

## Photovoltaic DC Components

### YCB8-63PV Photovoltaic DC MCB



#### General

The rated operating voltage of YCB8-63PV series DC miniature circuit breakers can reach DC1000V, and the rated operating current can reach 63A, 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, EU ROHS environmental protection requirements.



#### Features

- Modular design, small size;
- Standard Din rail installation, convenient installation;
- Overload, short circuit, isolation protection function, comprehensive protection;
- Current up to 63A, 14 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	63	PV	4P	C	20	DC250	+	YCB8-63 OF
Model	Shell grade current	Usage	Number of poles	Tripping characteristics	Rated current	Rated voltage		Accessories
Miniature circuit breaker	63	PV: heteropolarity Pvn: nonpolarity	1P	B C K	1A, 2A, 3A...63A	DC250V		YCB8-63 OF: Auxiliary
			2P			DC500V		YCB8-63 SD: Alarm
			3P			DC750V		YCB8-63 MX: Shunt release
			4P			DC1000V		

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

Standards		IEC/EN 60947-2			
Number of poles		1P	2P	3P	4P
Rated current of shell frame grade		63			
Electrical performance					
Rated working voltage Ue(V DC)		250	500	750	1000
Rated current In(A)		1, 2, 3, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63			
Rated insulation voltage Ui(V DC)		1200			
Rated impulse voltage Uimp(KV)		4			
Ultimate breaking capacity Icu(KA)(T=4ms)		Pv : 6 PVn :			
Operation breaking capacity Ics(KA)		Ics=100%Icu			
Curve type		Type B, Type C, Type K			
Tripping type		Thermomagnetic			
Service life (time)	Mechanical	20000			
	Electrical	PV : 1500 PVn : 300			
Polarity		Heteropolarity			
Inline methods		Can be up and down into the line			
Electrical accessories					
Auxiliary contact		<input type="checkbox"/>			
Alarm contact		<input type="checkbox"/>			
Shunt release		<input type="checkbox"/>			
Applicable environmental conditions and installation					
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 II , Category III			
Installation method		DIN35 standard rail			
Wiring capacity		2.5-25mm <sup>2</sup>			
Terminal torque		3.5N·m			

