



INFINITE POWER

HT Series AC/DC Power Module

SPECIFICATION



1. Product Introduction

1.1. Model Description

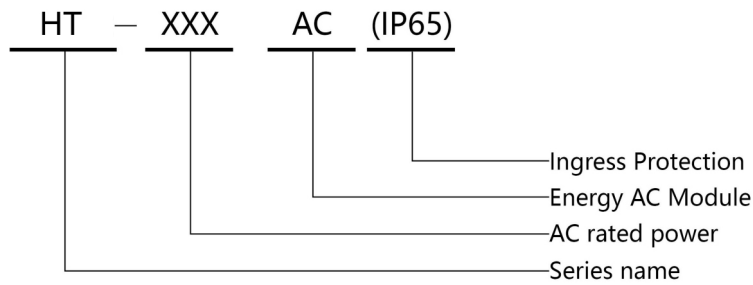


Figure 1-1 Model identification

1.2. Product characteristics

- Adopting a three-level topology, the maximum efficiency can reach 98.2% and the power quality is better.
- With an IP65 protection rating, it has stronger environmental adaptability.
- Standard rack-mounted modular design, flexible configuration, convenient maintenance, and easy expansion.
- It supports constant current, constant power, AC voltage source control, and has a black start function.
- Adopting a standard rack-mounted modular design, it is flexible in configuration, convenient in maintenance, and easy to expand.
- Compatible with three-phase four-wire systems, it can meet both off-grid and grid-connected requirements.
- Adopting patented harmonic suppression technology, it is suitable for diversified scenarios such as industrial parks and microgrids.
- It is suitable for 52s Pack and can meet various battery pack requirements.

1.3. Product parameters

The parameters of the power module of the energy storage converter are as follows:

Table 1-1 module parameters

<i>Model</i>	<i>HT-100AC(IP65)</i>	<i>HT-125AC(IP65)</i>	<i>HT-130AC(IP65)</i>
<i>Rated power</i>	<i>100kW</i>	<i>125kW</i>	<i>130kW</i>
<i>Max. power</i>	<i>110kW</i>	<i>137.5kW</i>	<i>143kW</i>
<i>DC operating voltage range</i>	<i>580~1000V (3W+PE) ; 680~1000V (3W+N+PE)</i>		
<i>DC side full load voltage range</i>	<i>625~950V (3W+PE) ; 680~950V (3W+N+PE)</i>		
<i>Max. direct current</i>	<i>160A</i>	<i>200A</i>	<i>208A</i>
<i>Rated AC voltage</i>	<i>400Vac, 3W+PE/3W+N+PE</i>		
<i>Rated frequency</i>	<i>50/60Hz (±5Hz)</i>		
<i>Rated AC current</i>	<i>144A</i>	<i>180A</i>	<i>188A</i>
<i>Overload capacity</i>	<i>110%, normal operation; 120%, 1 minute</i>		
<i>Current distortion</i>	<i>< 3% (rated power)</i>		
<i>Power Factor Adjustment Range</i>	<i>-1 leading to +1 lagging</i>		
<i>Max. efficiency</i>	<i>98.2%</i>		
<i>Dimensions (W*D*H)</i>	<i>660(without mounting lug 600)*750*245mm</i>		
<i>Weight (approx.)</i>	<i>69kg</i>		
<i>Isolation Mode</i>	<i>No isolation</i>		
<i>Ingress Protection</i>	<i>IP65</i>		
<i>Ambient temperature</i>	<i>-30°C to +60°C(derate above 45°C)</i>		
<i>Relative humidity</i>	<i>0 to 95% (no condensation)</i>		
<i>Cooling mode</i>	<i>Intelligent air-cooled</i>		
<i>Noise</i>	<i>< 70dB</i>		
<i>Altitude</i>	<i>3000m (> 3000m reduction)</i>		
<i>Communication port</i>	<i>RS485/CAN2.0/Dry Contact/Ethernet</i>		



Note

- When the module is operating in grid-connected mode with 100% unbalanced power control or in off-grid mode with 100% unbalanced load, it is recommended that the DC input voltage be greater than 750V.

