



DAM11 Series Moulded-case Circuit Breaker

Product overview

DAM11, DAM11LY, DAM11RT, DAM11E and DAM11EL series of circuit breakers are new upgraded circuit breakers researched and developed by the company combined with the advantages of similar international products and demand of domestic and international markets.

With insulation voltage up to 1000V, the circuit breaker is applicable for distribution systems of AC50Hz, rated working voltage 690V and rated working current from 10A to 800A, used to distribute electric power energy, protect circuits and power equipment against overload, short circuit, under voltage and so on, also can be used for infrequent startup of motor and protect it from overload, short circuit or under voltage.

It is featured with small size, high breaking, short flashover, etc., is the ideal product for users. It can be vertically installed or horizontally installed.

DAM11DC series DC moulded-case circuit breaker (hereinafter referred to as circuit breaker) is suitable for DC systems of rated voltage up to and including DC 1000V and rated current 10~800A, used to distribute electric power energy, protect circuits and power equipment against overload, short circuit and so on.

The products can be fed with wires from top and bottom, and it is polarity-free.

It complies with the standards IEC60947-2, GB14048.2, etc.

Product features

Feature 1: current limiting capacity

Current-limiting refers to limit of the increase of short-circuit current in the loop, and in the loop protected by DAM11, peak value of the short-circuit current and the I^2t energy in the circuit will be much smaller than the prospective value.

U-shaped fixed contact

Unique U-shaped fixed contact can achieve pre-breaking technology:

The so-called pre-breaking technology refers to when short-circuit current flows through the contact system, electric power generated by U-shaped fixed contact and moving contact is mutual exclusive. The greater the short-circuit current is, the greater the repulsion of the electromotive force, and it is generated together with the short-circuit current at the same time. Before the trip action occurs, the electrodynamic repulsion force can make the fixed and moving contact separation, by increasing the arc to increase the equivalent resistance between them to achieve the purpose of suppressing increase of short-circuit current.

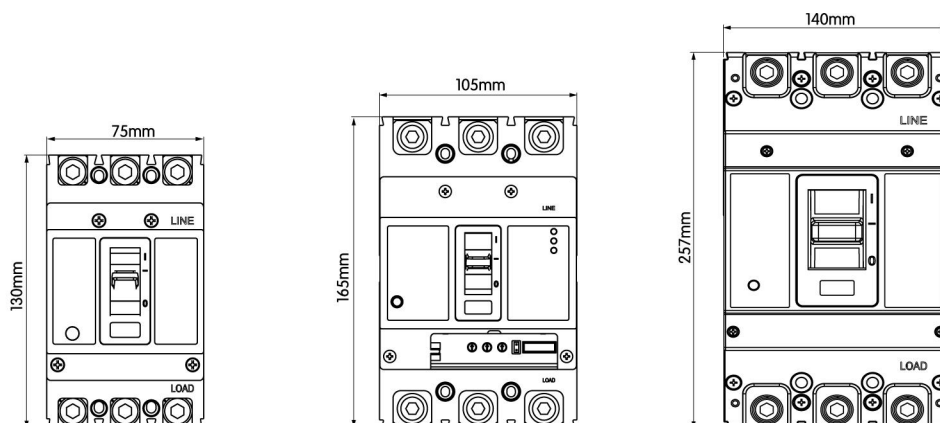
Feature 2: modular accessories

- ◆ Accessory: For the circuit breakers of the same frame, they has uniform sizes regardless of the breaking capacity and rated current;Accessory: Users can freely
- ◆ choose and expand functions of circuit breakers according to their needs
- ◆ Modular accessories have insulation function, which is easy for hot-line operation and installation.

Feature 3: miniaturized frame

5 frame sizes: 125 type, 160 type, 250 type, 630 type, 800 type

Rated current of DAM11 series 10A~800A



Feature 4: contact repulsion device (patented technology)

The technical scheme adopted by the invention is:

As shown in Figure 1, the new contact device is mainly consisted of fixed contact, moving contact, shaft 1, shaft 2, shaft 3 and springs;

When the circuit breaker is in the closed state, shaft 2 acts on the right side of the spring angle; When the circuit breaker has a large fault current, the moving contact will be subjected to the electric repulsion generated by the current itself, and rotate with the center of shaft 1, when shaft 2 rotates to the top of the spring angle with the moving contact, it makes moving contact to rapidly rotate upwards and quickly break the circuit upon the reaction of spring, it has enhanced the breaking capacity of the

product through optimization of the contact structure.

