RDM1L series
Moulded case circuit breaker

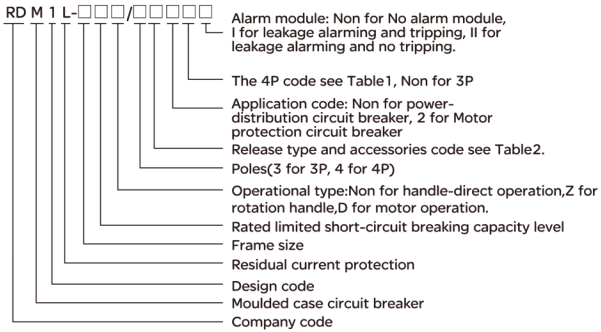
Application

RDM1L series moulded case circuit breaker, is mainly applied to the distribution circuit of AC50/60Hz, rated working voltage is 400V,rated current up to 800A for providing protection indirectly and prevent the fire caused by the fault grounding current, and it also can be used for power distribution and circuit protection against overload and short-circuit, it also works for transfering circuit and starting motor unfrequently.

This product is suitable for isolating.

This product is applied to standard of IEC 60947-2.

Model No.



Note: RDM1L-100L and RDM1L-225L have no leakage alarm module.

Normal operation condition and installation condition

3.1 Temperature: no higher than +40 ℃, and no lower than -5 ℃ ,and the average temperature no higher than +35℃.

3.2 Installation location no more than 2000m.

3.3 The relative humidity: no more than 50%, when Temperature is +40℃. The product can withstand the higher humidity under lower temperature, for instance, when temperature at +20℃, the product can withstand 90% relative humidity. The condensation that happened because of temperature changes should be taken care with special measurements

3.4 Class of pollution : 3 Class

3.5 It should be installed at the place that have no danger of explosion, it also has no gas and conductive dust which would cause metal-corrosion and insulation-damage.

3.6 Maximum install inclined Angle 5° , it should be installed at the place has no obvious impact and weather-influence.

3.7 Main circuit installation type: III, Auxiliary circuit and control circuit installation type:II

3.8 External magneticfield of Installation location should not exceed than 5 times of earth magnetic field.

3.9 Installation electromagnetic environment: B type

Table1

Code	Instruction
A type	N pole has no overload release, and N pole is always connected and do not connect or break with the other 3 pole together.
B type	N pole has no overload release, and N pole connect or break with the other 3 pole together.
C type	N pole has no overload release, and N pole connect or break with the other 3 pole together.
D type	N pole has overload release, and N pole always connected,do not connected or break with the other 3 pole together.

Table2

accessory code / accessory name / release type	non	alarming contact	shunt realease	auxiliary contact	under voltage release	shunt auxiliary release	under shunt voltage release	2 sets contacts	auxiliary contact &under voltage release	alarming contact &shunt release	alarming auxiliary contact	alarming auxiliary contact &shunt release	2 sets auxiliary alarming contact
instantanous release	200	208	210	220	230	240	250	260	270	218	228	248	268
multiple release	300	308	310	320	330	340	350	360	370	318	328	348	368

Note:1.Only 4P B type and C type products has 240,250,248 and 340,350,318,348 accessory code.
2.Only RDM1L-400 and 800 frame size 4P B type and C type product have 260,270,268 and 360,370,368 accessory code.

3.2 Classification
3.2.1 Pole: 2P, 3P and 4P(2P product only has RDM1L-125L/2300, RDM1L-125M/2300,RDM1L-250M/2300,RDM1-250M/2300)
3.2.2 Connection type: front board connection, back board connection and insert type.
3.2.3 Application: power-distribution type and motor-protection type
3.2.4 Residual current release type: electromagnetic type, intantanous type.
3.2.5 Residual current breaking time: delay type and Non-delay type
3.2.6 Rated limited short-circuit breaking capacity: L-standard type, M-Medium type, H-high type
3.2.7 Operational type: Handle-directed operation,Motor operation(P), rotation-handle operation(Z,for cabinet)

Main technical parameter

4.1 Ui=690V, Uimp=8kV, the main technical parameter see Table3.

Table3

Model No.	Rated current In(A)	Rated operational voltage(V)	Rated short-circuit breaking capacity R		Rated residual short circuit making and breaking capacity Im(A)	Rated residual action current In(mA)	Arc distance mm
			Icu(kA)	Ic(skA)			
RDM1L-125L	10 16 20 25 32 40 50 63 80 100	400	35	22	25%Icu	30/100/300 No delay type 100/300/500 delay type	⩽50
RDM1L-125M			50	35			
RDM1L-125H			85	50			

Table3

Model No.	Rated current In(A)	Rated operational voltage(V)	Rated short-circuit breaking capacity R		Rated residual short circuit making and breaking capacity Im(A)	Rated residual action current In(mA)	Arc distance mm
			Icu(kA)	Ic(skA)			
RDM1L-250L	100、125、160、180、200、225	400	35	22	25%Icu	100/300/500	≤50
RDM1L-250M			50	35			
RDM1L-250H			85	50			
RDM1L-400L	225、250、315、350、400	400	50	25	25%Icu	100/300/500	≤50
RDM1L-400M			65	35			
RDM1L-400H			100	50			
RDM1L-800L	400、500、630、700、800	400	50	25	25%Icu	300/500/1000	≤50
RDM1L-800M			70	35			
RDM1L-800H			100	50			