1.4. Product graphs

The following figure shows the ambient temperature derating curve:

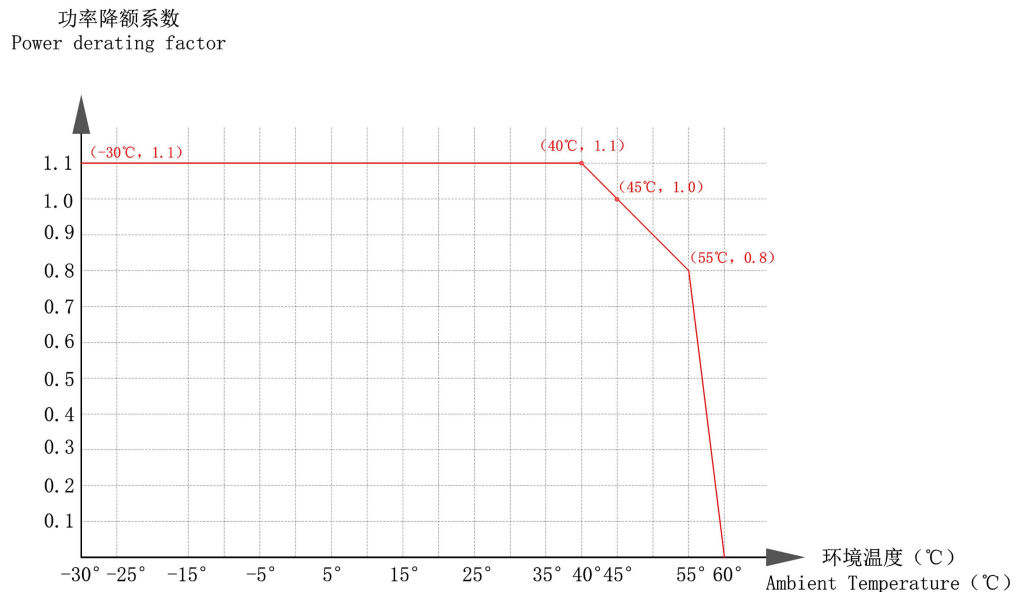


Figure 1-2 Ambient Temperature Derating Curve

As shown in the following figure, it is the derating curve of different altitude:

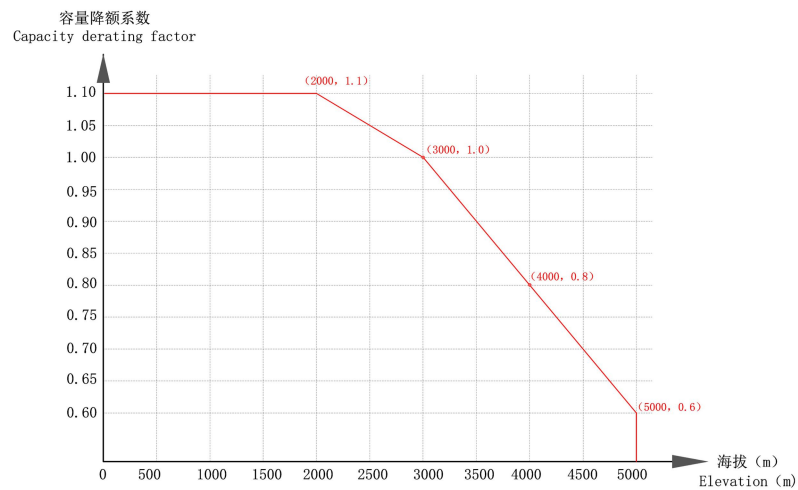
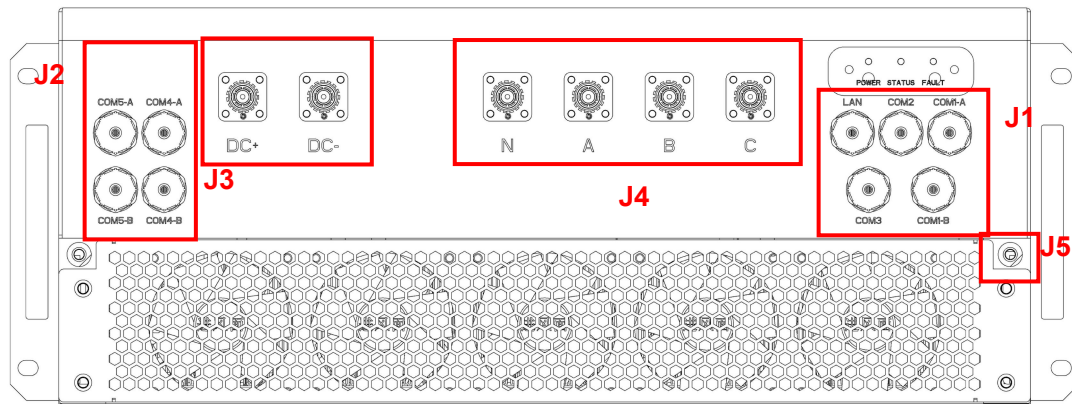


