Products Manual

Circuit Breaker

To Create Products That Deliver Happiness To Everyone

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saipwell
Deliver Happiness to Everyone

SAM1

Application

SAM1 series moulded case circuit breaker is one of products developed and manufactured by adopting international advanced technology It is supplied with rated insulating voltage 550 and800V and used for circuit of AC 50/60Hz, rated operating voltage AC 400V (or below), rated operating current up t0 1600A for infrequent changing over and starting of the motors The prod-ucts conforms to IEC60947-2 standard.

Main Technical Specification

Table 1

Type	Rated current (A)	Pole number	Rated insuiating voltage (v)	Rated operating voltage (v)	Arcing-over distance (mm)	Ultimate short circuit breaking capacity (kA)	Servie short circuit breaking capacity (kA)	Operation performance		Utilization category
								Load	Unload	
SAM1-63L	(6),10,16,20, 25,32,40, 50,63	3,4	500V	400V	0	25	18	1500	8500	A
SAM1-63M					0	50	35			
SAM1-100L	(10),16,20,25, 32,40,50,63, 80,100		800V		0(≤ 50)	35	22			
SAM1-100M					0(≤ 50)	50	35			
SAM1-100H					0(≤ 50)	85	50	1000	7000	
SAM1-225L	100,125,160, 180,200,225				≤50	35	22			
SAM1-225M					≤50	50	35			
SAM1-225H					≤50	85	50	1000	4000	
SAM1-400L	225,250,315, 350,400				≤50	50	35			
SAM1-400M					≤ 100	65	42			
SAM1-630L	400 500 630				≤100	50	35			
SAM1-630M					≤100	65	42			
SAM1-630H					≤ 100	100	65			
SAM1-800M	630,700,800	3			≤100	75	50			
SAM1-800H					≤ 100	100	65			
SAM1-1250M	1000,1250				≤ 100	100	65			
SAM1-1250H					≤ 100	125	75			
SAM1-1600M	1600				≤ 100	150	80			

Note: 6A without thermal protection

The N–pole of four–poles breaker is sited al the right side of the product has four types:

Type A: No current trip–lease on N pole which making all the time. not closing and opening with the other three poles.

Type B: Without current trip–release on N pole which dosing and opening with the other poles.

Type C: With current trip–release which dosing and opening with the other three poles

Type D: With current trip–release which making all Ihe time not dosing and opening with the other three poles.

Protection characteristic

The thermodynamic release of a circuit breaker provides the feature of inverse time–delay, while the magnetic release is the instantaneous operation as shown on table 2(distribution circuit breaker) and table 3 (motor protection circuit breaker).

SPM1-63

Application

SPM1-63 is applicable to a line of AC 50/60Hz, 230/400V in single pole, 400V in double, three, four poles for protecting overload and short circuit, and rated current up t0 63A. It can also be used for infrequent line conversion under the normal condition. The breaker is applicable to lighting distribution system in industrial enterprise, commercially district, high-rise building and dwelling house. It conforms with the standards of IEC60898 -1.

Main technical parameter

Type	SPM1-63			
Pole	1P		2P,3P,4P	
Rated current (A)	6,10,16,20,25,32,40,50,63			
Rated voltage(V)	230/400		400	
Ambient temperature	-5℃~+40℃			
Type of instantaneous release	C	D	C	D
Rated short circuit breaking capacity Icn(kA)	1-32A:6 50-63A:4	4	1-32A:6 50-63A:4	4

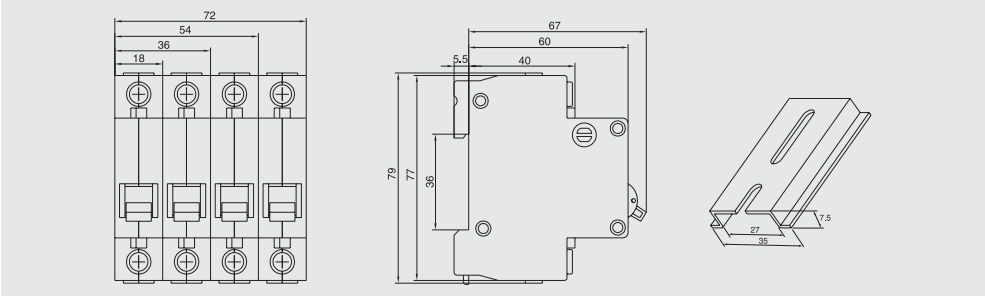
Applicalbe conducting wire

Rated current (A)	Norminal cross section of wire mm^2
1-6A	1
10A	1.5
16,20A	2.5
25A	4
32A	6
40,50A	10
63A	16

