

## Photovoltaic DC Components

### YCB8-125PV Photovoltaic DC MCB



#### General

The rated operating voltage of YCB8-125PV series DC miniature circuit breakers can reach DC1000V, and the rated operating current can reach 125A, which are used for isolation, overload and short circuit protection. It is widely used in photovoltaic, industrial, civil, communication and other systems, and can also be used in DC systems to ensure the reliable operation of DC systems.  
Standard: IEC/EN 60947-2.

#### Features

- Modular design, small size;
- Standard Din rail installation, convenient installation;
- Overload, short circuit, isolation protection function, comprehensive protection;
- Current up to 125A, 4 options;
- The breaking capacity reaches 6KA, with strong protection capacity;
- Complete accessories and strong expansibility;
- Multiple wiring methods to meet various wiring needs of customers;
- The electrical life reaches 10000 times, which is suitable for the 25-year life cycle of photovoltaic.

#### Selection

YCB8	125	PV	4P	63	DC250	YCB8-63 OF
Model	Shell grade current	Usage	Number of poles	Rated current	Rated voltage	Accessories
Miniature circuit breaker	125	Photovoltaic/ direct-current PV: heteropolarity Pvn: nonpolarity	1P 2P 3P 4P	63A, 80A, 100A, 125A	DC250V DC500V DC750V DC1000V	YCB8-125 OF: Auxiliary YCB8-125 SD: Alarm YCB8-125 MX: Shunt

Note: The rated voltage is affected by the number of poles and wiring mode.  
The single pole is DC250V, the two poles in series are DC500V, and so on.

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#### Technical data

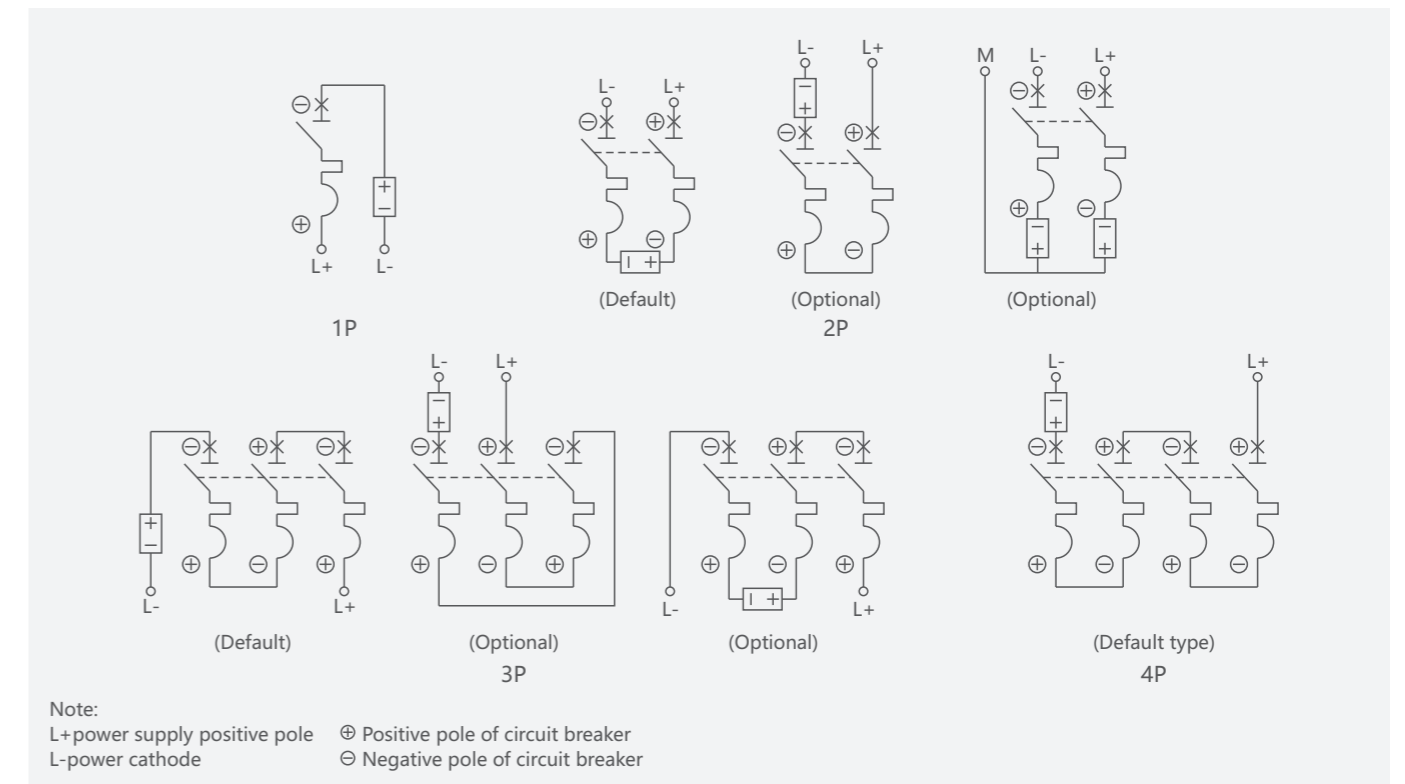
Standard		IEC/EN 60947-2			
Number of poles		1P	2P	3P	4P
Rated current of shell frame grade		125			
<b>Electrical performance</b>					
Rated working voltage Ue(V DC)		250	500	750	1000
Rated current In(A)		63, 80, 100, 125			
Rated insulation voltage Ui(V DC)		500VDC per pole			
Rated impulse voltage Uimp(KV)		6			
Ultimate breaking capacity Icu(kA)		Pv : 6 PVn : 10			
Operation breaking capacity Ics(KA)		PV : Ics=100%Icu PVn : Ics=75%Icu			
Curve type		Ii=10In(default)			
Tripping type		Thermomagnetic			
Service life (time)	Mechanical	20000			
	Electrical	PV : 1000 PVn : 300			
Polarity		Heteropolarity			
Inline methods		Can be up and down into the line			
<b>Electrical accessories</b>					
Auxiliary contact		<input type="checkbox"/>			
Alarm contact		<input type="checkbox"/>			
Shunt release		<input type="checkbox"/>			
<b>Applicable environmental conditions and installation</b>					
Working temperature(°C)		-35~+70			
Storage temperature(°C)		-40~+85			
Moisture resistance		Category 2			
Altitude(m)		Use with derating above 2000m			
Pollution degree		Level 3			
Protection degree		IP20			
Installation environment		Places without significant vibration and impact			
Installation category		Category III			
Installation method		DIN35 standard rail			
Wiring capacity		2.5-50mm <sup>2</sup>			
Terminal torque		3.5N·m			