4.2 Circuit breaker residual current action protection time see Table4

Table4

Residual current		I△n	2I△n	5I△n	10I△n
Non-delay type	Max breaking time(s)	0.3	0.15	0.04	0.04
Delay type	Max breaking time(s)	0.4/1.0	0.3/1.0	0.2/0.9	0.2/0.9
	Limited undrive time t(s)	-	0.1/0.5	-	-

4.3 Overload release consists of the thermal long-delay release which has inverse-time characteristic and instantanous action release, the action feature see Table5

Table5

Power-Distribution circuit breaker				Motor-protection circuit breaker			
Rated current In(A)	Thermal release		electromagnetic release action current	Rated current In(A)	Thermal release		electromagnetic release action current
	1.05In(cool state) Non-action time(h)	1.30In(heat state) Action time(h)			1.0 In(cool state) non-action time(h)	1.20In(heat state) action time(h)	
10≤In≤63	1	1	10In±20%	10≤In≤630	2	2	12In±20%
63<In≤100	2	2					
100<In≤800	2	2	5In±20% 10In±20%				

4.4 Accessory device technical parameter

4.4.1 Auxiliary contact and alarm contact rated value, see Table6

Table6

Contact	Frame size rated current	conventional heating current Ith(A)	Rated operation current Ie(A)	
			AC400V	DC220V
Auxiliary contact	Inm≤225	3	0.3	0.15
	Inm≥400	3	0.4	0.15
Alarm contact	100≤Inm≤630	3	0.3	0.15

4.4.2 Control circuit release and motor rated control power voltage(Us) and rated operational voltage(Ue) See Table7.

Table7

Type		Rated voltage (V)		
		AC 50Hz		DC
Release	shunt release	Us	230 400	24 110 220
	undervoltage release	Ue	230 400	
motor mechanism		Us	230 400	110 220

4.4.2.1 shunt release external voltage is between rated control power voltage 70%~110%, it can tripping the release realiably.

4.4.2.2 when power supply voltage decrease to 70% to 35% undervoltage rated operating voltage,under-voltage release can breaking the line.When the power supply voltage is higher than 85% of undervoltage release rated operating voltage,the undervoltage release will that circuit breaker close.Warning: Undervoltage release must be charged at first, then circuit breaker closed. If not, the circuit breaker would be damaged.

4.4.2.3 Motor operation mechanism ensure that it can make the circuit breaker closed when the power voltage is between 85% - 110%,under rated frequency.

4.4.3 Leakage alarming module(RDM1L-125L,250L do not have it.) Specification: P5-P6 port for input power-source AC50/60Hz,230Vor 400V.P1-P2,P3-P4 port for capacity is AC230V 5A, see Fig1

Note: 1. Mode II could satisfy the speacial place needs, User adopts this function after the consideration.

2.Circuit breaker with leakage alarming module. when the leakage alarming is happening, the leakage protection module would function after reseting the reset button of Module II.Fig1.

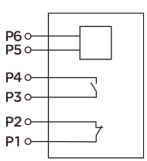


Fig1.

Appearance

5.1 Appeatance and Installation dimension see Fig2, Fig3 and Fig8.

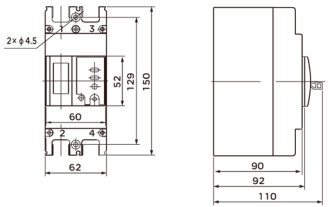


Fig2a RDM1L-125M/2300

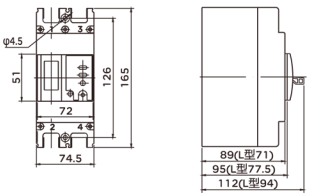


Fig2b RDM1L-250M/2300

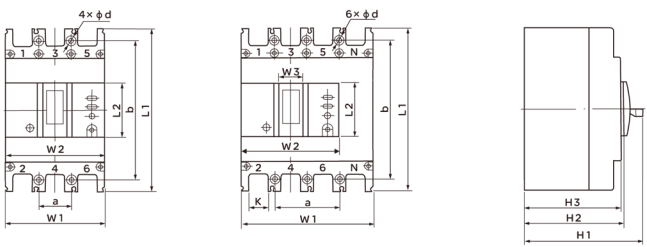


Fig3 Appearance

Table8

Model No.	Pole	Front board connection									Installation Dimension		
		L1	L2	W1	W2	W3	H1	H2	H3	K	a	b	ϕd
RDM1L-125L	3	150	52	92	88	23	94	75	72	18	30	129	ϕ4.5
	4	150	52	122	88	23	94	75	72	18	60	129	ϕ4.5
RDM1L-250L	4	150	52	92	88	23	110	92	90	18	30	129	ϕ4.5
	3	150	52	122	88	23	110	92	90	18	60	129	ϕ4.5
RDM1L-250M.H	3	165	52	107	102	23	94	72	70	23	35	126	ϕ5
	3	165	62	142	102	23	94	72	70	23	70	126	ϕ5
RDM1L-400	3	165	52	107	102	23	110	90	88	23	35	126	ϕ5
	4	165	62	142	102	23	110	90	88	23	70	126	ϕ5
RDM1L-800	4	257	130	150	150	65	150	110	108	32	44	194	ϕ7
	4	257	92	198	142	65	150	110	108	32	44	194	ϕ7
RDM1L-100M.H	4	280	138	210	210	66	150	116	111	44	70	243	ϕ7
	3	280	92	280	182	67	150	116	111	44	70	243	ϕ7