

HT Series STS Switching Module

SPECIFICATION



1. Product Introduction

1.1. Model Description

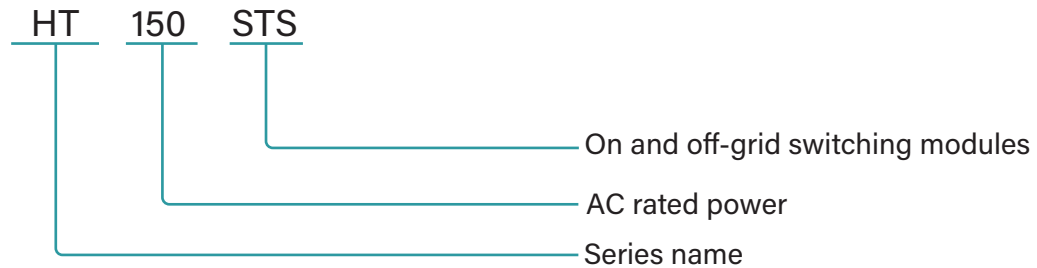


Figure 1-1 Model identification

1.2. Product characteristics

- The maximum efficiency can reach 99%, and the power quality is better.
- Intelligent grid-connected and off-grid switching, switching time <10ms.
- Standard rack-mounted modular design, flexible configuration, convenient maintenance, and easy expansion.

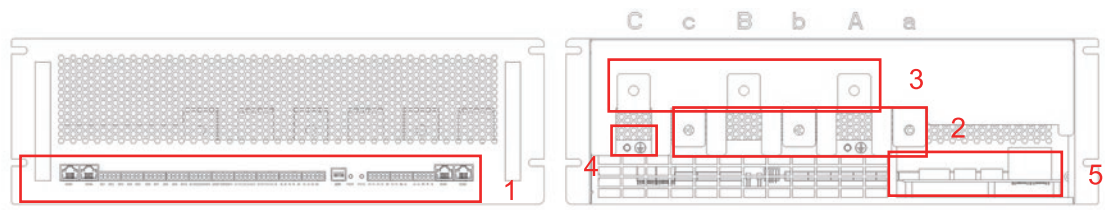
1.3. Product parameters

The parameters of the STS power module are as follows:

Table 1-1 STS module parameters

Model	HT-150STS
<i>Rated power</i>	150kW
<i>Maximum power</i>	165kW
<i>Rated AC voltage</i>	400Vac, 3W+PE
<i>Rated frequency</i>	50/60Hz (± 5 Hz)
<i>Rated AC current</i>	216A
<i>Switching time</i>	< 10ms
<i>Size (W * D * H)</i>	483*600*150mm
<i>Weight (approx.)</i>	25kg
<i>Protection level</i>	IP20
<i>Operating temperature</i>	-25°C~+60°C (with derating at temperatures above 45°C)
<i>Relative humidity</i>	0~95% (No condensation)
<i>Cooling mode</i>	Intelligent air cooling
<i>Noise</i>	< 70dB
<i>Altitude</i>	3000m (> 3000m reduction)
<i>Communication interface</i>	CAN

1.4. Product appearance



- (1) Signal interface
- (2)Grid interface(From left to right, a, b, c)
- (3)PCS interface(From left to right,A, B, C)
- (4) grounding hole
- (5) External power supply interface

Figure 1-2 HT-150STS Modules

1.5. Interface instructions

1.5.1. Signal interface instructions

The module signal interface is composed of a dial switch, an indicator light, a phoenix terminal and an RJ45 terminal.



