

Quick Installation Guide

Sinexcel Electric Co., Ltd.

Chapter 1: Safe Operation Guide

Welcome to choose our Sinexcel 400V/480V/600V/690V Active Harmonic Filter System (hereinafter referred to as AHF). Please read the safety instructions and correct using methods carefully before using. The safety instructions record the important content which can make you use the products in a safe and correct manner, and prevent you from being damaged and loss of properties. After reading, please save it carefully, so that all users of this product can read it at any time.

1.1. Notes for safety

- The Active Harmonic Filter (AHF) is applicable to industrial occasion, in parallel connection with harmonic source in power grid and serving the purpose of harmonic suppression.
- Do not expose it to where rain or moisture is heavy, and keep it away from combustible liquid, gas or explosive.
- Reserve enough space before and after the equipment, so as to maintain good conditions for ventilation and professional maintenance.
- Reduce the risk of fire and electric shock. Installation must be done by well-trained and qualified personnel in a controllable environment.
- Reduce the risk of electric shock. Any maintenance work must be carried out by qualified technical personnel; all power must be cut off before maintenance.
- To prevent high voltage risk, the discharge time for DC capacitance should be above 5 minutes. Make sure the operation is performed after full discharge.
- Reduce the risk of electric shock. Read the user guide carefully before supplying the equipment with power, and keep the guide as permanent reference.

1.2. Notes for wiring

- Good grounding is required to prevent any risk from leakage current.
- Compensation capacity and current-carrying capacity must be taken into full

consideration for wiring.

- Inlet wire needs to be connected with protection device.
- Protection device capacity must be supportive of (A)SVG capacity.

1.3. Notes for use

- The AHF is used to compensate power harmonic, so AHF capacity should be considered in accordance with harmonic content in case that insufficient capacity affects the result of compensation.
- For harmonic suppression, external harmonic current is required to detect CT.
- To ensure AHF has good reliability and to avoid overheat, do not block or cover the air inlet/outlet.
- Make sure the working temperature is ranged between -10°C and 40°C . AHF will stop working if beyond the range.

1.4. Notes for storage

- Seal AHF with its original packing materials in case of damage caused by rat invasion.
- If you don't install AHF immediately after you receive it, do store it in a dry, well-ventilated indoor environment; keep the temperature between -40°C ~ 70°C , and relative humidity between 5%~95%.

Chapter 2: System Introduction

AHF system consists of AHF power module, monitoring unit, power distribution unit and external CT. The internal module detects load current through external CT and extracts the harmonic component requiring compensation. Dominant power controller controls dominant power circuit in accordance with such information and sends reversed harmonic current to offset loaded harmonic component.

The monitoring unit including two indicators (Run and Alarm) and one emergency button. Each standard cabinet contents up to 5 modules; all cabinet has HMI unit which displays information for each module and control the work of each module. See figure 1 to know system framework and figure 2 to know system layout.