Figure 1-3 Altitude Derating Curve

1.5. Product appearance



J1-PCS communication secondary port

J2-PCS parallel port

J3-Module DC primary port

J4-Module AC primary port

J5-Ground port

Figure 1-4 Power module(front)

1.6. Interface instructions

1.6.1. PCS communication secondary port (J1)

It consists of EMS communication interface, BMS communication interface, Ethernet interface, dry contact interface.

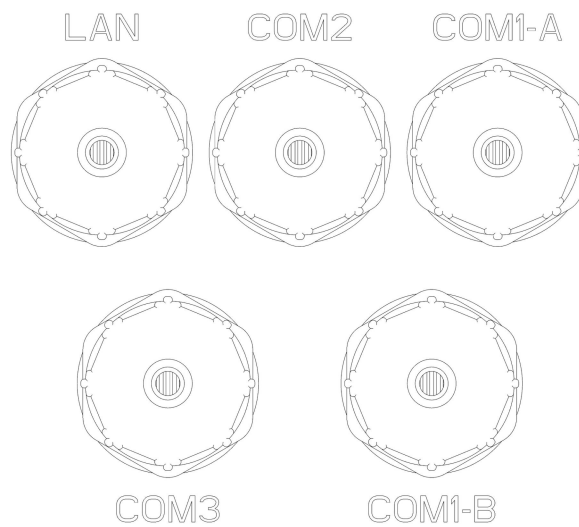


Figure 1-5 PCS communication secondary port

Table 1-2 PCS communication secondary port description

No.	Name	Description
1	LAN	PCS Ethernet port
2	COM1-A COM1-B	PCS EMS and 485 communication port
3	COM2	PCS BMS and CAN communication port
4	COM3	Dry contact port

Table 1-3 COM1-A、COM1-B Interface Description

Signal Name	Standard network cable sequence 568B Colour	Pin Number	Function Description
CANH_COM	White Orange	1	Communication EMS
CANL_COM	Orange	2	
RS485A+	White Green	3	RS485 communication for EMS
+12V_ARM	Blue	4	Communication Power (Provides power to EMS, 1A)
+12V_ARM	White Blue	5	
RS485A-	Green	6	RS485 communication for EMS
GND_ARM	White Brown	7	Communication power ground
GND_ARM	Brown	8	



Note

- COM1-A, COM1-B two ports, the two are in parallel relationship, the module through the interface of external communication. When multiple modules are in parallel, it is necessary to connect the interface of each energy storage module to the interface of another module through the parallel communication cable.