Figure 1-3 Signal interface

Table 1-2 Signal interface Description

Serial number	Name
1	Parallel interface
2	Output switch quantity (DO1-DO10)
3	Input switch quantity (DI1-DI19)
4	Empty
5	Empty
6	Dip switch
7	Indicator light
8	Current sampling interface
9	Matching Resistance
10	RJ45 interface (CAN communication interface)

1.5.1.1.Parallel interface Description

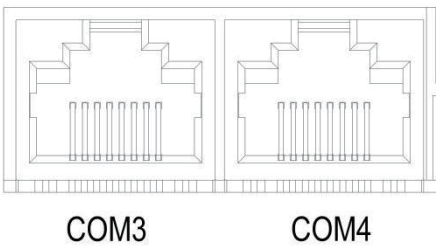


Figure 1-4 Parallel interface

Table 1-3 Parallel interface description

<i>Serial number</i>	<i>Name</i>
<i>COM3</i>	<i>Multi-module parallel interface</i>
<i>COM4</i>	<i>Multi-cabinet parallel interface</i>

Multi-module paralleling requires the use of a paralleling cable to connect the interface of the STS to the interface of one of the AC modules.

1.5.1.2.DO output interface

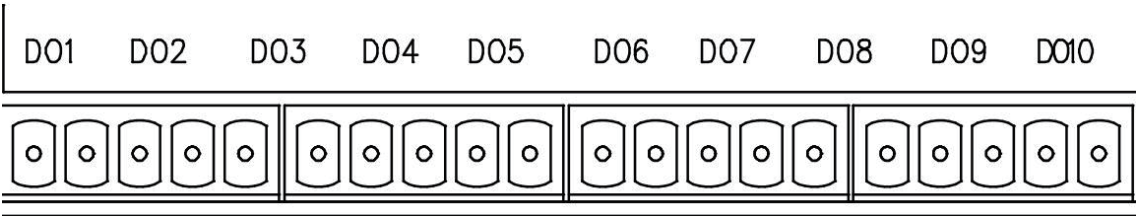


Figure 1-5 Output switch quantity

Table 1-4 Output switch quantity interface description

<i>Label</i>	<i>Status Description</i>
<i>DO1</i>	<i>DC/AC side switch tripping</i>
<i>DO2</i>	<i>Transformer pre-charging control</i>
<i>DO3~DO10</i>	<i>Empty</i>



Note

- The DO contact capacity is AC220V/1A, it is recommended to use the DO interface to drive the intermediate relay to control external devices.

1.5.1.3.DI input interface

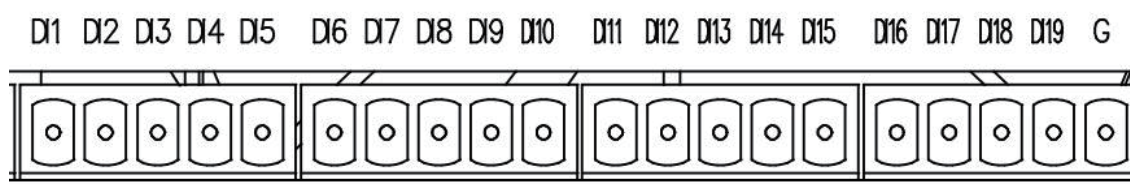


Figure 1-6 Input switch quantity

Table 1-5 Input switch quantity interface description

Label	Status Description
DI1	Load switch status (normally open when switch is open)
DI2	Oil machine switch status (normally open when switch is open)
DI3	Grid switch status (normally open when switch is open)
DI4	Photovoltaic switch status (normally open when switch is open)
DI5	Battery switch status (normally open when switch is open)
DI6~DI9	Empty
DI10	External EPO signal (normally open)
DI11	EMS fault signal (normally closed, fault opens)
DI12	Transformer over-temperature fault (normally closed, fault opens)
DI13	Empty
DI14	Battery fault (normally closed, fault opens)
DI15~DI17	Empty
DI18	By-pass switch status (normally open when switch is open)
DI19	Empty
G	Common terminal



Note

- The DI input signal must be a passive dry contact signal.

1.5.1.4.Dip switch

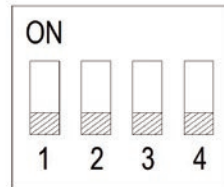


Figure 1-7 Dip switch

The back of each key of the dip switch has two pins, one at the top and one at the bottom. When the switch is set to ON, it is 1, and when it is set to OFF, it is 0. Therefore, there are 16 hardware addresses that can be set.