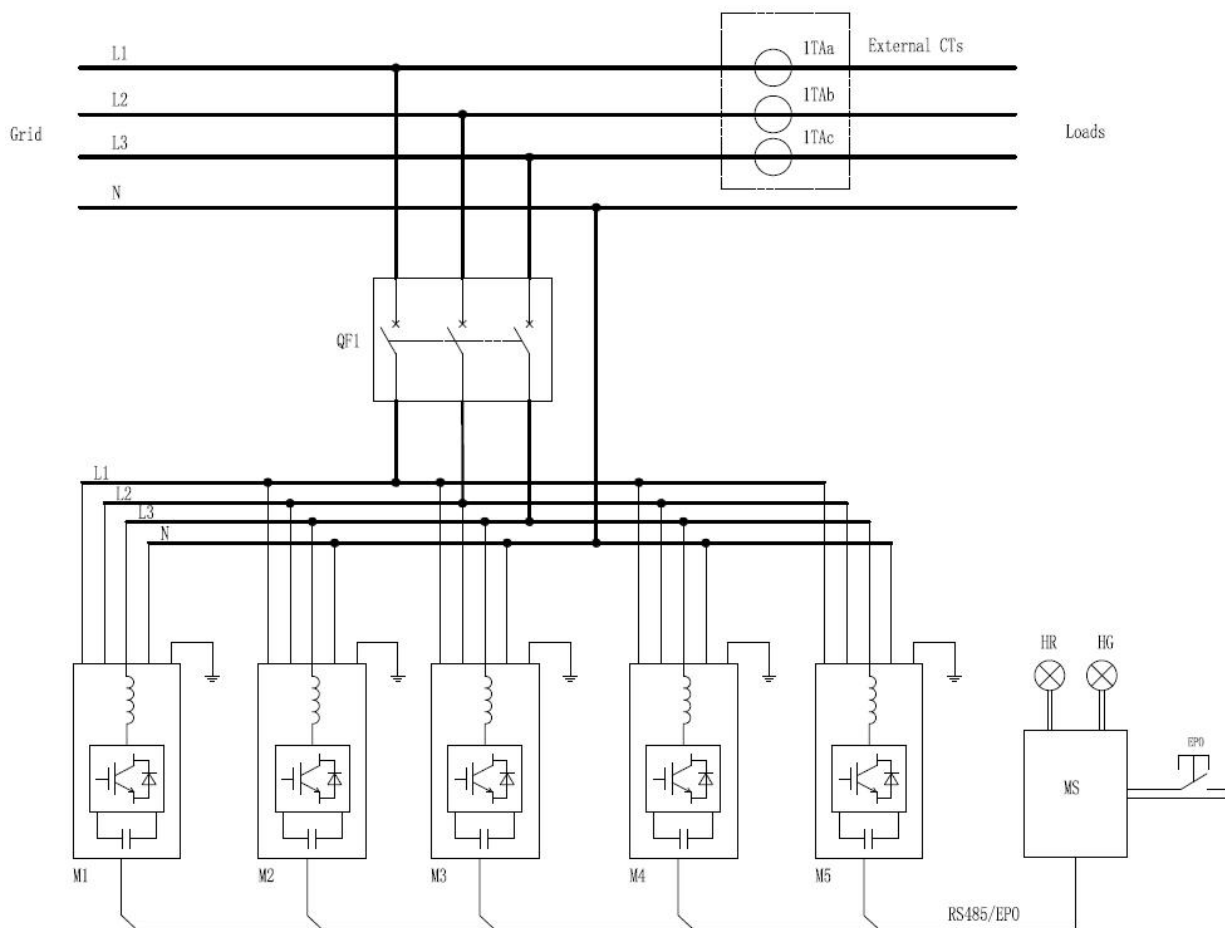
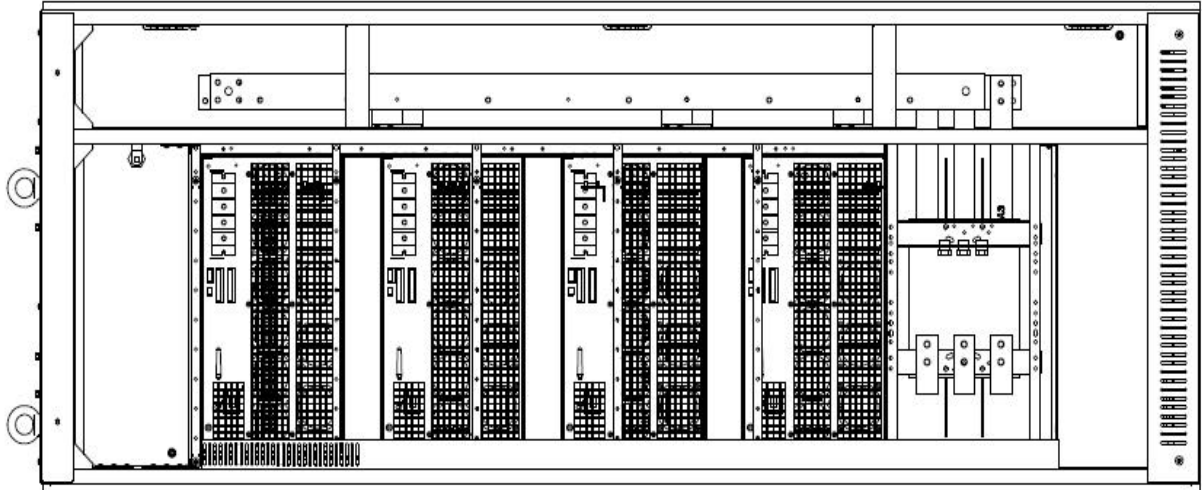
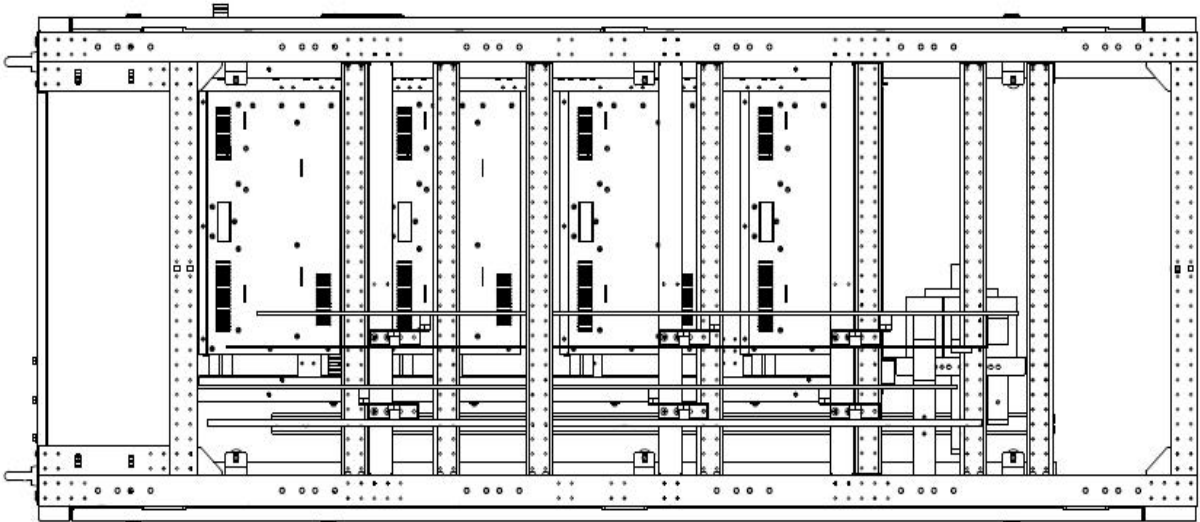