The over-current protection property

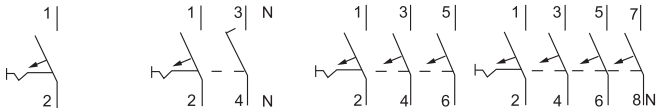
Ambient temperature	Initial status	Test current	Test time	Expected result	Note
30±2℃	Cold position	1.13In	t ⩽ 1h	Non-release	–
	Carried out immediately after pre~ous test	1.45In	t < 1h	Release	–
	Cold position	2.55In	1s<t<60s (In ⩽ 32A)	Release	Current smoothly rises to specified value within 5s
	Cold position	2.55In	1s<t<120s (In>32A)	Release	
-5~+40℃	Cold position	3In	t ⩽ 0.1s	Non-release	Type B
	Cold position	5In	t<0.1s	Release	Type B
	Cold position	5In	t ⩾ 0.1s	Non-release	Type C
	Cold position	I0In	t<0.1s	Release	Type C
	Cold position	I0In	t⩾ 0.1s	Non-release	Type D
	Cold position	20In	t<0.1s	Release	Type D

Dimension



SPF1

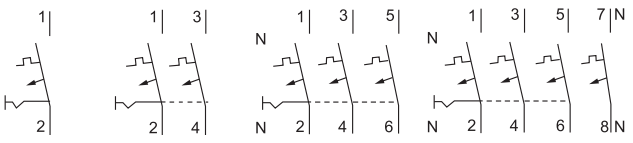
Technical data



Pole	1 Pole	2 Pole	3 Pole	4 Pole
Rated voltage U_N	230/400V AC,max,60V DC			
Rated current I_N	0.5-63A			
Rated frequency F_N	50Hz,60Hz			
Rated breaking capacity	6KA-10KA			
Energy limiting class	3			
Tripping characteristic	B,C,D			
Cross-section of connecting lead	1-25mm^2			
Isolating class	B			
Mounting on the rail	EN50022			
build-in width	18mm/pole			
Sealing possibility	ON-0FF			
Standards	IEC 60898,EN60898			

SPF1-63

Technical data



Pole	1 Pole	2 Pole	3 Pole	4 Pole
Rated voltage U_N	230/400V AC,max,60V DC			
Rated current I_N	0.5-63A			
Rated frequency F_N	50Hz,60Hz			
Rated breaking capacity	3KA,4.5KA,6KA			
Energy limiting class	3			
Tripping characteristic	B,C,D			
Cross-section of connecting lead	1-25mm^2			
Isolating class	B			
Mounting on the rail	EN50022			
build-in width	18mm/pole			
Sealing possibility	ON-0FF			
Standards	IEC 60898,EN60898			

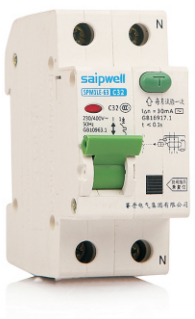
SPR1

Technical data

Standard:IEC/EN61008,GB16916,Rated frequency(Hz)50/60Hz

Rated voltage(Un)	2pole:230V AC
	4pole:400V AC
Rarted current(In):25,40,63,80A	
Rated residual operating current(1△n)	30,100,500mA
Rated residual non-operating current(1△n)	0.5,1△n
Residual current off-time≤0.1s	
Minimum value of rated making and breaking capacity (Im)	6KA
Rated conditional short-circuit current(Inc)	In=25,40A Inc=1500A In=63A Inc=3000A
Endurance	on load:4000cycles off load:4000cycles
Installation	
On symmetrical DIN rail	60715(35mm)