■ Standard □ Optional – No

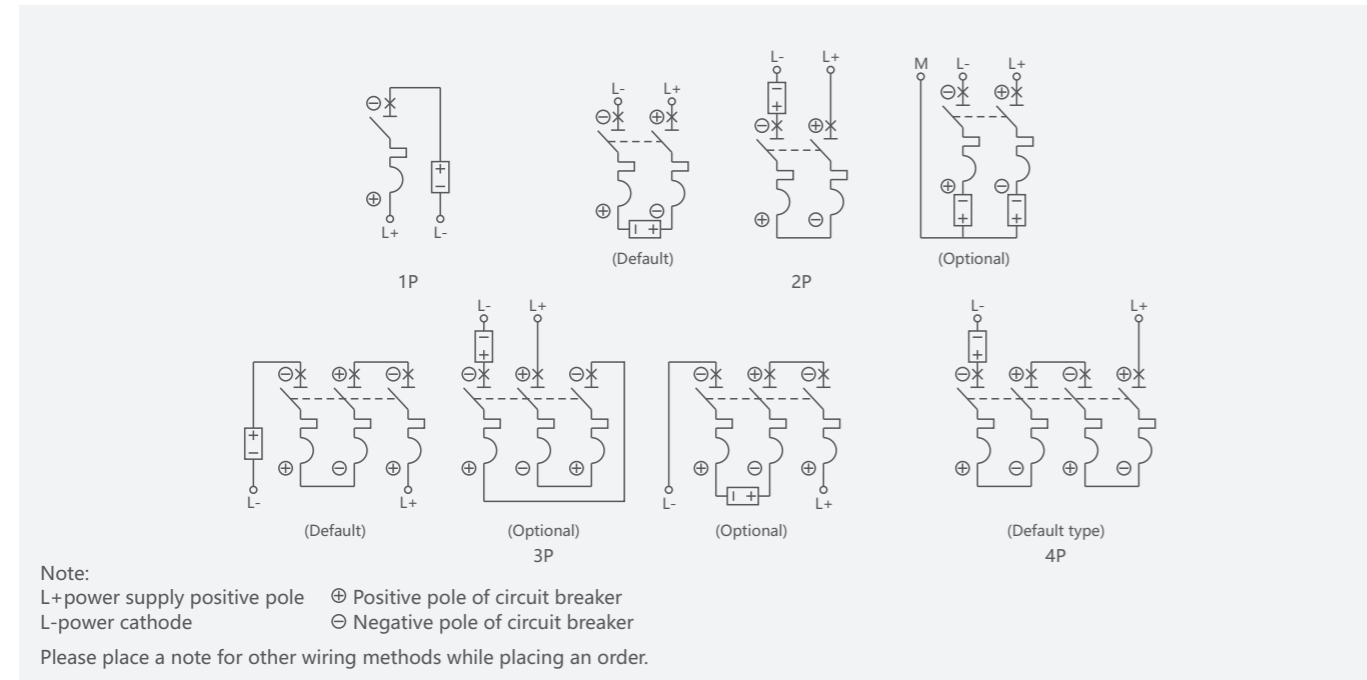
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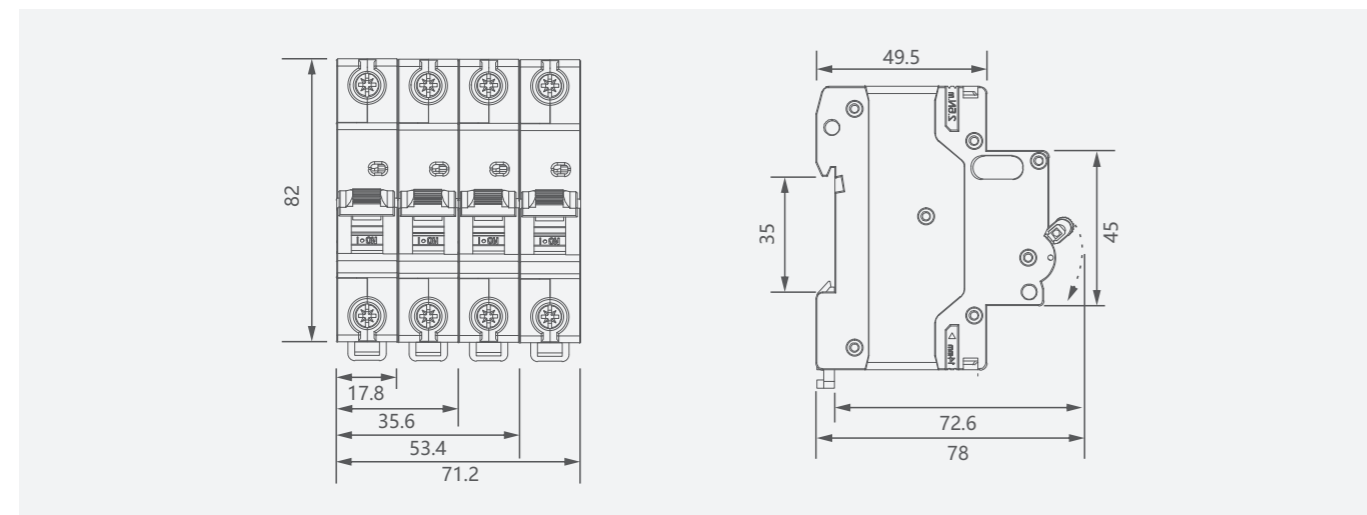
### Grounding and fault effect