Figure-1 System framework

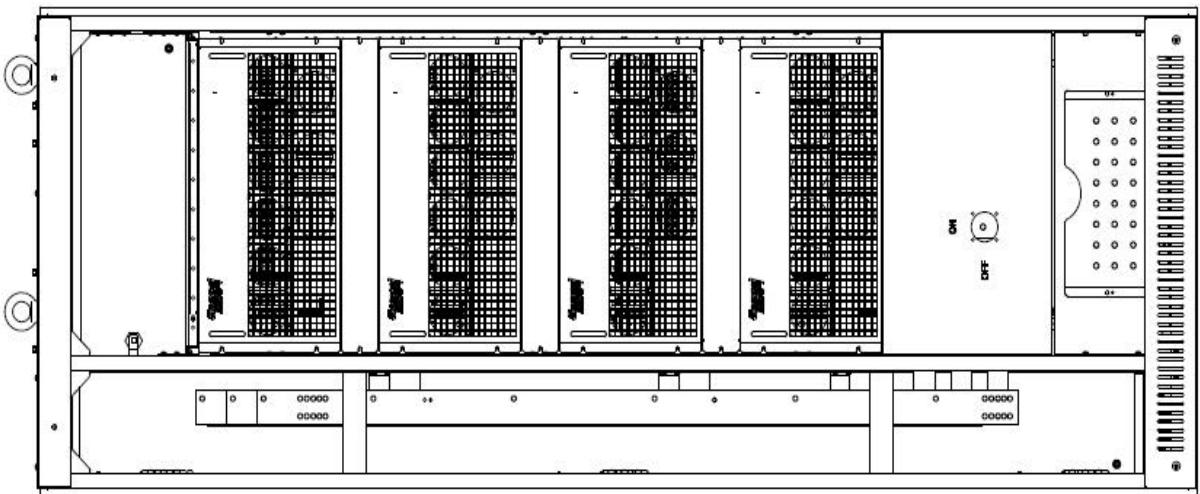
BACK VIEW



SIDE VIEW
Opening the door



FRONT VIEW
(Opening the door)



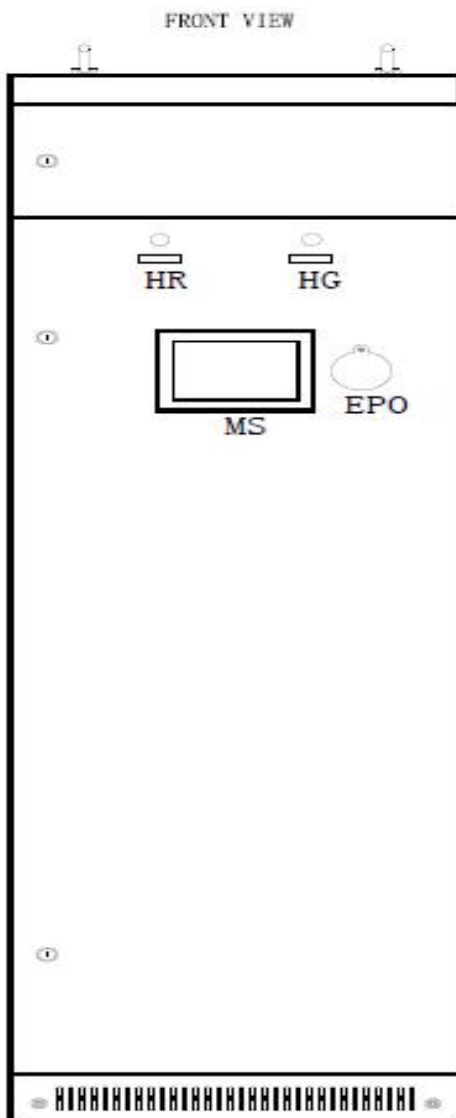


Figure-2 Cabinet layout

Label	Description
HR	Normal operation indicator
HG	Warning indicator
EPO	Emergency power button
MS	Monitoring touch screen
Switch	Input switch
M1~M5	AHF power module
Input A Input B Input C	Input cable connected to copper bus
XT1	CT wiring terminal map

Table-1 Description of system name

Chapter 3: Installation and Power Distribution

All installation, assembly and start-up operations must be handled by the qualified professionals, if there is need for self-handling, it must be monitored by the professionally qualified professional.

Step 1: cabinet installation

Fasten the cabinet pedestal with 4 M12x35L (4 screws fixing the cabinet on the pallet) screws. Check the fixed hole position in figure 7.