SPM1LE-63



Technical data

Rated voltage U_N	230/400V
Rated current I_N	6-63A
Rated frequency F_N	50Hz,60Hz
Rated breaking capacity	6KA
Energy limiting class	B and C
Tripping characteristic	A AC
Cross-section of connecting lead	1-25mm^2
Width	36mm
Standards	IEC 91009
Release	Electronic

DZ47-63DC

Application

DZ47-63 series DC Mini Circuit Breakers (MCB), is suitable in nominal current 63A and below,direct-current rated voltage 250Vand 440V. Uses for carries on the overload, short-circuitprotection to the current electrical power distribution system's facility and the electricalequipment, and widely used in professional electric power, posts and telecommunications, transortation, Industrial and mining establishments, and so on.
It comply withIEC60898-2, GB10963 standards.

Feature

Tripping Contact System,, and Arc System Lamp. It is used for overload and short-circuit protection. Special structure design and powerful electromagnetic Arc system make the short-circuit breaking capacity up to 10KA,mechanical lifespan over 20,000times, elegant appearance, adopting TH35-7.5 standard steel rail, the characteristics are as follows: the handle is designed above the front surface, safe and comfortable in operation; when connecting the wires must pay attention to the polarity "+,-" ; under the power source progresses, up for input, down for output, conforms to the characteristic of power source connection. Easy for installation, save the line.

Main Technical Data(See Table 1, Table 2)

Table 1

Frame Level Rated Current Imm(A)	Pole	Width/bit (18mm Multiple)	Rated Voltage (V)	Rated Current (A)	Ultimate Short-break Capacity		Instantan-eous Trip Type
					Current Icu(A)	Time Constant T(ms)	
63	1	1	DC125V	1、2、3、4、5 6、10、15、16、 20、25、32、40、 50、63A	10000	10	B\C
	2	2	DC250V				
	3	3	DC440V		6000		

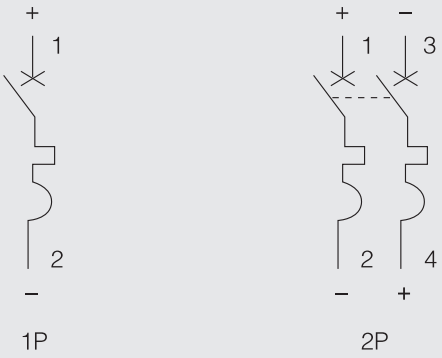
Standard Time--Current

Table 2

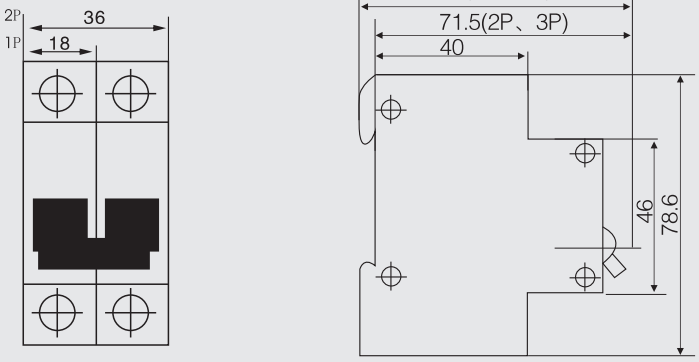
Test	Type	Test Current	Original Current	The tripping type does not release the time limit	Result	Remark
a	B\C	1.13In	Cold State	t≥1h(In≤63A)	no trip	/
b	B\C	1.45In	Following A Test	t≥1h(In≤63A)	trip	Current up steadily in 5s
c	B\C	2.55In	Cold State	1s < t< 60s(In≤32A) 1s <t< 120s(In >32A)	trip	/
d	B\C	4In	Cold State	0.1s≤t≤45s(In≤32A) 0.1s≤t≤90s(In > 32A)	trip	Shut auxiliary switch and connect the power
		7In		0.1s≤t≤15s(In≤32A) 0.1s≤t≤30s(In > 32A)		
e	B\C	7In	Cold State	t< 0.1s	trip	
		15In				

DZ47-63DC

Connection Diagram



Overall And Mounting Diamensions



DZ47-125DC

Application

◇DZ47-125 series DC Mini Circuit Breakers (MCB), is suitable in nominal current 125A and below, direct-current rated voltage 220Vand 440V. Uses for carries on the overload, short-circuitprotection to the current electrical power distribution system's facility and the electrical equipment, and widely used in professional electric power, posts and telecommunications, transortation, Industrial and mining establishments, and so on.
◇It comply with GB14048.2,IEC60947-2 standards.

