Icu (AC) 50-60 Hz 400V O-CO (kA)	35	35	50	80
Rated operating short-circuit breaking capacity, Ics (AC) 50-60 Hz 400V O-CO-CO (kA)	22	25	35	35
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/In	Conventional time	Start status	Ambient temperature
1	Conventional non-action time	1.05	1h ( $I_n \leq 63A$ )	Cold status	+40° C
			2h ( $I_n > 63A$ )		
2	Conventional action time	1.30	1h ( $I_n \leq 63A$ )	Right after test No.1	+40° C
			2h ( $I_n > 63A$ )		

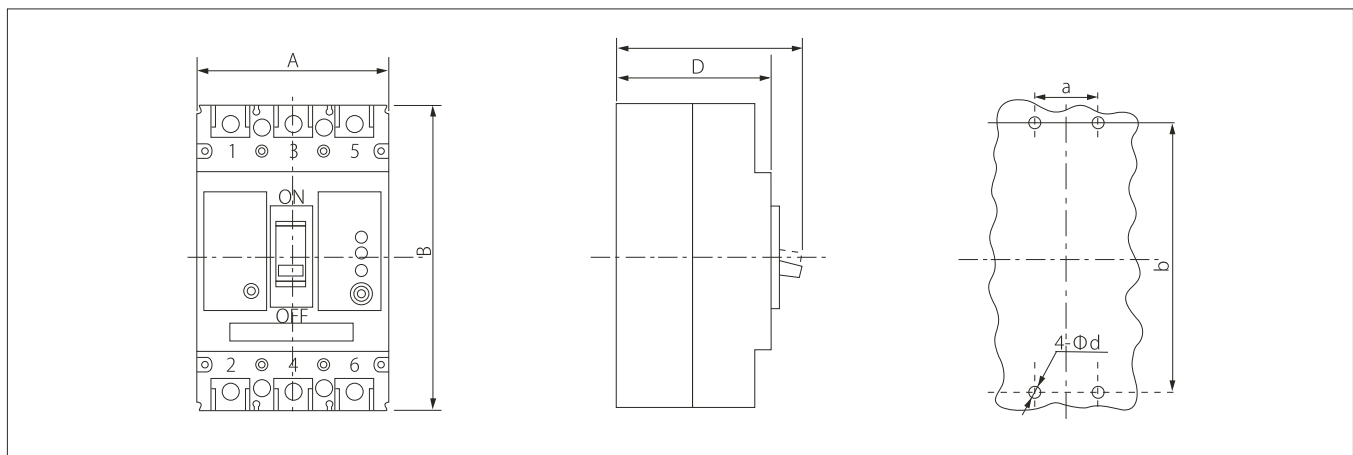
- For motor protection

Test No.	Setting current	Conventional time	Start status	Ambient temperature
1	1.05I <sub>n</sub>	I <sub>nm</sub> =100A >2h no action	Cold status	+40° C
		I <sub>nm</sub> =225A/400A >2h no action		
		I <sub>nm</sub> =630A >2h no action		
2	1.2I <sub>n</sub>	I <sub>nm</sub> =100A ≤2h action	Right after test No.1	+40° C
		I <sub>nm</sub> =225A/400A ≤2h action		
		I <sub>nm</sub> =630A ≤2h action		
3	1.5I <sub>n</sub>	I <sub>nm</sub> =100A ≤4min action	Heat status	+40° C
		I <sub>nm</sub> =225A/400A ≤4min action		
		I <sub>nm</sub> =630A ≤8min action		
4	7.2I <sub>n</sub>	I <sub>nm</sub> =100A ≥1s action	Cold status	+40° C
		I <sub>nm</sub> =225A/400A 4s<T≤10s action		
		I <sub>nm</sub> =630A 6s<T≤20s action		

### Action time of residual current protection

Residual current		1I <sub>Δn</sub>	2I <sub>Δn</sub>	5I <sub>Δn</sub>	10I <sub>Δn</sub>
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 t(s)	-	0.1/0.5/1	-	-

### Outline and installation dimension.



Type	Number of poles	Outline dimensions(mm)				Installation dimensions(mm)		
		A	B	C	D	a	b	d
A:QM2L-100	3	92	150	110	92	30	129	4.5
	4	122	150	110	92	60	129	4.5
B:QM2L-225	3	107	165	110	90	35	126	4.5
	4	142	165	110	90	70	126	4.5
C:QM2L-400	3	150	257	146.5	106.5	44	194	7
	4	198	257	146.5	106.5	88	194	7
D:QM2L-630	3	210	280	155	115.5	70	243	7
	4	280	280	155	115.5	70	243	7