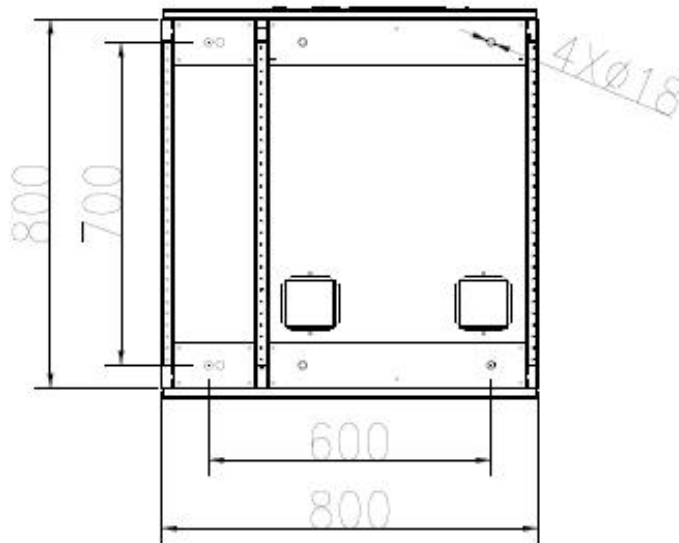


Figure 3: Installation size map of cabinet pedestal

Step 2: Using Wiring

- 1. Before line materials installation or electrical connection, make sure the power in AHF input end system is off in case of any accident;
- 2. Good grounding must be ensured to avoid any damage from leakage current;
- 3. Confirm the input connected to AHF and each wire diameter mark of external CT, make sure the size and phase order of wire diameter is correct. Refer to table 1 for the input of power line specification.

Table 2: Cable model selection

Rated capacity	400 kvar/600A
Phase line/ mm^2	2*120
N line/ mm^2	2*120
PE line/ mm^2	120
CT transformation ratio range	150/5~10000/5
CT cable	Below 15 m:RVVSP2×2.5 mm^2 , 15-30m:RVVSP 2×4 mm^2 , Above 30m: contact our company
Air-switch rated current	800A
Remark	Cable specification needs to be expanded if there is requirement for cable temperature