■ Standard □ Optional – No

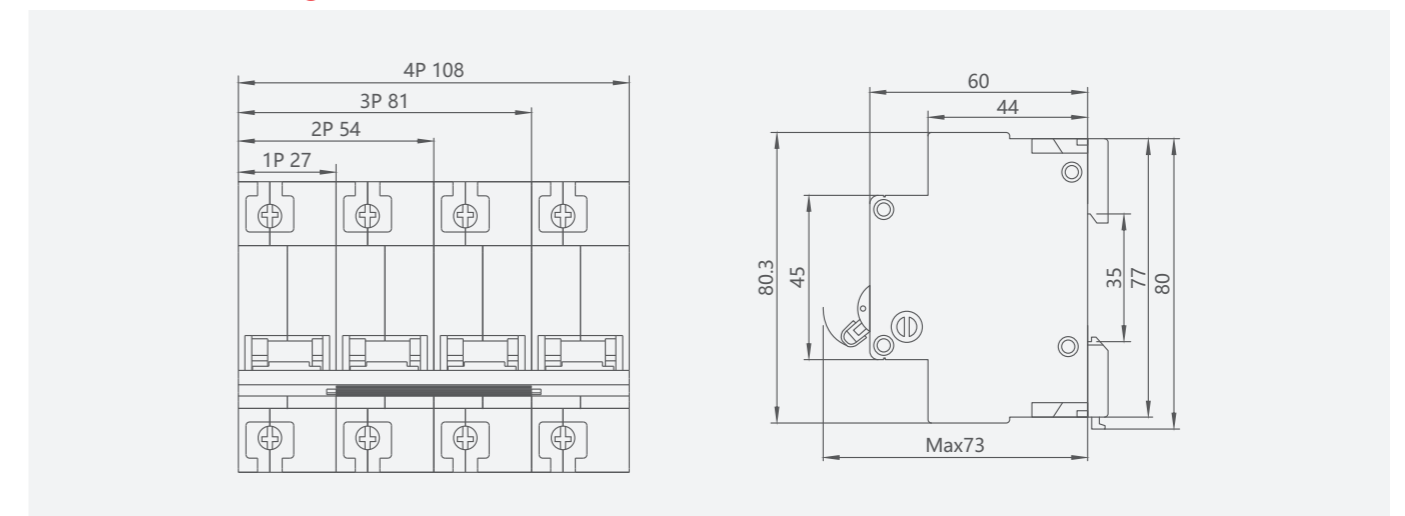
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#### Wiring diagram