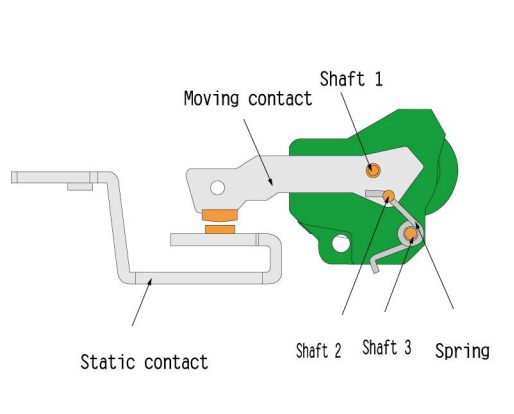


Figure 1

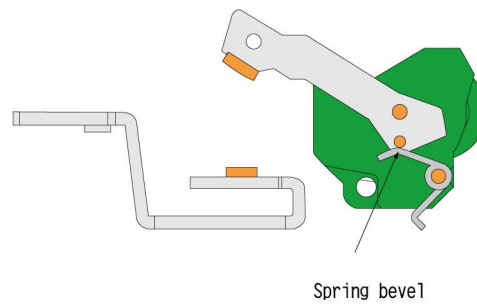
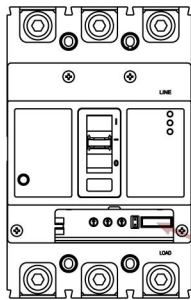


Figure 2(opening state)

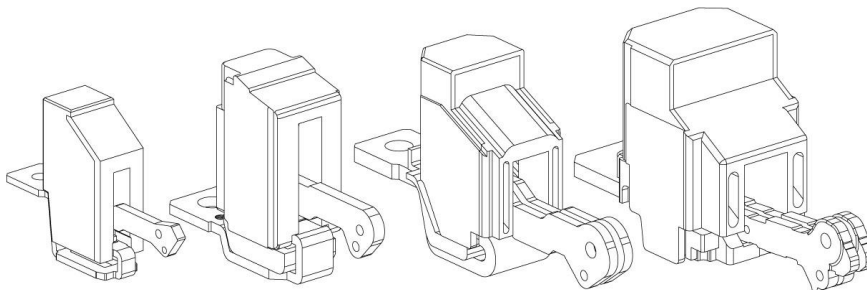
Feature 5: intelligence

Network communication is more convenient. It accesses to Modbus communication system through dedicated connection. DAM11E / DAM11EL with communication function can select monitoring accessories to realize door display, read, set and control.



Communication is built in the body,
without external modules

Feature: modularized arc extinguishing system



Feature 7: unification

The six series of DAM11, DAM11LY, DAM11DC, DAM11RT, DAM11E, and DAM11EL under the same frame size have the same dimensions, installation dimensions and appearance style, which is completely unified design.