Table 1-4 COM2 Interface Description

Signal Name	Standard network cable sequence 568B Colour	Pin Number	Function Description
CANH_BAT	White Orange	1	Communication BMS
CANL_BAT	Orange	2	

Table 1-5 COM3 Interface Description

<i>Signal Name</i>	<i>Standard network cable sequence 568B Colour</i>	<i>Pin Number</i>	<i>Function Description</i>
<i>RS485C+</i>	<i>White Orange</i>	<i>1</i>	<i>485 communication for software oscilloscope</i>
<i>RS485C-</i>	<i>Orange</i>	<i>2</i>	
<i>OUT1_COM</i>	<i>White Green</i>	<i>3</i>	<i>Dry contact output port (Contact capacity 24VDC, 800mA)</i>
<i>GND_OUT</i>	<i>Blue</i>	<i>4</i>	<i>Dry contact ground</i>
<i>IN2</i>	<i>White Blue</i>	<i>5</i>	<i>Dry contact input port (Input port is passive dry contact, high resistance state or ground)</i>
<i>OUT1_NO</i>	<i>Green</i>	<i>6</i>	<i>Dry contact output port (Contact capacity 24VDC, 800mA)</i>
<i>GND_OUT</i>	<i>White Brown</i>	<i>7</i>	<i>Dry contact ground</i>
<i>IN1</i>	<i>Brown</i>	<i>8</i>	<i>Dry contact input port (Input port is passive dry contact, high resistance state or ground)</i>



Note

- The dry contact input is used for BMS faults and can be selected to be enabled or disabled, and the fault state can be selected to be either a high resistance state or ground.
- OUT_NO and OUT_COM contact voltage range 0~24VDC.

The indicator lights consist of the power indicator (POWER), status indicator (STATUS), and fault indicator (FAULT).

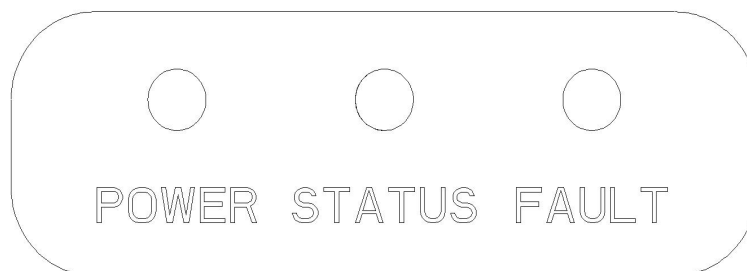


Figure 1-6 Indicator Light

Table 1-6 Indicator Light Description

<i>Indicator Light</i>	<i>Status</i>	<i>Status Description</i>
<i>Power Indicator (Red)</i>	<i>Constantly On</i>	<i>Module auxiliary power supply is normal</i>
	<i>Off</i>	<i>Abnormal module auxiliary power supply</i>

Status Indicator (Green)	Constantly On	Module operating normally
	Off	Module shutdown
	Blinking	Module entering program burning mode
Fault Indicator (Red)	Constantly On	The module has a shutdown fault (the module shuts down when the fault occurs), refer to the fault list for more details
	Blinking	The module has a non-stop alarm (the module does not shut down during the alarm), refer to the fault list for details
	Off	No module failures, no alarms

1.6.2. PCS parallel port (J2)

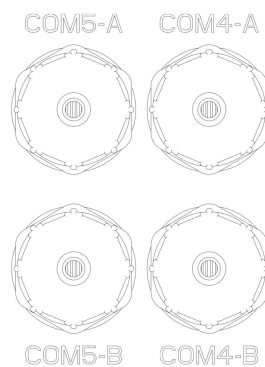


Figure 1-7 PCS parallel port

Multi-module paralleling requires the use of a paralleling cable to connect this interface of each module to this interface of another module.