Step 3: The Power Line

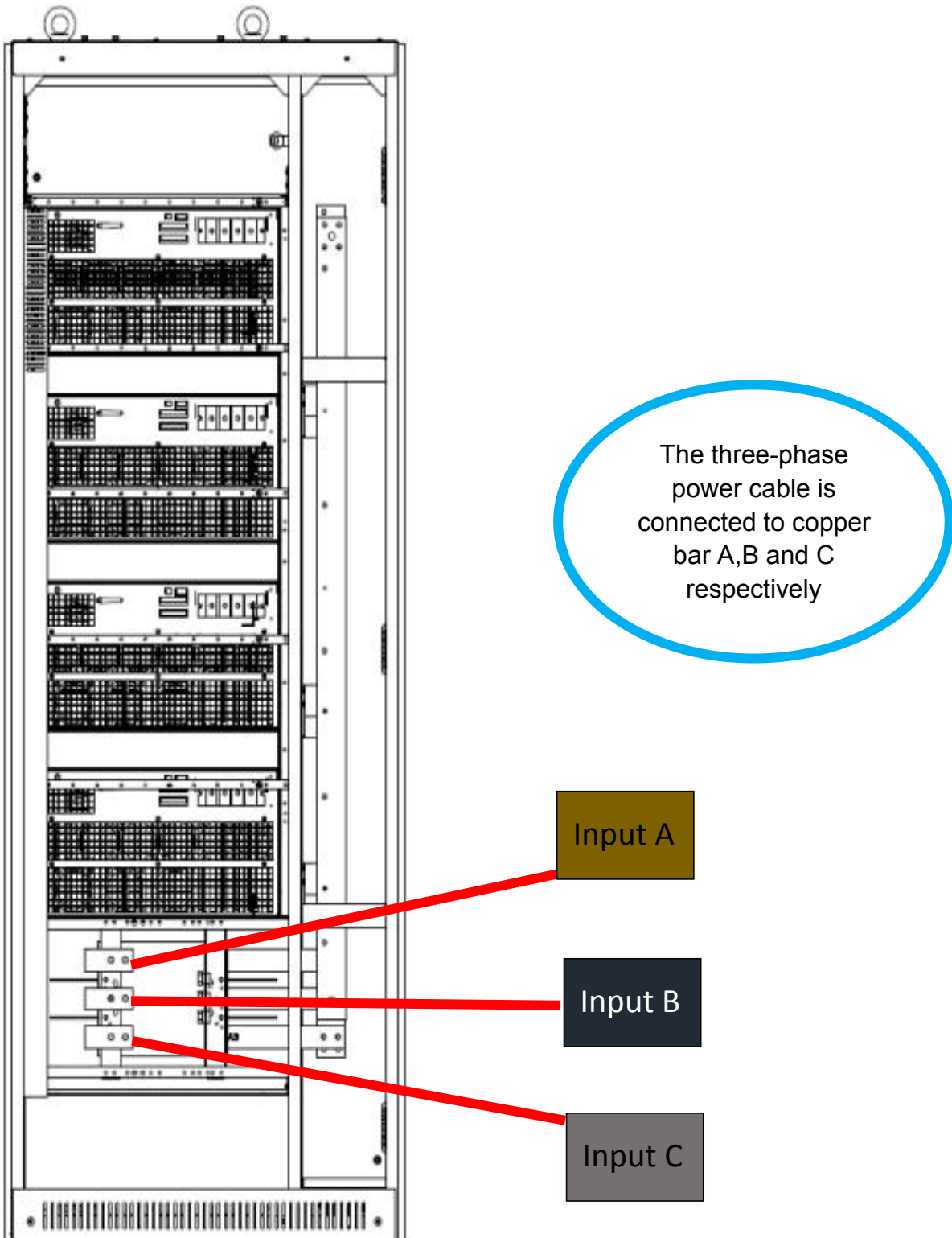


Figure-4 Copper bar wiring diagram of terminal

(The colors of phase A, B, C and N are Brown, black, grey and blue respectively)

Step 4: External CT Wiring

Once external CT is connected to a power distribution system with normal power supply, CT secondary side terminal must be short-circuited. CT secondary side can be short-circuited through the corresponding terminal XT1 of AHF system. Gliding slab 3, 8 and 13 in XT1 can realize the short-circuit of S1 and S2 of CT. Make sure that all secondary side GND ends of three-phase are short-circuited and connected to AHF PE line before CT is connected to the system, so as to ensure the safety of construction and operator. CT wiring terminal is listed in figure 4; CT secondary side cable short-circuit is listed in figure 5.