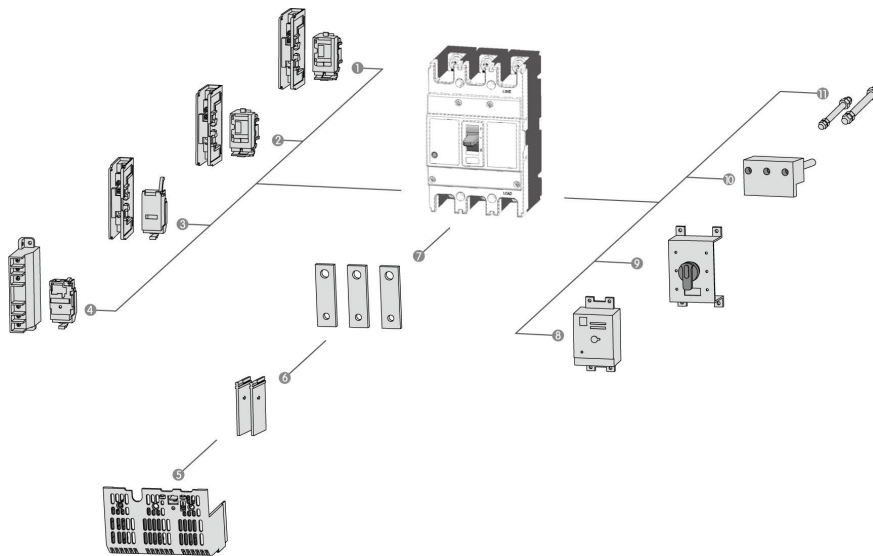
Ambient and installation conditions

- ◆ Altitude up to 2000m;
- ◆ Ambient medium temperature should be within -5°C to +40°C (+45°C for marine products);
- ◆ It can withstand the effect of damp air;

- ◆ It can withstand the effect of moulds;
- ◆ It can withstand the effect of nuclear radiation;
- ◆ The max inclination is 22.5°C.
- ◆ It still can work reliably when the ship subjects to normal vibration;
- ◆ It can still work reliably if the product subjects to the earthquake (4g).
- ◆ Places where the surrounding medium is free from explosion danger, and far away from gas or conductive dust that would erode the metal or destroy the insulation;
- ◆ Keep away from rain or snow.

Components of circuit breaker

1 Auxiliary switch	5 Terminal cap	9 Manual operation
2 Alarm switch	6 Phase partition	10 Plug-in type back-board wiring
3 Shunt release	7 Front-board wiring	11 Back-board wiring
4 Undervoltage release	8 Electric operation	











Model selection guide


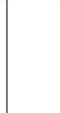






DAM11	125	C			P	4
↓	↓	↓			↓	↓
Product code	Frame size	Current class			Code of control circuit source voltage	Pole number
Moulded-case circuit breaker	125 160 250 400 630 800	C	S	H	P: electric operation	3: 3-pole
	Note:	125	15/10	18/15	28/18	Z: rotary handle
	125 is upgraded type of 63 frame	160	20/15	25/18	35/25	W: direct operation
	160 is upgraded type of 100 frame	250	25/15	25/18	35/25	
	250 is upgraded type of 225 frame	400		35/25	50/35	
	630 is upgraded type of 400 frame	630		35/25	50/35	
		800		50/35	65/50	







300	125A		2	A
↓	↓		↓	↓
Release type and internal accessory	Rated current (A)		Application	Code of four-pole product
The first digit represents release type	125	10, 16, 20, 25, 32, 40, 50, 63, 80, 100, 125	1: power distribution	A: N-pole without protection cannot close or open
2: Has instantaneous release only	160	63, 80, 100, 125, 140, 160	2: motor protection	B: N-pole without protection can close and open
3: Complex release Note:	250	100, 125, 140, 160, 180, 200, 225, 250		C: N-pole with protection can close and open
Later two digits are the code of accessories (see accessory table)	400	250, 300, 315, 350, 400		D: N-pole with protection cannot close or open
	630	400, 500, 630		
	800	500, 630, 700, 800		

Q1			D1		Q	2
↓			↓		↓	↓
Accessory voltage			Electric operation voltage		Installation methods	Install wiring board or not
Undervoltage release	Shunt release	Auxiliary alarm	DC1 Electric Operation	DC3 Electric Operation	Q: Front-board	1: No
Q1: AC220V	F1: AC220V	J1: AC125V	D1: AC220V	D5: AC230V	H: Back-board	2: Yes
Q2: AC240V	F2: AC380V	J2: AC250V	D2: AC230V	D6: AC110V	C: Plug-in type	
Q3: AC380V	F3: DC110V	J3: DC125V	D3: AC380V	D7: DC220		
Q4: AC415V	F4: DC24V	J4: DC24V	D4: AC400V	D8: DC110		
				D9: AC110-240V		
				D10: DC100-220V		
Note:						
Adaptable voltages for two electric operations. Please refer to the introduction of external accessory.						

