



User's Guide
SM8 HPV series
DC Molded Case Circuit Breaker for
Photovoltaic

Suntree Electric Group Co., Ltd

1. Purpose and scope of use

With the development of the solar industry, solar PV plants with large installed capacities are also growing rapidly. People also put forward higher and higher requirements on the performance of the control and protection appliances equipped in large-scale PV plants. When the power of a PV plant exceeds a certain level, circuit breakers or switch-disconnector are required, especially for the protection and isolation of the inverter, which places new demands on low-voltage components. For this reason, we have developed a new generation of SM8 series DC circuit breakers for PV applications.

SM8-630HPV series PV dedicated DC circuit breaker (hereinafter referred to as circuit breaker) is used in DC grid circuits with rated voltage DC1250V~DC1500V and rated operating current 400A~630A. This circuit breaker has overload long-time delay and short-circuit instantaneous protection functions. It is used to distribute electric energy and protect lines and power supply equipment from overload, short circuit and other fault hazards.

This circuit breaker complies with the standard:

IEC 60947- 1 IEC 60947- 2

GB 14048. 1 Low-voltage switchgear and controlgear Part 1:
General

GB 14048. 2 Low-voltage Switchgear and Controlgear Part 2:
Circuit breakers

2. Normal operational conditions

2.1 The altitude of the installation site should not exceed 2,000m;

2.2 The allowable ambient temperature is not higher than + 50°C and not lower than - 5°C; (when it exceeds + 40°C, the capacity is reduced for use, which must be negotiated with the manufacturer).

2.3 Atmospheric conditions: The relative humidity of the atmosphere should not exceed 50% at a surrounding temperature of 40°C. A higher relative humidity is allowed at lower temperatures, such as 90% at 20°C, taking into account the condensation that occurs on the product surface due to temperature changes;

2.4 Pollution degree: 3

2.5 The installation categories is Class III.

2.6 The magnetic field at the installation location should not exceed 5 times the earth's magnetic field in any direction;

2.7 In a non-explosive medium, and there is no gas and conductive dust in the medium that can corrode metals and damage insulation;

2.8 Where there is no wind and snow erosion;

2.9 Installation conditions


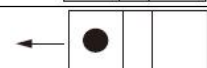
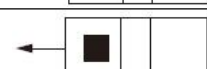






a) Can be installed horizontally and vertically;

b) There should be no obvious impact and vibration at the installation place, and it should not be installed in inflammable and explosive places.

3. Description of model

S	M8	630	H	PV /
Enterprise code	Design Serial No.	Frame size 630	high voltage	Special for PV power generation

4	+	00	630A	DC1500V
Number of poles 4:DC1250V DC1500V		See Table 3 for details of the accessory code	Rated current (400~630)	Rated operational voltage DC1250V DC1500V

Model/Specification		SM8-630HPV
Accessories code	Number of poles	
Accessory name		4
08	Alarm contact	
10	Shunt release	
20	Auxiliary contact	
40	Shunt release, auxiliary contacts	
60	Two sets of auxiliary contacts	
18	Shunt release, alarm contact	
28	Auxiliary contact, alarm contact	
48	Shunt release, auxiliary contact, alarm contact	
68	Two sets of auxiliary contacts, alarm contacts	

Shunt release control voltage: DC24V/AC230V/AC400V

4. Specifications and main technical parameters are shown in the table

Model		SM8-630HPV/4	
Rated current I_n (A)		400,500,630	
Rated insulation voltage U_i (V)		DC1500V	
Rated operational voltage U_e (V)		DC1250V / DC1500V	
Flashover distance (mm)		100	
Rated short-circuit capacity (I_{cu}) kA	ultimate breaking	DC1250V	40kA($I_{cs}= 75\% I_{cu}$)
		DC1500V	30kA($I_{cs}= 100\% I_{cu}$)
Action current value of short-circuit instantaneous release		6 I_n	
Service life (times)		5000	

Note: I_{cs} indicates the rated operating short circuit breaking capacity
 I_{cu} indicates the rated limit short circuit breaking capacity
Please consult with the manufacturer for any special requirements.

6. Ordering instructions

When ordering, please specify the model, name and rated current value of the molded case circuit breaker, as well as the quantity.

Example: SM8 - 630HPV 500A DC

Molded case circuit breakers, 50 units in quantity. Special product requirements are subject to negotiation.

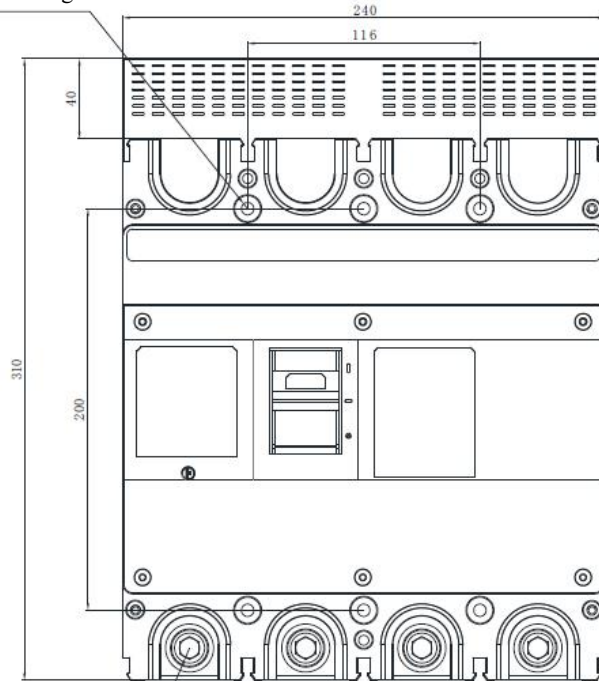
7. Company commitment

On the premise that the user abides by the use and storage conditions and the seal of the product is intact, within 18 months from the date of production of the product, if the product is damaged or cannot be used normally due to manufacturing quality problems, the company is responsible for free repair or replacement. Beyond the warranty period, repairs are required at a cost. But the damage caused by the following circumstances, even within the warranty period also for paid repair:

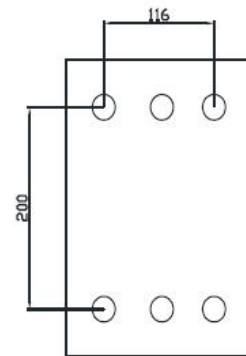
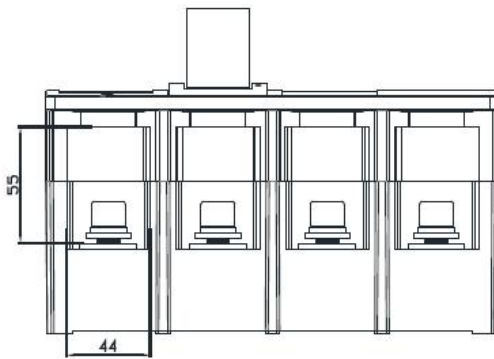
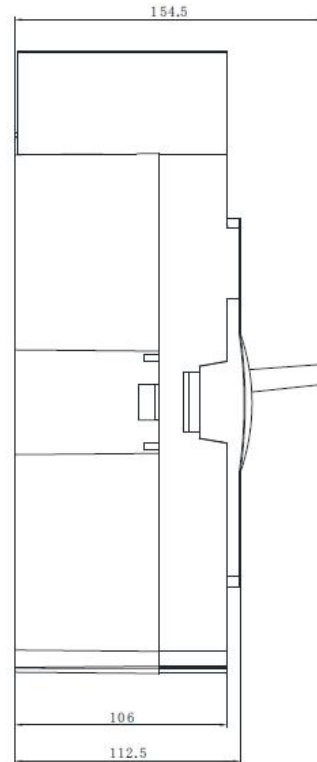
- (1) Due to improper use, maintenance and storage;
- (2) Self-modification or improper maintenance;

4P product appearance and installation dimensions

Mounting screw M6×65



Wiring bolt inner hexagon M12×35



Accessory installation

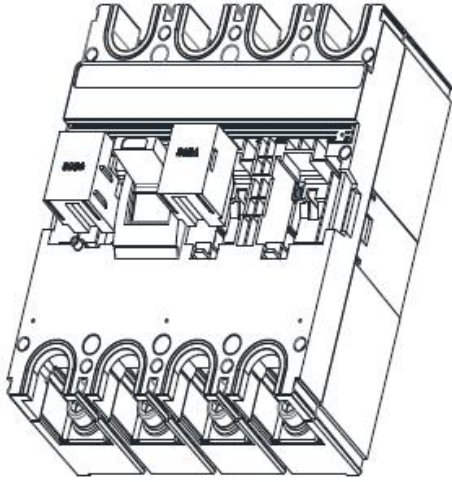


Figure 1

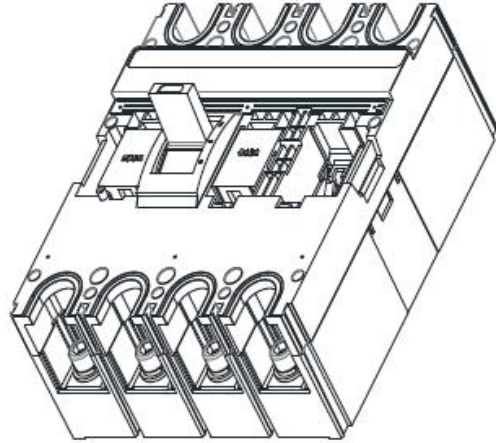


Figure 2

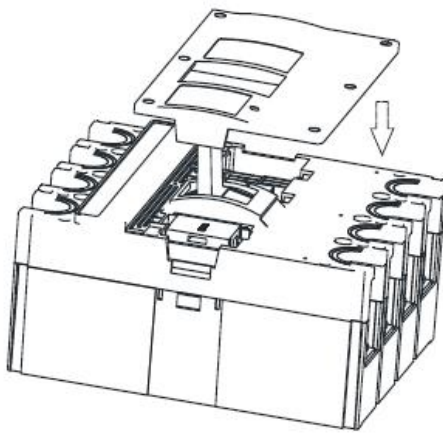


Figure 3

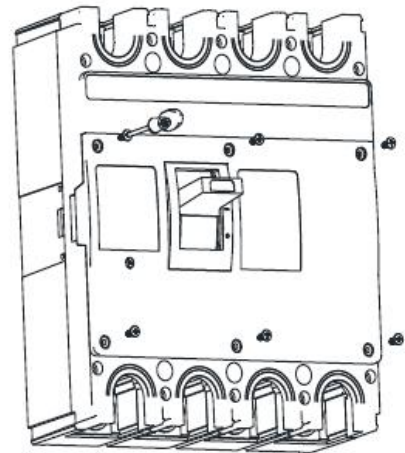


Figure 4



QUALIFIED CERTIFICATE

Inspector: _____

Inspector: 12

Inspection
date: _____

This product conforms to the standard and is allowed to leave the factory after passing the inspection.

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