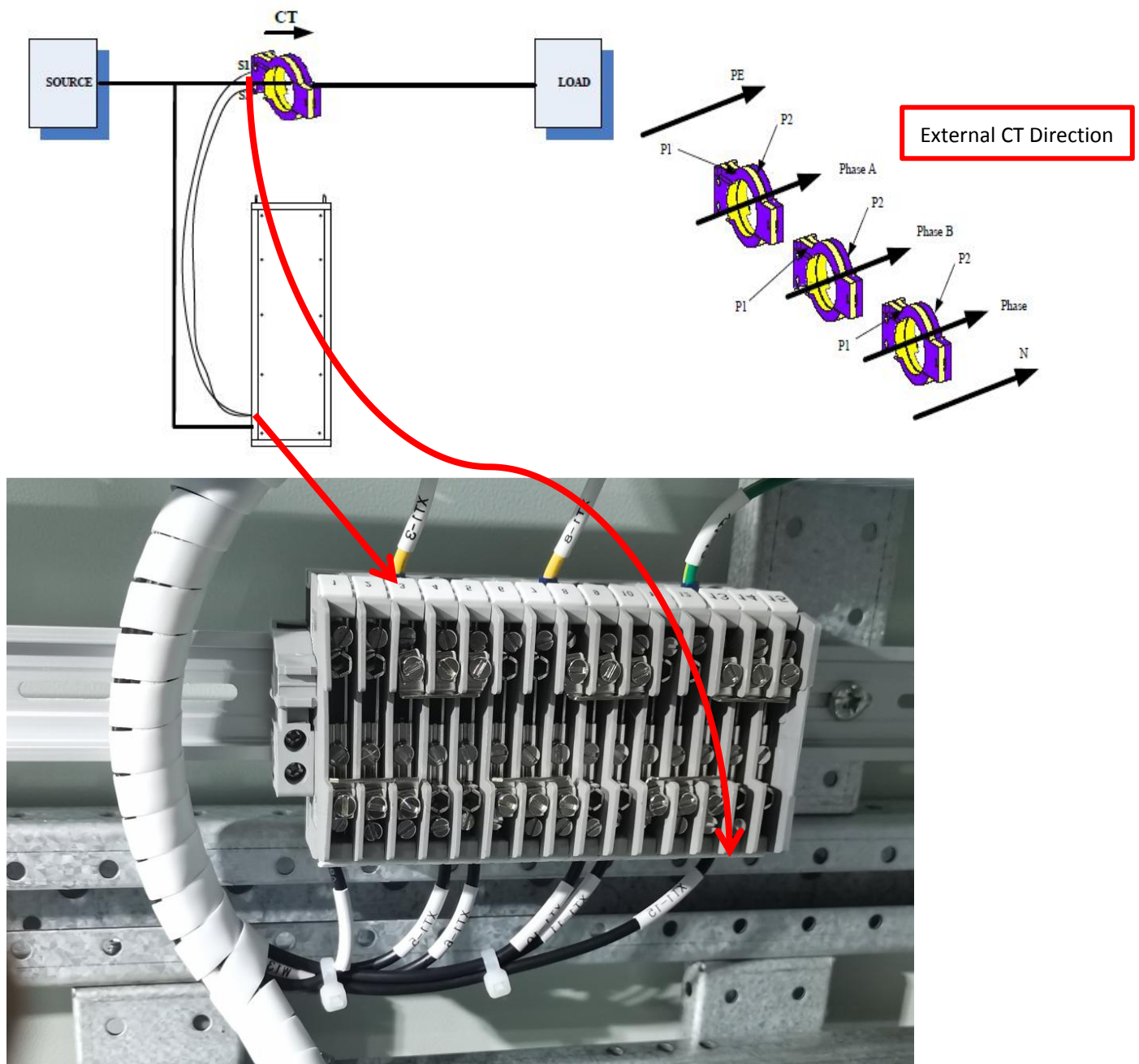


Figure 7 CT Wiring Diagram

Chapter 4: Module Installation and replacement

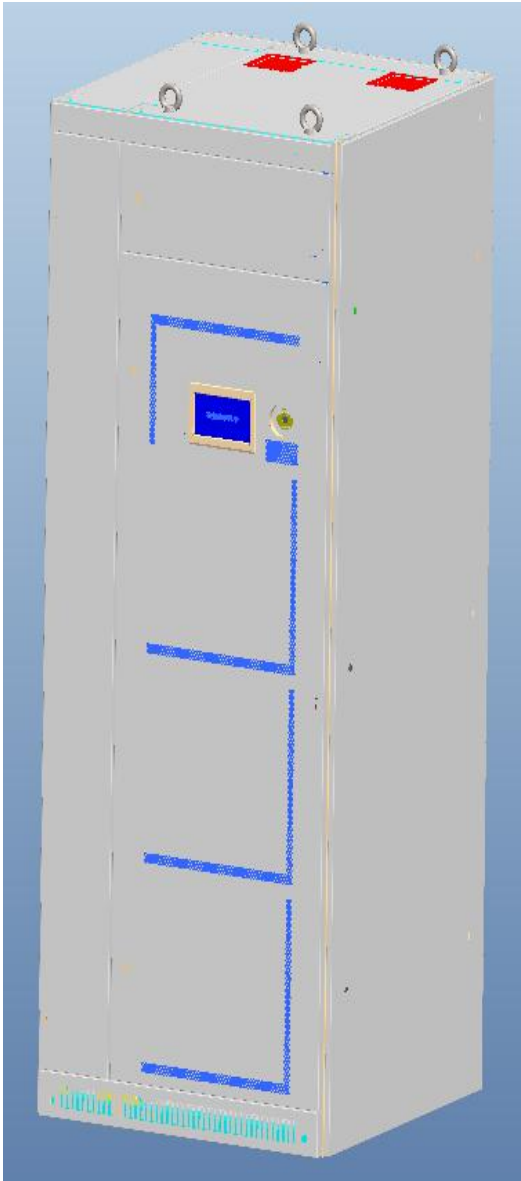


Figure 8: Complete Machine

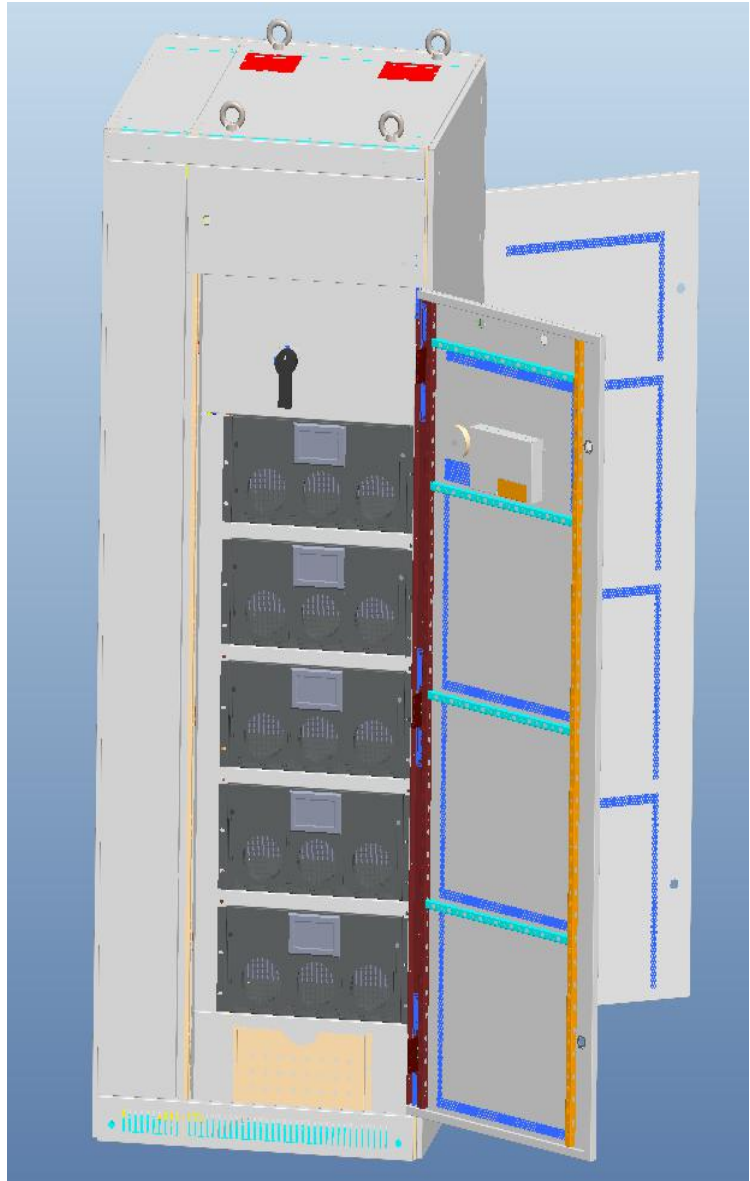


Figure 9 :Front view of cabinet