- Circuit breaker can be equipped with undervoltage release, shunt release, auxiliary contacts, alarm contacts, electric operating mechanism, rotary operating handle and other accessories.
- Circuit breaker has protection functions of overload long delay, short-circuit short delay and short-circuit instantaneous protection, the user can set the required protection characteristics (user only needs to operate the DIP switch for settings of protection function parameters).
- Circuit breaker has ground fault and thermal analog protection functions, pre-alarm indication over-current indication, load current indication, digital current analysis technology, and it can achieve a higher level of protection.

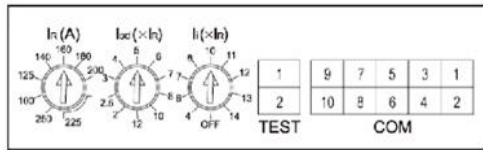
DAM11 thermal overload technical data sheet																			
Frame current (A)		125			160			250			400		630		800				
Model		DAM11-125C	DAM11-125S	DAM11-125H	DAM11-160C	DAM11-160S	DAM11-160H	DAM11-250C	DAM11-250S	DAM11-250H	DAM11-400S	DAM11-400H	DAM11-630S	DAM11-630H	DAM11-800S	DAM11-800H			
Pole number		1, 2, 3, 4			2, 3, 4			3, 4			3, 4		3, 4		3, 4				
Rated current (A)		10, 16, 20, 32, 25, 40, 50, 63, 80, 100, 125			63, 80, 100, 125, 140, 160			100, 125, 140, 160, 180, 200, 225, 250			250, 315, 350, 400		250, 315, 350, 400, 500, 630		500, 630, 700, 800, 1000, 1250				
Rated voltage (V)		AC400V			AC400V			AC400V			AC400V		AC400V		AC400V				
Rated insulation voltage (V)		AC1000V			AC1000V			AC1000V			AC1000V		AC1000V		AC1000V				
Short-circuit breaking capacity(KA)Icu/Ics	AC400V	10/15	18/15	25/18	20/15	25/18	35/25	25/15	25/18	35/25	35/25	50/35	35/25	50/35	50/35	65/65			
Operating cycle number	Electrical life	6000			3000			3000			2000		2000		1500				
	Mechanical life	9000			7000			7000			4000		4000		4000				
Outline dim(mm)	1P	25-130-68-90			-	-	-	-	-	-	-	-	-	-	-	-	-		
	a-b-c-ca	2P	50-155-68-90			60-155-68-90		60-155-88-115		-	-	-	-	-	-	-	-		
		3P	75-130-68-90			90-155-68-90		90-155-88-115		105-165-68-92		105-165-88-115		140-257-103-155		140-257-103-155		210-275-103-155	
		4P	100-130-68-90			120-155-68-90		120-155-88-115		140-165-68-92		140-165-88-115		184-257-103-155		184-257-103-155		280-275-103-155	
Weight (kg)	1P	0.32			-	-	-	-	-	-	-	-	-	-	-	-	-		
	2P	0.5			0.55	1	1.1	1.5	1.7	5.5	5.7	9.5							
	3P	0.55			0.65	1.1	1.2	1.9	2.1	7	7.5	12.5							
	4P	0.65			0.8	1.4	1.5												
Electric operating device (MD)					•			•			•		•		•				
External driving operating handle					•			•			•		•		•				
Automatic release		Thermal electromagnetic type			Thermal electromagnetic type			Thermal electromagnetic type			Thermal electromagnetic type		Thermal electromagnetic type		Thermal electromagnetic type				