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### Selection and ordering data

Rated current In(A)	Number of Poles	100mA		300mA		500mA	
		Type code	Order code	Type code	Order code	Type code	Order code
For 4 poles, please complete the code by adding N-pole code.							
<b>Frame A</b>							
<b>QM2L-100</b>							
For power distribution							
16	3	QM2LA 3P016/1	25214	QM2LA 3P016/3	25223	QM2LA 3P016/5	25232
	4	QM2LA 4*P016/1	10331*	QM2LA 4*P016/3	10340*	QM2LA 4*P016/5	10349*
20	3	QM2LA 3P020/1	25215	QM2LA 3P020/3	25224	QM2LA 3P020/5	25233
	4	QM2LA 4*P020/1	10332*	QM2LA 4*P020/3	10341*	QM2LA 4*P020/5	10350*
25	3	QM2LA 3P025/1	25216	QM2LA 3P025/3	25225	QM2LA 3P025/5	25234
	4	QM2LA 4*P025/1	10333*	QM2LA 4*P025/3	10342*	QM2LA 4*P025/5	10351*
32	3	QM2LA 3P032/1	25217	QM2LA 3P032/3	25226	QM2LA 3P032/5	25235
	4	QM2LA 4*P032/1	10334*	QM2LA 4*P032/3	10343*	QM2LA 4*P032/5	10352*
40	3	QM2LA 3P040/1	25218	QM2LA 3P040/3	25227	QM2LA 3P040/5	25236
	4	QM2LA 4*P040/1	10335*	QM2LA 4*P040/3	10344*	QM2LA 4*P040/5	10353*
50	3	QM2LA 3P050/1	25219	QM2LA 3P050/3	25228	QM2LA 3P050/5	25237
	4	QM2LA 4*P050/1	10336*	QM2LA 4*P050/3	10345*	QM2LA 4*P050/5	10354*
63	3	QM2LA 3P063/1	25220	QM2LA 3P063/3	25229	QM2LA 3P063/5	25238
	4	QM2LA 4*P063/1	10337*	QM2LA 4*P063/3	10346*	QM2LA 4*P063/5	10355*
80	3	QM2LA 3P080/1	25221	QM2LA 3P080/3	25230	QM2LA 3P080/5	25239
	4	QM2LA 4*P080/1	10338*	QM2LA 4*P080/3	10347*	QM2LA 4*P080/5	10356*
100	3	QM2LA 3P100/1	25222	QM2LA 3P100/3	25231	QM2LA 3P100/5	25240
	4	QM2LA 4*P100/1	10339*	QM2LA 4*P100/3	10348*	QM2LA 4*P100/5	10357*
For motor protection							
16	3	QM2LA 3M016/1	10268	QM2LA 3M016/3	10277	QM2LA 3M016/5	10286
	4	QM2LA 4*M016/1	10403*	QM2LA 4*M016/3	10412*	QM2LA 4*M016/5	10421*
20	3	QM2LA 3M020/1	10269	QM2LA 3M020/3	10278	QM2LA 3M020/5	10287
	4	QM2LA 4*M020/1	10404*	QM2LA 4*M020/3	10413*	QM2LA 4*M020/5	10422*
25	3	QM2LA 3M025/1	10270	QM2LA 3M025/3	10279	QM2LA 3M025/5	10288