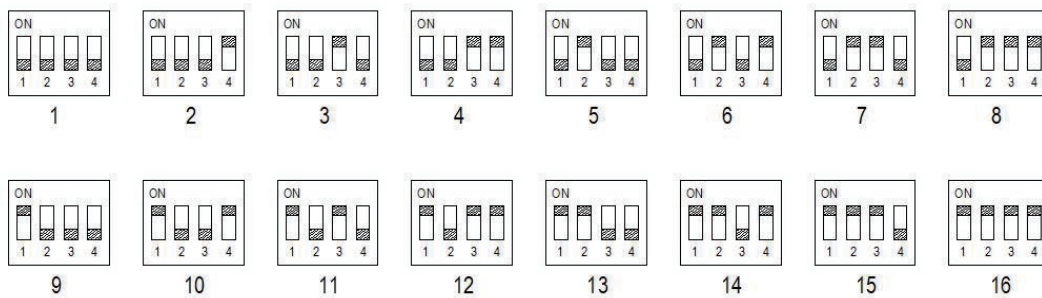


Figure 1-8 Dip switch setting address



Note

- The default factory address of the Monet-150STS module is 1.
- When multiple modules are running in parallel, different hardware addresses must be set.

If two modules have the same hardware address, there will be a module address conflict, making it impossible to correctly identify the number of parallel modules, and ultimately affecting the normal operation of the modules.

1.5.1.5.Indicator light

The indicator light consists of a power indicator light (POWER) and a status indicator light (STATUS).



Figure 1-9 Indicator light

Table 1-6 Indicator light description

<i>Indicator light</i>	<i>Status</i>	<i>Status statement</i>
<i>Power Indicator (red)</i>	<i>It's always on</i>	<i>Normal state, module without fault</i>
	<i>Twinkle</i>	<i>Module failure, please refer to the fault list for details</i>
<i>Status Indicator Light(green)</i>	<i>It's always on</i>	<i>Module is operating normally</i>
	<i>Twinkle</i>	<i>Module enters programming mode</i>

1.5.1.6.Current sampling interface

The interfaces of CT1, CT2, and CT3 connect Hall sensors. Hall sensors can be used to collect current signals in the circuit and convert them into digital signals that can be processed by computers. Through these interfaces, the STS module can perform high-precision and high-reliability current sampling of the circuit.

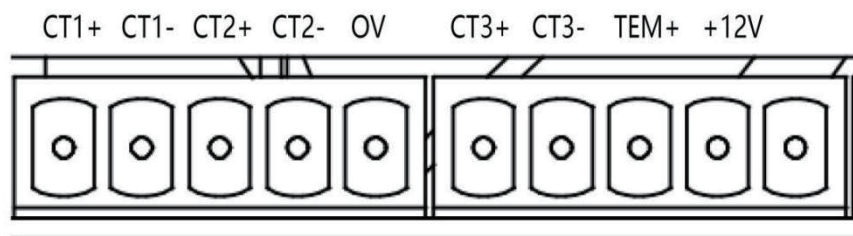
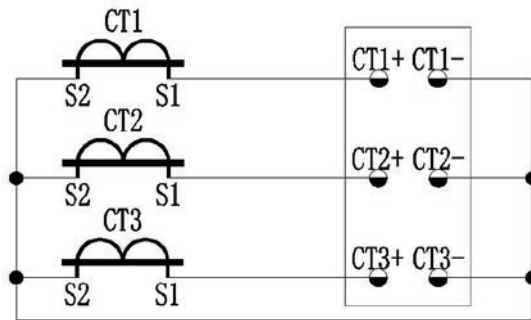


Figure 1-10 Current sampling interface: Current sampling interface

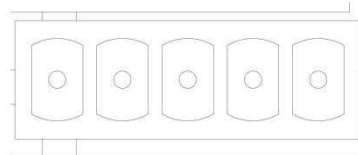


Note

- HT-150STS requires a current transformer with a ratio of 300:1.
- CT1+,CT1-,CT2+,CT2-,CT3+,CT3- interfaces are connected to the secondary current side and can withstand up to 1A current.