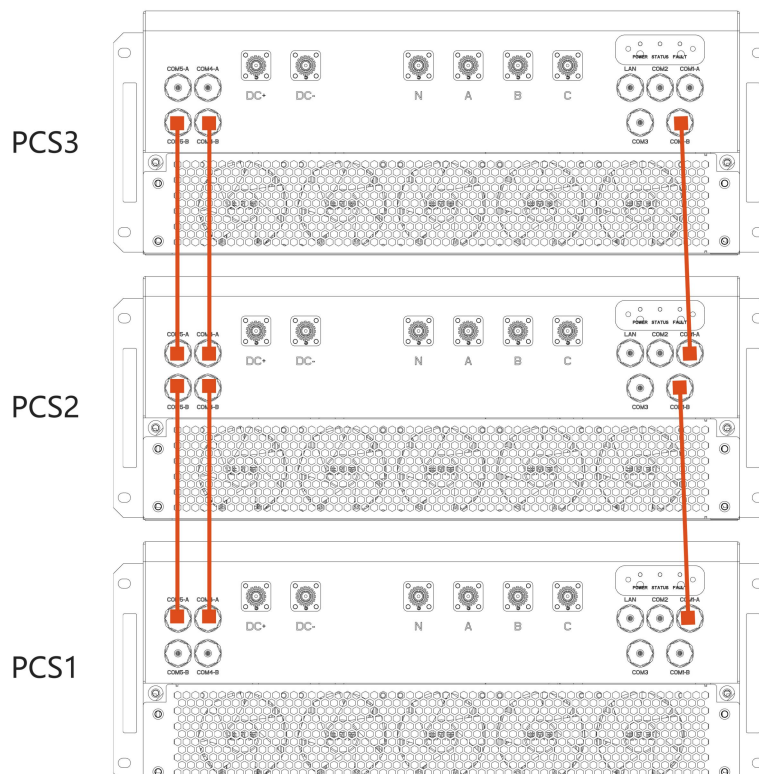


Figure 1-8 Schematic diagram of multi-module parallel connection and cabinet port connection



Note

- COM4-A and COM4-B are multi-module parallel interfaces, while COM5-A and COM5-B are multi-cabinet parallel interfaces. When connecting to other modules in parallel, they are interconnected in a daisy-chain configuration.
- When building a modular system, only the parallel lines of the same type of modules need to be connected in parallel. For example, DC/AC is connected to the parallel lines of DC/AC modules.
- For specific modules, such as STS module, its parallel line should be connected to the parallel line of AC module.
- When multiple modules are paralleled, the paralleling communication line is shipped with the energy storage module.

1.6.3. Module DC primary port (J3)

The module DC primary ports are connected using plug-in cables. From left to right are orange terminal DC+, black terminal DC-.

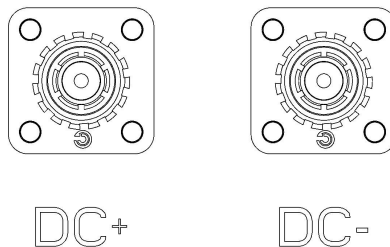


Figure 1-9 Module DC primary port



Note

- The positive and negative sides of the DC side must not be reversed, and they must be connected correctly according to the polarity of the module. Otherwise, the module will exhibit a low DC voltage fault.

1.6.4. Module AC primary port (J4)

The module AC primary ports are used for the power interface (see appendix for connector information). From left to right, they are N, A, B and C.