Feature

DZ47-125 is composed by Shell, Operation Structure, Thermal Tripping System, Electromagnetic Tripping Contact System, and Arc System Lamp. It is used for overload and short-circuit protection. Special structure design and powerful electromagnetic Arc system make the short-circuit breaking capacity up t0 10KA, mechanical lifespan over 20,000times, elegant appearance, adopting TH35-7.5 standard steel rail, the characteristics are as follows: the handle is designed above the front surface, safe and comfortable in operation; when connecting the wires must pay attention to the polarity "+,-" ; under the power source progresses, up for input, down for output, conforms to the characteristic of power source connection. Easy for installation. Ensuring a cost-effective range of wires.

Main Technical Data(See Table 1, Table 2)

Table 1

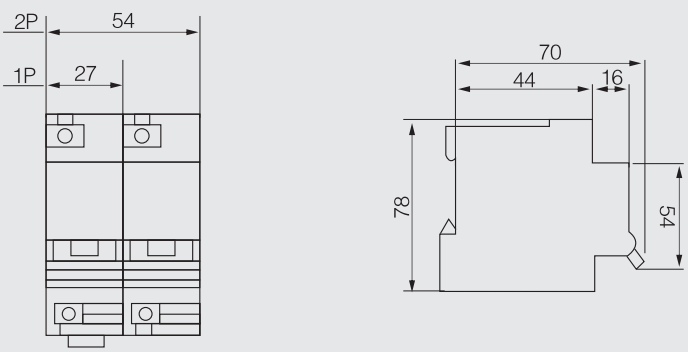
Frame Level Rated Current Imm(A)	Pole	Width/bit (18mm Multiple)	Rated Voltage (V)	Rated Current (A)	Ultimate Short-break Capacity		Instantan -eous Trip Type
					Current Icu(A)	Time Constant T(ms)	
63	1	1	DC125V/220V	63、80、100、125A	10000	10	C
	2	2	DC250V/440V				

Standard Time--Current

Table 2

Test	Type	Test Current	Original Current	The tripping type does not release the time limit	Result	Remark
a	C	1.05In	Cold State	t≥2h	no trip	/
b	C	1.3In	Following A Test	t<2h	trip	Current up steadily in 5s
c	C	8In	Cold State	t≥0.2s	trip	Shut auxiliary switch and connect the power
		12In		t<0.2s		

Overall And Mounting Diamensions



SPM2-DC

Application

SPM2 DC series moulded case circuit breaker is a newly developed model which has adopted international advanced design and manufacturing technology. The rated voltage is DC 750V or less, while the rated current is up to 800A in circuit. This model has the function of protecting against short circuit, overload and the damage to the electric devices in circuit.

Standards & Certificates

◇IEC60947-1 GB14048.1 General Principle
◇IEC60947-2 GB14048.2 Low Voltage Circuit Breaker
◇IEC60947-4-2 GB14048.6 Contactor and Motor Starter

Features

◇SPM2 series DC circuit breaker has adopted an original arc extinction technology CCV, which is quadruple accelerating and Slit segment Eliminate free arcing. It makes arcing distance shorter and has higher breaking capacity.
◇Small volume, accurate short circuit and short time delay, complete in specifications.
◇Usually in accordance with standards selection, with battery power supply system for the poles difference, you can simplify the calculation of circuit current, without considering the resistance, cable cross-sections, copper content, limiting factor, cable thermal stability and other parameters. The circuit breakers only need to be selected by rated current to achieve three sections full protection, the performance has also reached the international level.
◇In the respect of the corrosion resistance, SPM2 series DC circuit breaker has adopted the most advanced technology of anti-corrosion surface treatment, hardness increasing treatment and soft amide plus matte plating process, which makes the product has better performance than nickel-plated process in corrosion resistance. It is suitable for using in high degree of protection