	4	QM2LA 4*M025/1	10405*	QM2LA 4*M025/3	10414*	QM2LA 4*M025/5	10423*
32	3	QM2LA 3M032/1	10271	QM2LA 3M032/3	10280	QM2LA 3M032/5	10289
	4	QM2LA 4*M032/1	10406*	QM2LA 4*M032/3	10415*	QM2LA 4*M032/5	10424*
40	3	QM2LA 3M040/1	10272	QM2LA 3M040/3	10281	QM2LA 3M040/5	10290
	4	QM2LA 4*M040/1	10407*	QM2LA 4*M040/3	10416*	QM2LA 4*M040/5	10425*
50	3	QM2LA 3M050/1	10273	QM2LA 3M050/3	10282	QM2LA 3M050/5	10291
	4	QM2LA 4*M050/1	10408*	QM2LA 4*M050/3	10417*	QM2LA 4*M050/5	10426*
63	3	QM2LA 3M063/1	10274	QM2LA 3M063/3	10283	QM2LA 3M063/5	10292
	4	QM2LA 4*M063/1	10409*	QM2LA 4*M063/3	10418*	QM2LA 4*M063/5	10427*
80	3	QM2LA 3M080/1	10275	QM2LA 3M080/3	10284	QM2LA 3M080/5	10293
	4	QM2LA 4*M080/1	10410*	QM2LA 4*M080/3	10419*	QM2LA 4*M080/5	10428*
100	3	QM2LA 3M100/1	10276	QM2LA 3M100/3	10285	QM2LA 3M100/5	10294
	4	QM2LA 4*M100/1	10411*	QM2LA 4*M100/3	10420*	QM2LA 4*M100/5	10429*
<b>Frame B</b>							
<b>QM2L-225</b>							
For power distribution							
100	3	QM2LB 3P100/1	25241	QM2LB 3P100/3	25248	QM2LB 3P100/5	25255
	4	QM2LB 4*P100/1	10358*	QM2LB 4*P100/3	10365*	QM2LB 4*P100/5	10372*
125	3	QM2LB 3P125/1	25242	QM2LB 3P125/3	25249	QM2LB 3P125/5	25256
	4	QM2LB 4*P125/1	10359*	QM2LB 4*P125/3	10366*	QM2LB 4*P125/5	10373*
140	3	QM2LB 3P140/1	25243	QM2LB 3P140/3	25250	QM2LB 3P140/5	25257
	4	QM2LB 4*P140/1	10360*	QM2LB 4*P140/3	10367*	QM2LB 4*P140/5	10374*
160	3	QM2LB 3P160/1	25244	QM2LB 3P160/3	25251	QM2LB 3P160/5	25258
	4	QM2LB 4*P160/1	10361*	QM2LB 4*P160/3	10368*	QM2LB 4*P160/5	10375*
180	3	QM2LB 3P180/1	25245	QM2LB 3P180/3	25252	QM2LB 3P180/5	25259
	4	QM2LB 4*P180/1	10362*	QM2LB 4*P180/3	10369*	QM2LB 4*P180/5	10376*
200	3	QM2LB 3P200/1	25246	QM2LB 3P200/3	25253	QM2LB 3P200/5	25260
	4	QM2LB 4*P200/1	10363*	QM2LB 4*P200/3	10370*	QM2LB 4*P200/5	10377*
225	3	QM2LB 3P225/1	25247	QM2LB 3P225/3	25254	QM2LB 3P225/5	25261
	4	QM2LB 4*P225/1	10364*	QM2LB 4*P225/3	10371*	QM2LB 4*P225/5	10378*