Step 1: Unscrew or Screw the module to be replaced

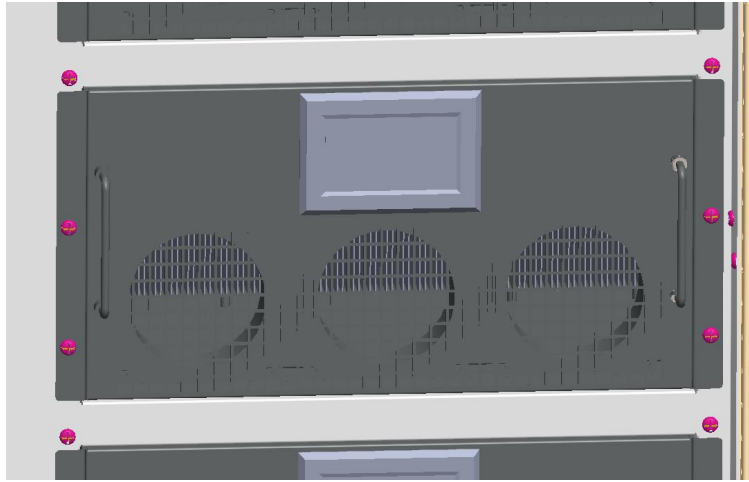


Figure 10: Front view of module

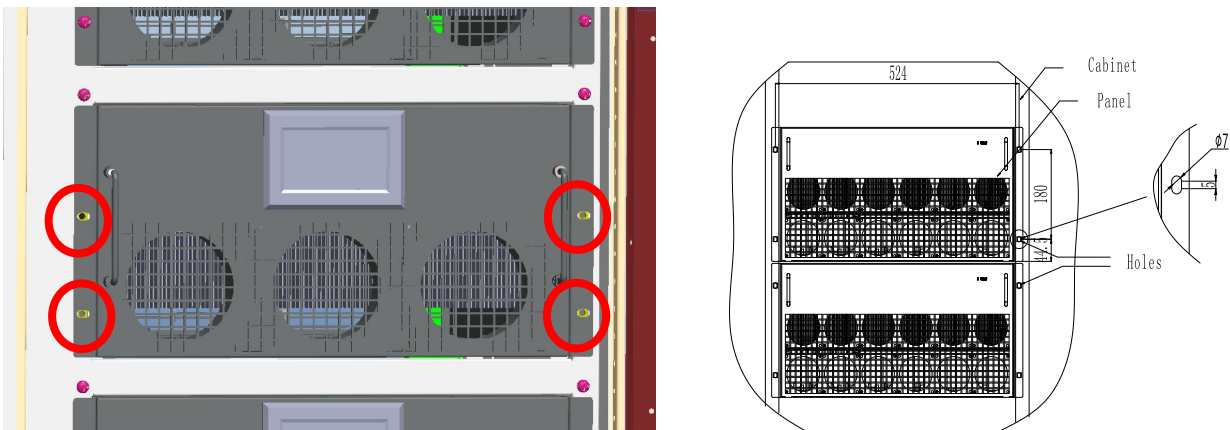


Figure 11: Module set screw hole

Step 2: Internal module power line connection