Grounding type	Single-stage grounding system		Ungrounded system	
Circuit diagram				
Fault effect	Fault A	Maximum short-circuit current $I_{sc}$	Fault A	No effect
	Fault B	Maximum short-circuit current $I_{sc}$	Fault B	Maximum short-circuit current $I_{sc}$
	Fault C	No effect	Fault C	No effect

### Wiring diagram



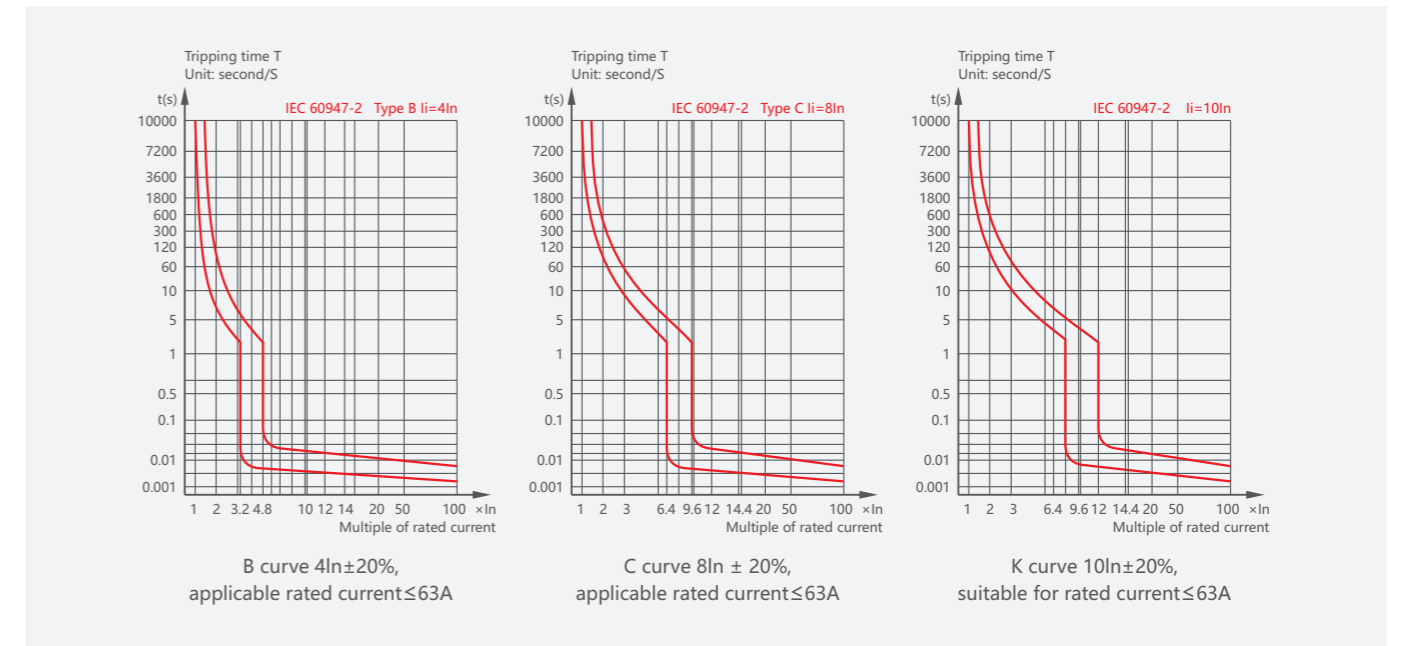
### Overall and mounting dimensions(mm)