#### Overall and mounting dimensions(mm)



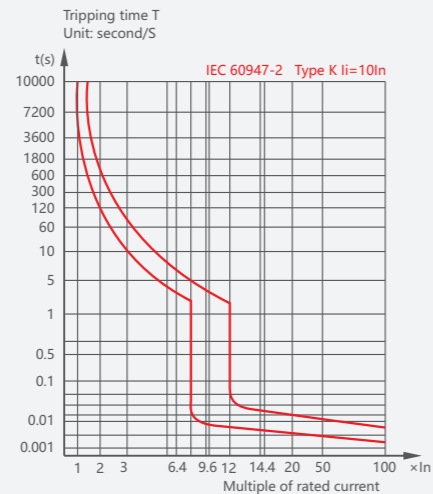
#### Tripping characteristics

Circuit breaker under normal installation conditions and reference ambient temperature (30~35)°C

Tripping type	DC current	Initial state	Appointed time	Expected results
All types	1.05In	Cold state	t≤2h	No tripping
	1.3In	Thermal state	t<2h	Tripping
Ii=10In	8In	Cold state	t≤0.2s	No tripping
	12In		t<0.2s	Tripping

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### Curve



### Temperature correction factor table

Current correction value for different ambient temperatures

Rated current(A)	Temperature (°C)	-25	-20	-10	0	10	20	30	40	50	60
63A		77.4	76.2	73.8	71.2	68.6	65.8	63	60	56.8	53.4
80A		97	95.5	92.7	89.7	86.6	83.3	80	76.5	72.8	68.9
100A		124.4	120.7	116.8	112.8	108.8	104.5	100	95.3	90.4	87.8
125A		157	152.2	147.2	141.9	136.5	130.8	125	118.8	112.3	105.4

### Use of derating table at high altitude

Current correction factor at different altitudes

Rated current(A)	Current correction factor		
	≤2000m	2000-3000m	≥3000m
63, 80, 100, 125	1	0.9	0.8

Example: If a circuit breaker with a rated current of 100A is used at an altitude of 2500m, the rated current must be derated to  $100A \times 90\% = 90A$

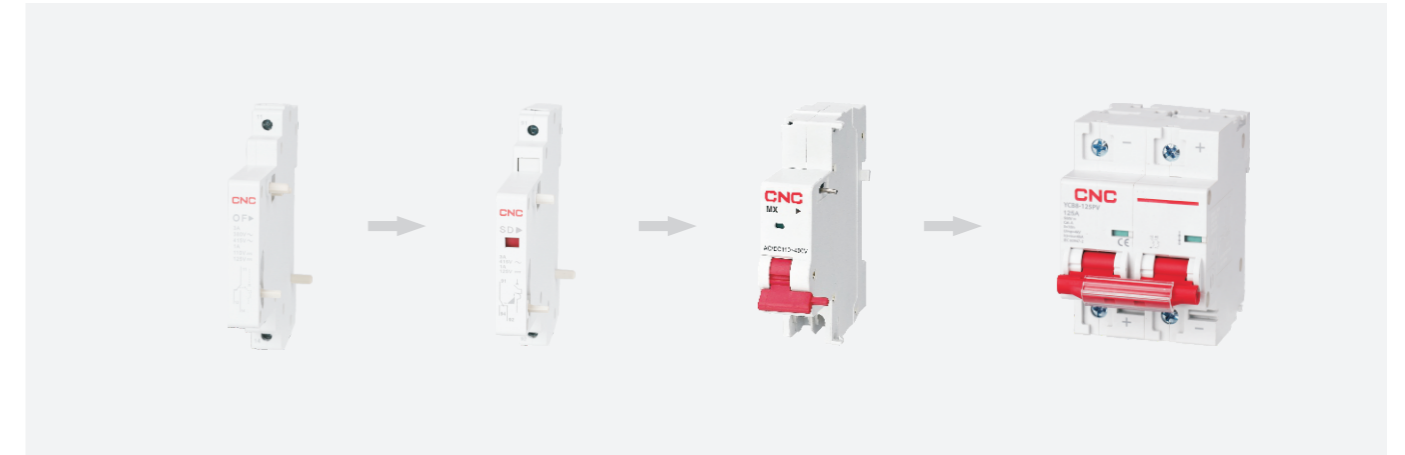
### Power consumption per pole of circuit breaker and wiring size