1.5.1.7. Matching Resistance



A1+ A1- R+ R- G

图 1-1 Matching Resistance interface

表 1-1 Matching Resistance interface instructions

<i>Serial number</i>	<i>Definition</i>
<i>A1+</i>	<i>NA</i>
<i>A1-</i>	<i>NA</i>
<i>R+</i>	<i>CAN Circuit Matching Resistor</i>
<i>R-</i>	<i>CAN Circuit Matching Resistor</i>
<i>G</i>	<i>power ground</i>



Note

- CAN circuit matching resistors are only required to short R+ and R- of the STS when multiple modules (more than 2) are in parallel.

1.5.1.7. Communication interface

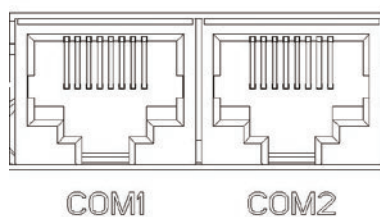


Figure 1-11 RJ45 interface

There are two RJ45 interfaces, and they are connected in parallel. The module communicates with the outside through this interface. When multiple modules are running in parallel, each energy storage module's interface needs to be connected to another module's interface using a parallel communication line. Each RJ45 interface has pins from left to right, numbered 1 to 8. The definitions of each pin are as follows:

Table 1-7 RJ45 interface instructions

<i>Serial number</i>	<i>Definition</i>
<i>1</i>	<i>CAN-H</i>
<i>2</i>	<i>CAN-L</i>
<i>3</i>	<i>N/A</i>
<i>4</i>	<i>+12V power</i>
<i>5</i>	<i>+12V power</i>
<i>6</i>	<i>N/A</i>
<i>7</i>	<i>Power Ground</i>
<i>8</i>	<i>Power Ground</i>



Note

- DC12V power supply can only output 1A current at most, exceeding this value may lead to DC12V voltage instability, which can cause machine abnormality in serious cases.
- CAN communication with 1, 2-port cable, the remaining 3 ~ 8-port network cable needs to be insulated to ensure circuit safety and avoid potential risks such as short circuit.
- The parallel communication cable is shipped with the energy storage module.

1.5.2. Grid and PCS interface description

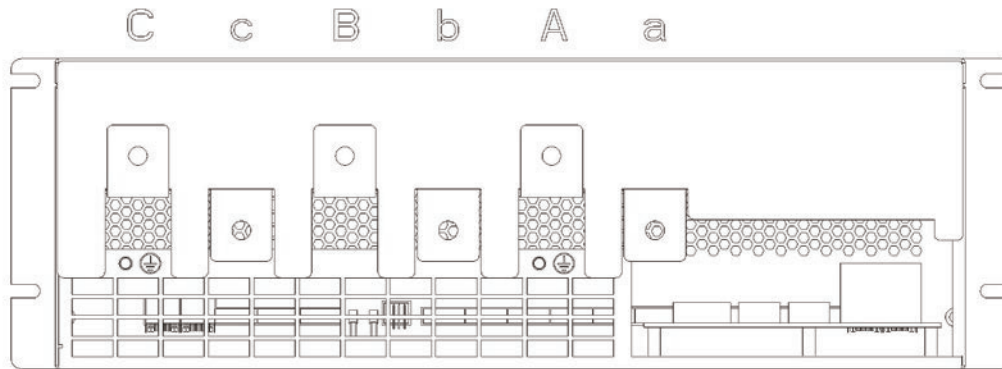


Figure 1-12 Grid and PCS Interface (150STS)

The grid interface uses a copper plate connection, and the incoming cable is secured with M8 screws. From left to right, they are labeled a, b, c.