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### Curve



### Temperature correction factor table

Current correction value used in different environments

Current correction value(A) / Rated current(A)	Environmental temperature (°C)	-35	-30	-20	-10	0	10	20	30	40	50	60	70
1	1.3	1.26	1.23	1.19	1.15	1.11	1.05	1	0.96	0.93	0.88	0.83	
2	2.6	2.52	2.46	2.38	2.28	2.2	2.08	2	1.92	1.86	1.76	1.66	
3	3.9	3.78	3.69	3.57	3.42	3.3	3.12	3	2.88	2.79	2.64	2.49	
4	5.2	5.04	4.92	4.76	4.56	4.4	4.16	4	3.84	3.76	3.52	3.32	
6	7.8	7.56	7.38	7.14	6.84	6.6	6.24	6	5.76	5.64	5.28	4.98	
10	13.2	12.7	12.5	12	11.5	11.1	10.6	10	9.6	9.3	8.9	8.4	
13	17.16	16.51	16.25	15.6	14.95	14.43	13.78	13	12.48	12.09	11.57	10.92	
16	21.12	20.48	20	19.2	18.4	17.76	16.96	16	15.36	14.88	14.24	13.44	
20	26.4	25.6	25	24	23	22.2	21.2	20	19.2	18.6	17.8	16.8	
25	33	32	31.25	30	28.75	27.75	26.5	25	24	23.25	22.25	21	
32	42.56	41.28	40	38.72	37.12	35.52	33.93	32	30.72	29.76	28.16	26.88	
40	53.2	51.2	50	48	46.4	44.8	42.4	40	38.4	37.2	35.6	33.6	
50	67	65.5	63	60.5	58	56	53	50	48	46.5	44	41.5	
63	83.79	81.9	80.01	76.86	73.71	70.56	66.78	63	60.48	58.9	55.44	52.29	

### Use of derating table at high altitude

Tripping type	Rated current(A)	Current correction factor			Example
		$\leq 2000m$	2000-3000m	$\geq 3000m$	
B, C, K	1, 2, 3, 4, 6, 10, 13, 16, 20, 25, 32, 40, 50, 63	1	0.9	0.8	The rated current of 10A products is $0.9 \times 10 = 9A$ after derating at 2500m

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#### Recommended wiring size

Wiring capacity

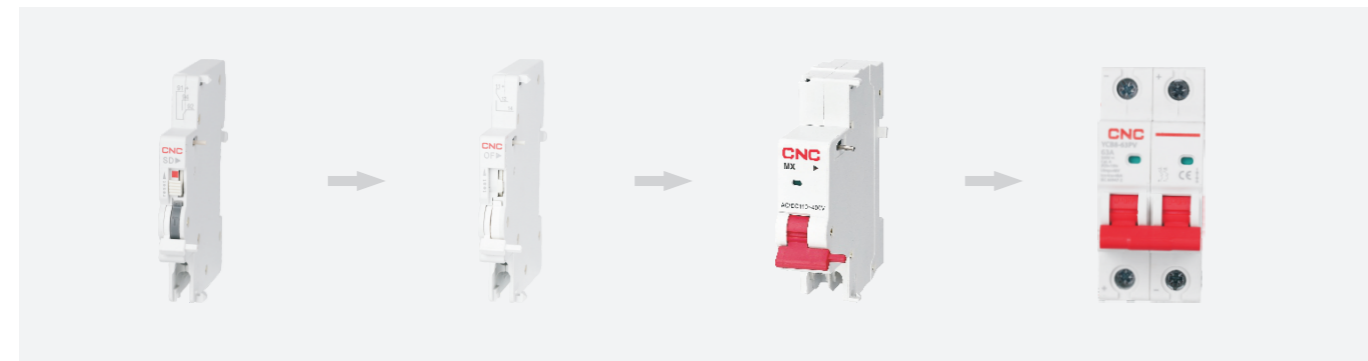
Rated current $I_n$ (A)	Nominal cross-sectional area of copper conductor(mm <sup>2</sup> )
1~6	1
10	1.5
13、16、20	2.5
25	4
32	6
40、50	10
63	16

#### Power consumption per pole of circuit breaker

Rated current $I_n$ (A)	Maximum power consumption per stage(W)
1~10	2
13~32	3.5
40~63	5