Rated current In(A)	Nominal cross-section of copper conductor(mm <sup>2</sup> )	Maximum power consumption per pole(W)
63	16	13
80	25	15
100	35	15
125	50	20

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### Accessories

The following accessories are suitable for YCB8-125PV series, which can provide the functions of remote control of circuit breaker, automatic disconnection of fault circuit, status indication (breaking/closing/fault tripping)



- The total width of the accessories assembled is within 54mm, the order and quantity from left to right: OF, SD(3max)+MX, MX+OF, MV+MN, MV(1max)+MCB; SD can only assemble up to 2 pieces ;
- Assembled with the body, no tools required;
- Before installation, check whether the technical parameters of the product meet the requirements of use, and operate the handle to open and close several times to check whether the mechanism is reliable.

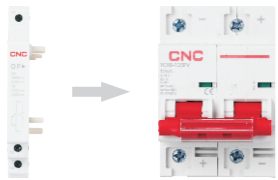




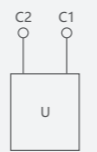
### Miniature circuit breaker accessories

- Auxiliary contact OF  
Remote indication of closing/opening status of circuit breaker.
- Alarm contact SD  
When the circuit breaker fault trips, it sends out a signal, together with a red indicator on the front of the device.
- Shunt release MX  
When the power supply voltage is 70%~110%U<sub>e</sub>, the remote control circuit breaker trips after receiving the signal.
- Minimum making and breaking current: 5mA(DC24V)
- Service life: 6000 times (operating frequency: 1s)

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#### Technical data

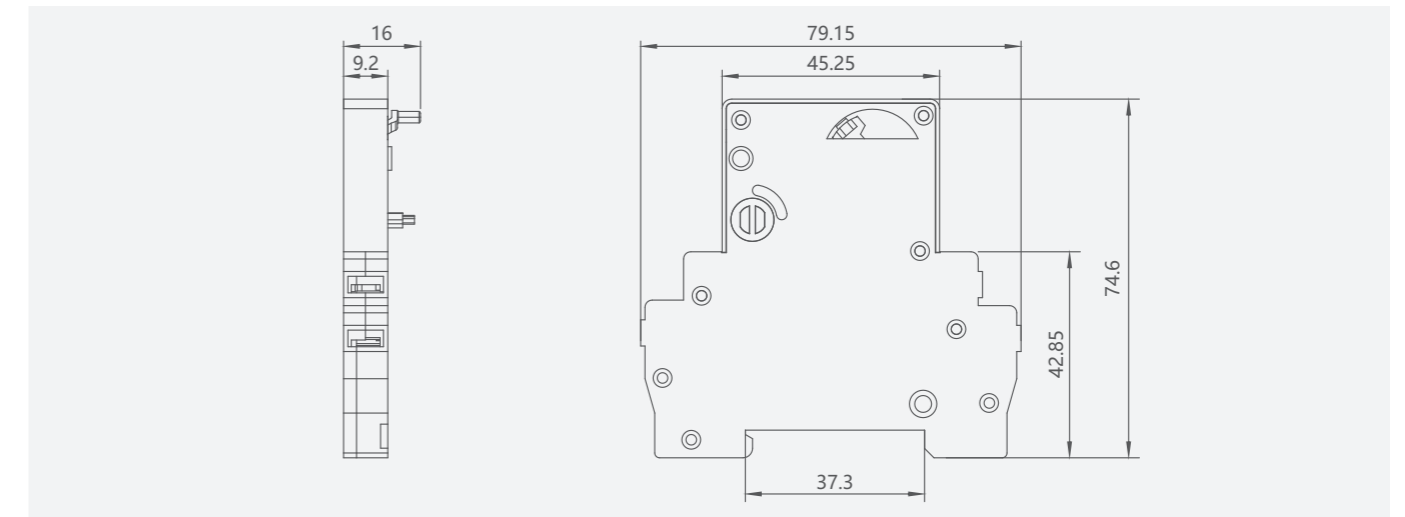
Model	YCB8-125 OF	YCB8-125 SD	YCB8-125 MX
Appearance			
Types			
Number of contacts	1NO+1NC	1NO+1NC	/
Control voltage (V AC)			110-415 48 12-24
Control voltage(V DC)			110-415 48 12-24
Working current of contact	AC-12 Ue/Ie: AC415/3A DC-12 Ue/Ie: DC125/2A		/
Shunt control voltage			Ue/Ie: AC:220-415/ 0.5A AC/DC:24-48/3
Width(mm)	9	9	18
<b>Applicable Environmental Conditions and Installation</b>			
Storage temperature(°C)	-40°C~+70°C		
Storage humidity	the relative humidity does not exceed 95% when at +25°C		
Protection degree	Level 2		
Protection degree	IP20		
Installation environment	Places without significant vibration and impact		
Installation category	Category II、Category III		
Installation method	TH35-7.5/DIN35 rail installation		
Maximum wiring capacity	2.5mm <sup>2</sup>		
Terminal torque	1N·m		