The PCS interface also uses a copper plate connection, and the incoming DC is secured with M8 screws. From left to right, they are labeled A, B, C.

1.5.3. External power supply interface description

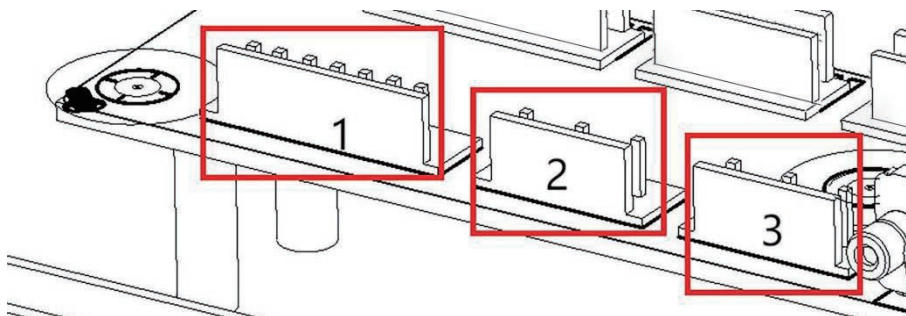


Figure 1-13 External power supply interface description

Box 1 is the AC power supply interface, from left to right are 'N, empty, empty, empty, empty, empty, empty' .

Box 2 is the DC bus power supply interface, from left to right are ' -, empty, +' .

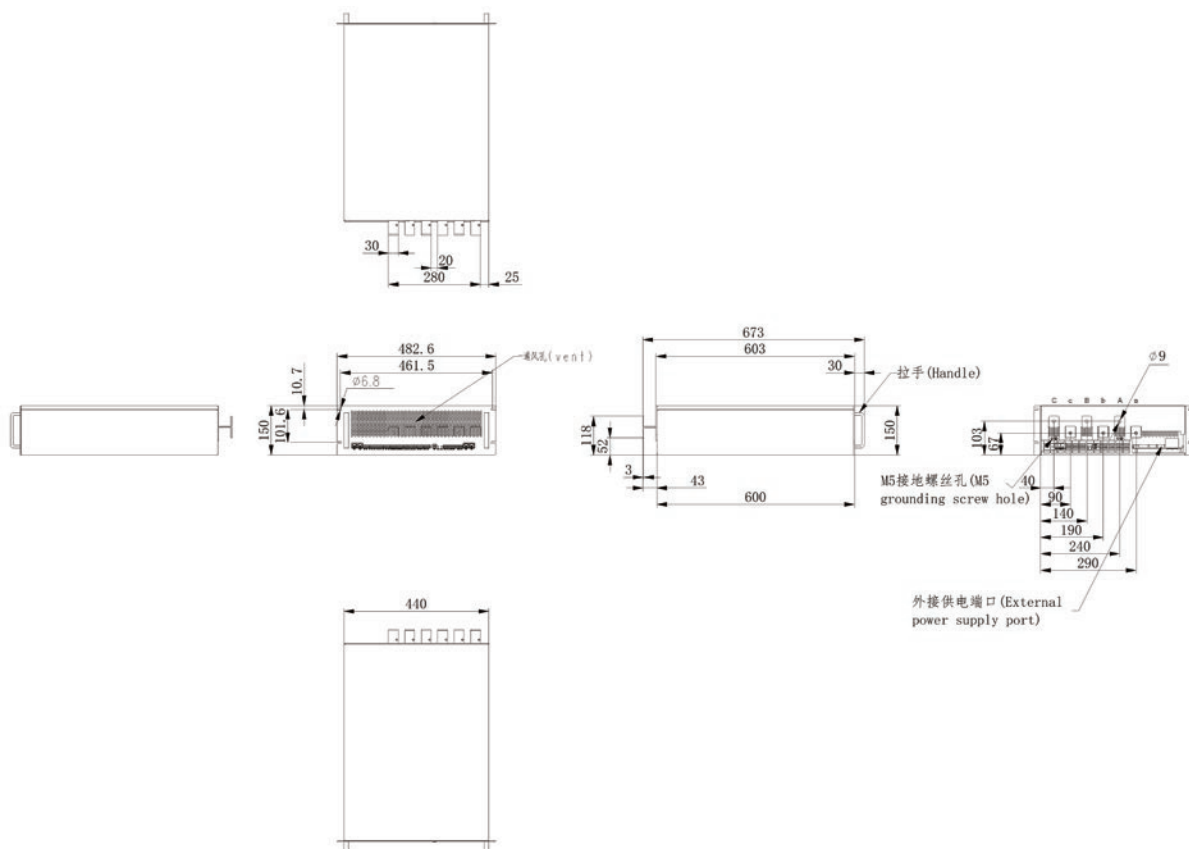
Box 3 is the photovoltaic power supply interface, from left to right are ' -, empty, +' .