#### Accessories

The following accessories are suitable for YCB8-63PV 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+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% $U_e$ , 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

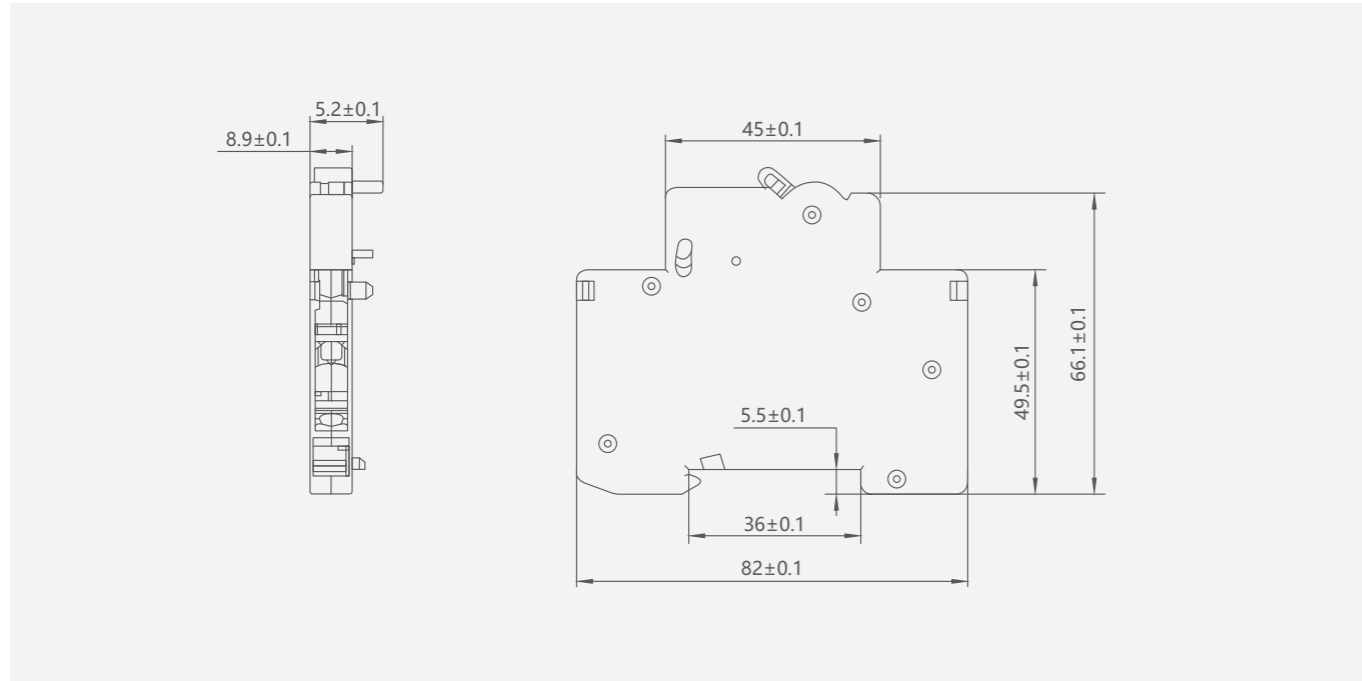
Model	YCB8-63 OF	YCB8-63 SD	YCB8-63 MX
Appearance			
Types			
Number of contacts	1NO+1NC	1NO+1NC	/
Control voltage (V AC)			110-415 48 12-24
Control voltage(V DC)			110-415 48 12-24
Working current of contact	AC-12 $U_e/I_e$ : AC415/3A DC-12 $U_e/I_e$ : DC125/2A		/
Shunt control voltage			$U_e/I_e$ : AC:220-415/ 0.5A AC/DC:24-48/3
Width(mm)	9	9	18
Applicable Environmental Conditions and Installation			
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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### Overall and mounting dimensions(mm)

OF/SD Outline and installation dimensions



MX+OF Outline and installation dimensions