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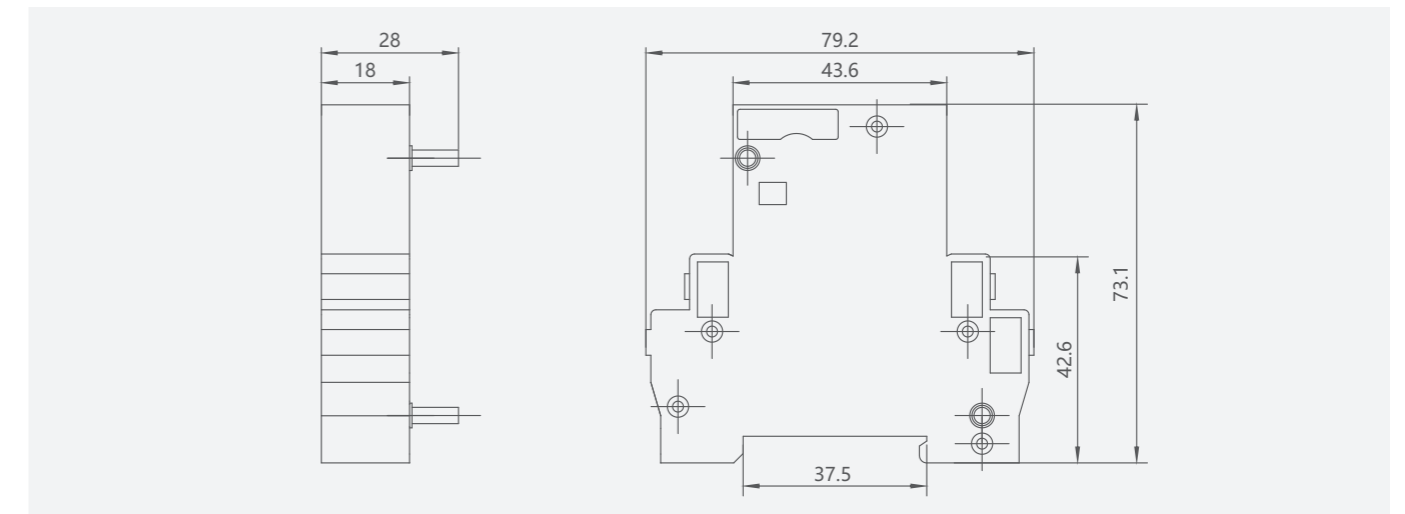
### YCB8-125PV Photovoltaic DC MCB

#### Overall and mounting dimensions(mm)

Alarm Contact Outline and installation dimensions



MX+OF Outline and installation dimensions



MX Outline and installation dimensions