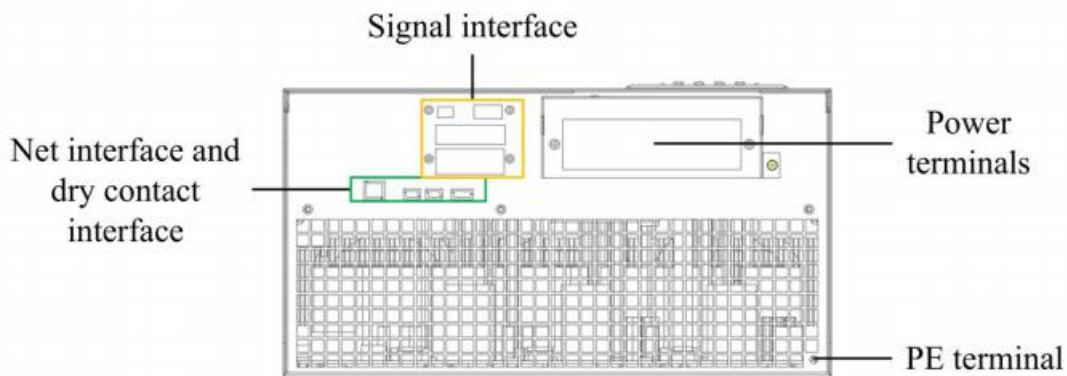
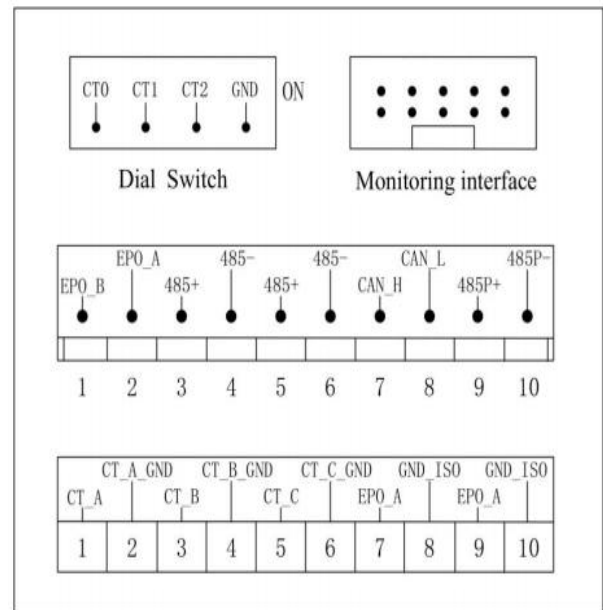
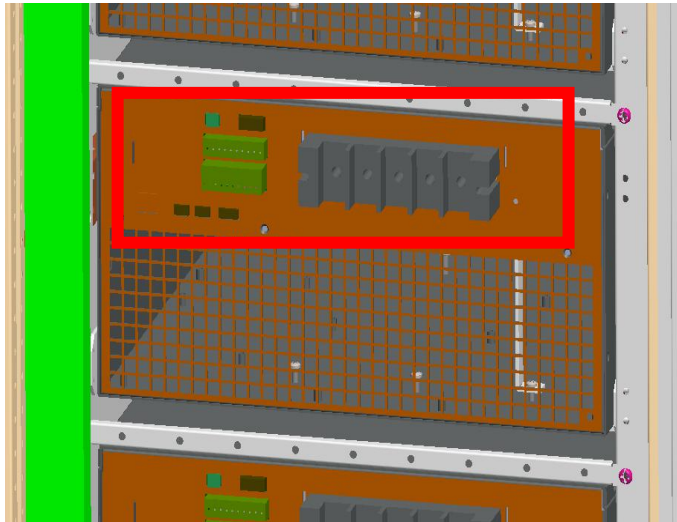


Figure 12: Connecting hole at the back of the module

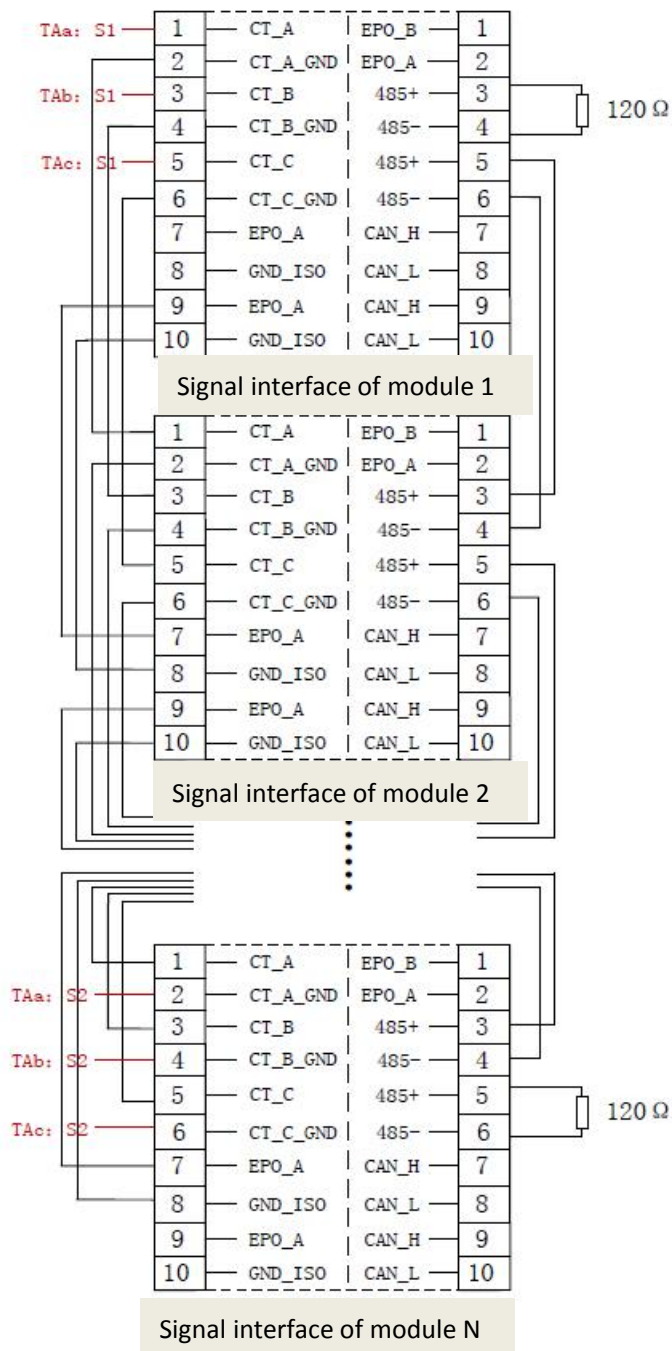


Figure 12:CT connection diagram of internal module