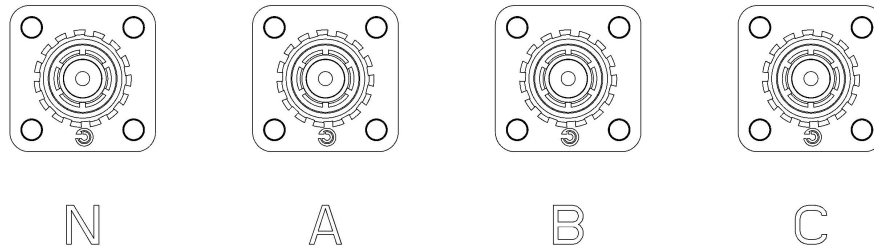


Figure 1-10 Module AC primary port



Note

- The phase sequence of the grid cannot be accessed confusingly, and must be connected in accordance with the phase sequence of the AC side of the module, otherwise the module will have a wrong phase fault in the grid.
- For three-wire applications, single-unit systems need to connect the grid ABC wires to the ABC terminals of the modules, with the N wires dangling. The N wires between modules of a multi-parallel system need to be connected together, but not to the N wire of the grid.
- For four-wire applications, single-unit systems need to connect the four ABCN wires of the grid to the ABCN terminals of the modules. The N-wires between modules of a multi-parallel system need to be connected together and to the N-wires of the grid.

1.7. Install the energy storage module

1.7.1. Air intake

Inlet air volume: 8.2m³/min. (Wind pressure conditions: Pfa [Pa] = 305 or Pfa_1.2 [IN H2O])



Note: It is recommended that the cabinet be equipped with an exhaust fan at the air outlet of the cabinet.

1.7.2. Installation Dimensions

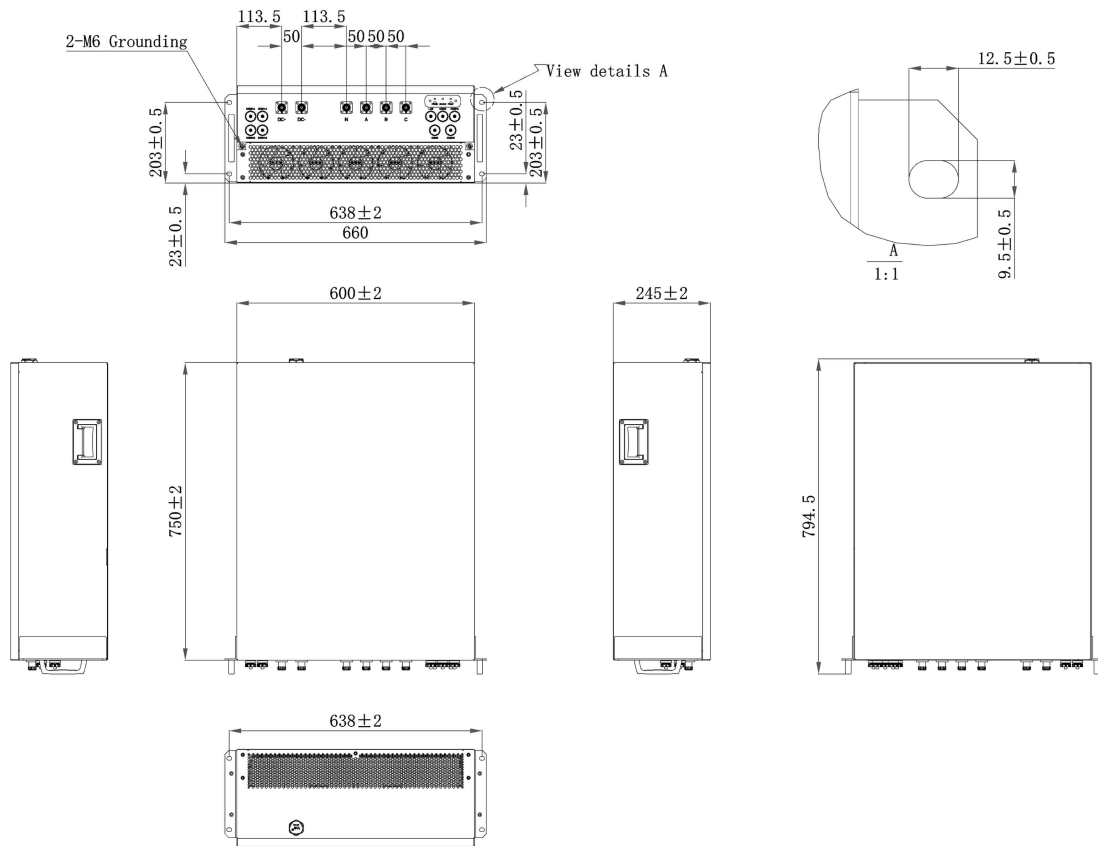


Figure 1-11 Product Installation Dimensions (Unit: mm)