DAM11RT thermal adjustable and magnetic adjustable (TAMA) technical data sheet											
Frame current (A)		160		250		400		630		1250	
Model		DAM11RT-160S	DAM11RT-160H	DAM11RT-250S	DAM11RT-250H	DAM11RT-400S	DAM11RT-400H	DAM11RT-630S	DAM11RT-630H	DAM11RT-1250S	DAM11RT-1250H
Pole number		3, 4		3, 4		3, 4		3, 4		3, 4	
Rated current (A)		20-25, 25-32, 32-40, 40-50, 50-63, 63-80, 80-100, 100-125A, 125-160A		100-125, 125-160, 160-200, 200-250A		200-250, 250-320, 320-400		400-500, 500-630		630-800, 800-1250	
Rated voltage (V)		AC400V		AC400V		AC1000V		AC1000V		AC1000V	
Rated insulation voltage (V)		AC1000V		AC1000V		35/25	50/35	35/25	50/35	50/35	65/50
Short-circuit breaking capacity(KA)Icu/Ics	AC400V	25/18	35/25	25/18	35/25	2000		2000		1500	
Operating cycle number	Electrical life	3000		3000		4000		4000		4000	
	Mechanical life	7000		7000		1000		1000		1000	
Outline dim(mm) a-b-c-ca	3P	90-155-68-90		90-155-88-115		105-165-68-92		105-165-88-115		140-257-103-155	
	4P	120-155-68-90		120-155-88-115		140-165-68-92		140-165-88-115		185-257-103-155	
Weight (kg)	3P	1	1.1	1.5	1.7	5.5		5.7		9.5	
	4P	1.1	1.7	1.9	2.1	7		7.5		12.5	
Electric operating device (MD)				•		•		•		•	
External driving operating handle				•		•		•		•	
Automatic release		Thermal electromagnetic type		Thermal electromagnetic type		Thermal electromagnetic type		Thermal electromagnetic type		Thermal electromagnetic type	

DAM11E Electronic type MCCB technical data sheet						
Frame current (A)		160	250	400	630	1250
Model		DAM11E-160H	DAM11E-250H	DAM11E-400H	DAM11E-630H	DAM11E-1250H
Pole number		3, 4	3, 4	3, 4	3, 4	3, 4
Rated current (A)		16-32, 40-125, 80-160	16-32, 40-125, 80-160, 100-250	200-400	200-400, 300-630	400-800, 800-1250
Rated voltage (V)		AC400V				
Rated insulation voltage (V)		AC1000V				
Short-circuit breaking capacity(KA)Icu/Ics	AC400V	35/25	35/25	50/35	50/35	65/50
Operating cycle number	Electrical life	1500	1000	1000	1000	1000
	Mechanical life	7000	7000	4000	4000	4000
Outline dim(mm) a-b-c-ca 	3P	90-155-88-115	105-165-88-115	140-257-103-155	140-257-103-155	210-257-103-155
	4P	90-155-88-115	140-165-88-115	185-257-103-155	185-257-103-155	280-257-103-155
Weight (kg)	3P	1.8	2.1	5.5	5.7	5.7
	4P	2.3	2.6	7	7.5	7.5
Electric operating device (MD)		•				
External driving operating handle		•				
Automatic release		Electronic type				

Panel and function description

Intelligent release panel



Tripping test port (TEST):

- 1 Tripping test input DC12V(+)
- 2 Tripping test input DC12V(-)

Panel adjustment knob as follows in turn:

- IR(A) Isd(x IR) Ii(x IR)
- IR: Overload long delay tripping setting current; Isd: Short-circuit short delay tripping setting current;
- Ii: Short-circuit instantaneous tripping setting current;

The rest parameters are set by factory default, or set by remote communication, as follows:

- t_R : Overload long delay setting time, factory default: 60s;
- t_{sd} : Short-circuit short delay setting time, factory default: 0.1s;
- I_p : Overload pre-alarm setting current, factory default: $0.85 \cdot I_R$;

Intelligent communication port (COM):

1: Power supply input DC24V(+)	6: 485B-
2: Power supply input DC24V(-)	7: Closing and opening common terminal of electric operating mechanism
3: 485A+	8: Closing and opening common terminal of electric operating mechanism
4: 485A+	9: Opening of electric operating mechanism
5: 485B-	10: Closing of electric operating mechanism

Panel With Residual Current Protection

1: Setting current I_n in overload indicator, the red light will go on when the operation current is $\geq 105\% I_n$	
2: Pre-alarm current I_p indicator, the yellow light starts flashing when operation current is $\geq I_p \times 90\%$	
3: When operation current is $\geq 60\% \times I_n$ setting current, the green light will go on	
4: The code switch for residual current setting	
5: The code switch for leakage action time setting	