1.6. Install the energy storage module

1.6.1. Air intake volume

150STS Air intake volume: 3.0m³/min, (Wind pressure conditions:Pfa [Pa]=305 or Pfa_1.2 [IN H2O])

Note: It is recommended to install an exhaust fan at the air outlet of the cabinet for ventilation inside the cabinet.



Note

- It is essential to ensure that all installation holes on the panel are securely fastened with screws.

Step 1: Slowly push the module into the slot.

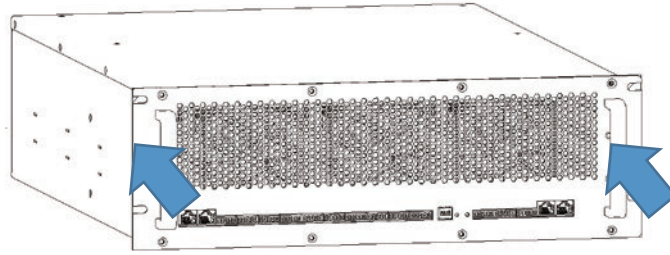


Figure 1-15 Install the module

Step 2: Tighten and secure the screws around the panel.

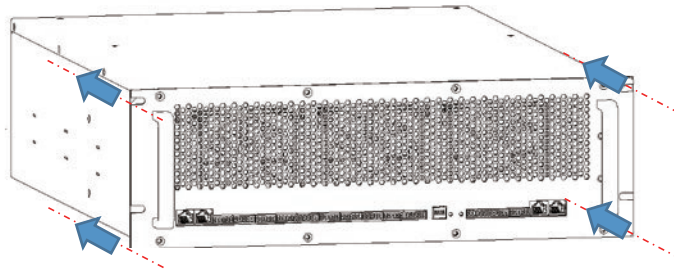


Figure 1-16 Fastening module

Step 3: It is recommended that it be mounted securely in the fixed bay of the cabinet using clips to prevent wobbling.

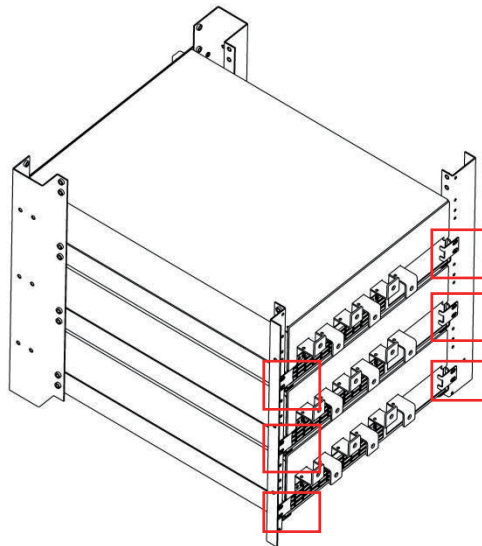


Figure 1-17 Module in Cabinet Fixed Snap Location



Note

- When installing the module independently, ensure that the module ground terminal is well grounded.