Installation Steps



Note

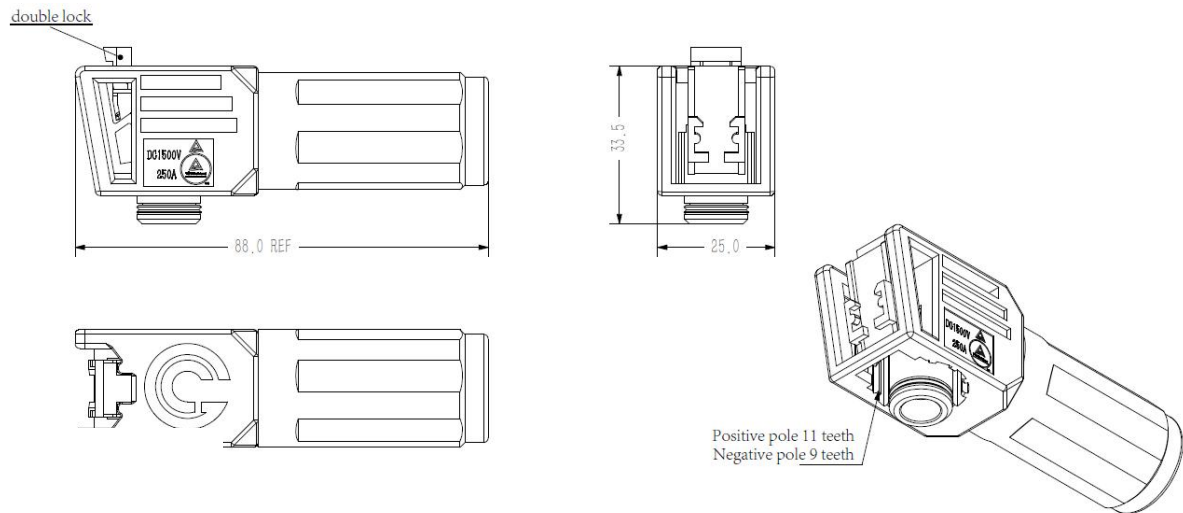
- It is important to ensure that all the mounting holes on the panel are securely tightened with screws.

Attachment

1. Terminal product specification

Attachment

1、Terminal product specification



1. Electrical performance:
 - 1.1 Rated current 250A, rated voltage 1500V DC, temperature rise $\leq 45K$;
 - 1.2 Withstand voltage 6800V AC;
 - 1.3 Insulation resistance $> 5000 M\Omega$;
 - 1.4 Contact resistance $< 0.5 m\Omega$;
2. Mechanical properties:
 - 2.1 single core;
 - 2.2 Minimum 100 times of insertion and removal;
 - 2.3 Insertion force 100N MAX;
 - 2.4 Pulling force $> 10N$;
 - 2.5 When plugging in, the plug and socket should not interfere with each other or get stuck.;
3. Environmental requirements:
 - 3.1 Flame retardant rating: UL94V-0;
 - 3.2 Protection rating: IP67 after male and female connectors are plugged together;
 - 3.3 Operating environment: $-40^{\circ}C$ to $+125^{\circ}C$;
 - 3.4 Environmental protection: Compliant with RoHS requirements;
4. Materials and Surface Treatment:
 - 4.1 Shell: PA66+25%GF;
 - 4.2 Metal: Purple copper T2, silver-plated $120\mu m$;
 - 4.3 Rubber pad: Silicone rubber;