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Rated current In(A)	Number of Poles	100mA		300mA		500mA		
		Type code	Order code	Type code	Order code	Type code	Order code	
<b>Frame B</b>		For 4 poles, please complete the code by adding N-pole code						
<b>QM2L-225</b>		<b>For motor protection</b>						
100	3	QM2LB 3M100/1	10295	QM2LB 3M100/3	10302	QM2LB 3M100/5	10309	
	4	QM2LB 4*M100/1	10430*	QM2LB 4*M100/3	10437*	QM2LB 4*M100/5	10444*	
125	3	QM2LB 3M125/1	10296	QM2LB 3M125/3	10303	QM2LB 3M125/5	10310	
	4	QM2LB 4*M125/1	10431*	QM2LB 4*M125/3	10438*	QM2LB 4*M125/5	10445*	
140	3	QM2LB 3M140/1	10297	QM2LB 3M140/3	10304	QM2LB 3M140/5	10311	
	4	QM2LB 4*M140/1	10432*	QM2LB 4*M140/3	10439*	QM2LB 4*M140/5	10446*	
160	3	QM2LB 3M160/1	10298	QM2LB 3M160/3	10305	QM2LB 3M160/5	10312	
	4	QM2LB 4*M160/1	10433*	QM2LB 4*M160/3	10440*	QM2LB 4*M160/5	10447*	
180	3	QM2LB 3M180/1	10299	QM2LB 3M180/3	10306	QM2LB 3M180/5	10313	
	4	QM2LB 4*M180/1	10434*	QM2LB 4*M180/3	10441*	QM2LB 4*M180/5	10448*	
200	3	QM2LB 3M200/1	10300	QM2LB 3M200/3	10307	QM2LB 3M200/5	10314	
	4	QM2LB 4*M200/1	10435*	QM2LB 4*M200/3	10442*	QM2LB 4*M200/5	10449*	
225	3	QM2LB 3M225/1	10301	QM2LB 3M225/3	10308	QM2LB 3M225/5	10315	
	4	QM2LB 4*M225/1	10436*	QM2LB 4*M225/3	10443*	QM2LB 4*M225/5	10450*	
<b>Frame C</b>		<b>For power distribution</b>						
<b>QM2L-400</b>	225	3	QM2LC 3P225/1	25262	QM2LC 3P225/3	25267	QM2LC 3P225/5	25272
		4	QM2LC 4*P225/1	10379*	QM2LC 4*P225/3	10384*	QM2LC 4*P225/5	10389*
250	3	QM2LC 3P250/1	25263	QM2LC 3P250/3	25268	QM2LC 3P250/5	25273	
	4	QM2LC 4*P250/1	10380*	QM2LC 4*P250/3	10385*	QM2LC 4*P250/5	10390*	
315	3	QM2LC 3P315/1	25264	QM2LC 3P315/3	25269	QM2LC 3P315/5	25274	
	4	QM2LC 4*P315/1	10381*	QM2LC 4*P315/3	10386*	QM2LC 4*P315/5	10391*	
350	3	QM2LC 3P350/1	25265	QM2LC 3P350/3	25270	QM2LC 3P350/5	25275	
	4	QM2LC 4*P350/1	10382*	QM2LC 4*P350/3	10387*	QM2LC 4*P350/5	10392*	
400	3	QM2LC 3P400/1	25266	QM2LC 3P400/3	25271	QM2LC 3P400/5	25276	
	4	QM2LC 4*P400/1	10383*	QM2LC 4*P400/3	10388*	QM2LC 4*P400/5	10393*	
		<b>For motor protection</b>						
225	3	QM2LC 3M225/1	10316	QM2LC 3M225/3	10321	QM2LC 3M225/5	10326	
	4	QM2LC 4*M225/1	10451*	QM2LC 4*M225/3	10456*	QM2LC 4*M225/5	10461*	
250	3	QM2LC 3M250/1	10317	QM2LC 3M250/3	10322	QM2LC 3M250/5	10327	
	4	QM2LC 4*M250/1	10452*	QM2LC 4*M250/3	10457*	QM2LC 4*M250/5	10462*	
315	3	QM2LC 3M315/1	10318	QM2LC 3M315/3	10323	QM2LC 3M315/5	10328	
	4	QM2LC 4*M315/1	10453*	QM2LC 4*M315/3	10458*	QM2LC 4*M315/5	10463*	
350	3	QM2LC 3M350/1	10319	QM2LC 3M350/3	10324	QM2LC 3M350/5	10329	
	4	QM2LC 4*M350/1	10454*	QM2LC 4*M350/3	10459*	QM2LC 4*M350/5	10464*	
400	3	QM2LC 3M400/1	10320	QM2LC 3M400/3	10325	QM2LC 3M400/5	10330	
	4	QM2LC 4*M400/1	10455*	QM2LC 4*M400/3	10460*	QM2LC 4*M400/5	10465*	
<b>Frame D</b>		<b>For power distribution</b>						
<b>QM2L-630</b>	400	3	QM2LD 3P400/3	25277	QM2LD 3P400/5	25280	QM2LD 3P400/10	25283
		4	QM2LD 4*P400/3	10394*	QM2LD 4*P400/5	10397*	QM2LD 4*P400/10	10400*
500	3	QM2LD 3P500/3	25278	QM2LD 3P500/5	25281	QM2LD 3P500/10	25284	
	4	QM2LD 4*P500/3	10395*	QM2LD 4*P500/5	10398*	QM2LD 4*P500/10	10401*	
630	3	QM2LD 3P630/3	25279	QM2LD 3P630/5	25282	QM2LD 3P630/10	25285	
	4	QM2LD 4*P630/3	10396*	QM2LD 4*P630/5	10399*	QM2LD 4*P630/10	10402*	