Operating Environment

◇Altitude of 2000 m and below
◇Ambient temperature between -5℃ and +40℃; when ambient temperature higher than +40℃, reduce capacity for using
◇Resistant to moisture
◇Resistant to salt and oil mist
◇Resistant to mould
◇Work steadily under the circumstance of normal vibration on vessel
◇In no risk of explosion area, the medium doesn't have enough substance to corrode metal and damage the insulation, no conductive dust
◇In the circumstance of no rain and snow

SPM2-DC

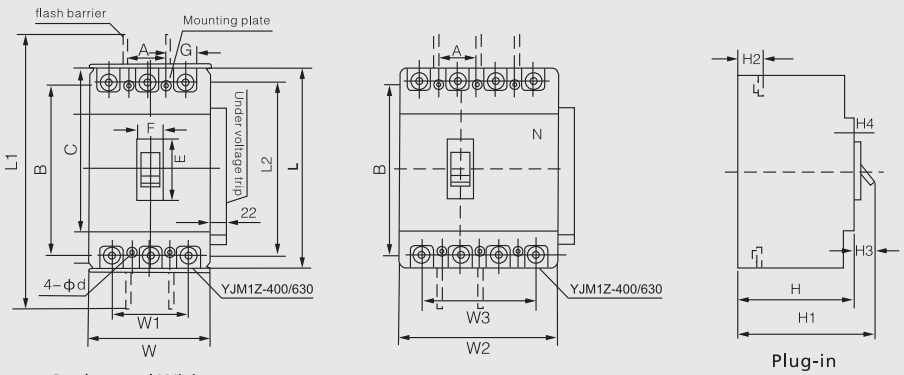
Range of Application

Type	Rated current rating (A)	Rated current (A)	Rated operating voltage (V)	Breaking capacity	Pole	Flying distance
SPM2-100	100	10,16,20,25,32 40.50,63,80,100	DC250 DC440 DC550 DC750	10K/V20KA	2 3 4	≤50
SPM2-225	225	100,125,160 180,200,225				≤50
SPM2-400	400	225,250,315 350,400				≤100
SPM2-630	630	400,500,630				≤100
SPM2-800	800	630,700,800				≤100

Note：DC750V must be customized

Mounting and Dimension

Wiring in front of the plate



Back-panel Wiring

Plug-in

Type	Pole	Model Poles Front connection and Dimensions																
		W	W1	L	L1	L2	H	H1	H2	H3	H4	C	D	E	F	G	W2	W3
SPM2-100	2	64.5	30	150	185	132	68	86	24	7	4	88	35.5	50	22	17.5		
	3	92	60	150	185	132	86	104	24	7	4	88	35.5	50	22	17.5		
	4	92	60	150	185	132	86	104	24	7	4	88	35.5	50	22	17.5	122	90
SPM2-225	2	74.5	35	165	215	144	86	110	24	5	4	102	31.5	50	22	17		
	3	107	70	165	215	144	103	127	24	5	4	102	31.5	50	22	17		
	4			165	215	144	103	127	24	5	4	102	31.5	50	22	17	142	105
SPM2-400	2	150	96	257	357	224	105	155	38	8	6	128	64.5	89	65	Φ26		
	3	150	96	257	357	224	105	155	38	8	6	128	64.5	89	65	Φ26		
	4			270	370	234	110	160	43	8	6	134	70	89	65	Φ29	198	144
SPM2-630	2	182	116	270	370	234	110	160	43	8	6	134	70	89	65	Φ29		
	3	182	116	270	370	234	110	160	43	8	6	134	70	89	65	Φ29		
	4			270	370	234	110	160	43	8	6	134	70	89	65	Φ29	240	174
SPM2-800	2	210	140	280	280	243	106	145	33	30	128							
	3	210	140	280	280	243	106	145	33	30	128							