



PV&ESS All-in-one Distributed ESS Installation Manual

PMA-A050K-P-110K

Ver 1.0

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USAGE GUIDELINES:

1. General Information

This manual is intended for installation purposes only and does not include any commercial or technical terms.

As the product may be updated or upgraded, the content of this document may be revised periodically. There may be some minor discrepancies or errors compared to the actual product. Unless otherwise stated, this document serves solely as an installation guide, and all information, statements, and suggestions in this document do not constitute any warranties, either express or implied.

2. Photovoltaic (PV) Connections

- Rated PV input: 96kW
- Maximum PV input voltage: 1000V, rated operating voltage: 620V, MPPT voltage range: 330-850V
- 4 MPPT inputs, with 2 PV strings per input. Maximum operating current: 40A per input, maximum short-circuit current: 50A
- Wiring: Use 4-6mm² PV-specific cables for the PV input terminal block.
- This product is not compatible with thin-film solar modules and is only suitable for crystalline silicon modules.

3. Mains Input

- This product supports a maximum mains input power of 50kW, with a voltage of 400V and a frequency of 50/60Hz. It can be wired using a three-phase, five-wire or four-wire system.
- Connect the mains input to the corresponding terminal.

4. Load Output

- Maximum load: 50kW (three-phase), with up to 100% unbalance allowed across phases
- Connect the load to the output terminals.

5. Diesel Generator Input (Optional)

- Maximum diesel generator input: 50kW (three-phase)
- Connect the diesel generator to the corresponding input terminal.

6. Dimensions and Weight

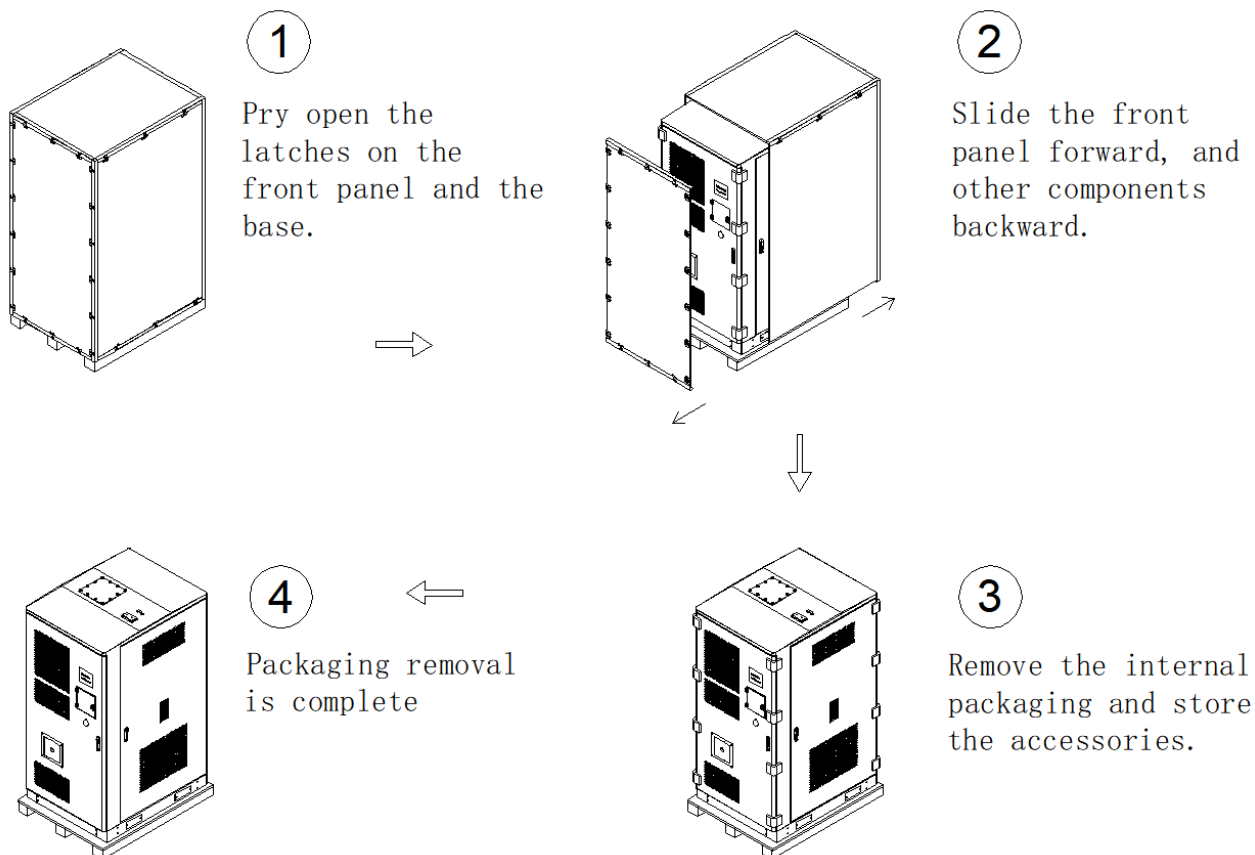
- Dimensions: W1000 x D1320 x H2145 mm. Weight: 1370 kg

TOOL LIST

No.	Item	Specification	Quantity	Remarks
1	Protective Equipment	As needed	As needed	
2	Forklift	Above 2 tons	1 unit	
3	Claw Hammer	8~12 oz	As needed	
4	Flathead Screwdriver	6*100	1 pcs	
5	Flathead Screwdriver	4*75	1 pcs	
6	Socket Wrench	13/17mm	1 pcs	
7	Open-End Wrench	13/17mm	1 pcs	
8	Crimping Tool	0.5-25mm ²	1 pcs	
9	Wire Stripper	0.5-6 mm ²	1 pcs	
10	Utility Knife		1 pcs	
11	Hydraulic Crimping Tool	6-185mm ²	1 set	
12	Multimeter		1 unit	
13	Electrical Tape		As needed	
14	Fireproof Putty		2kg	

Note: The tools listed here do not represent all the tools and equipment used during construction.

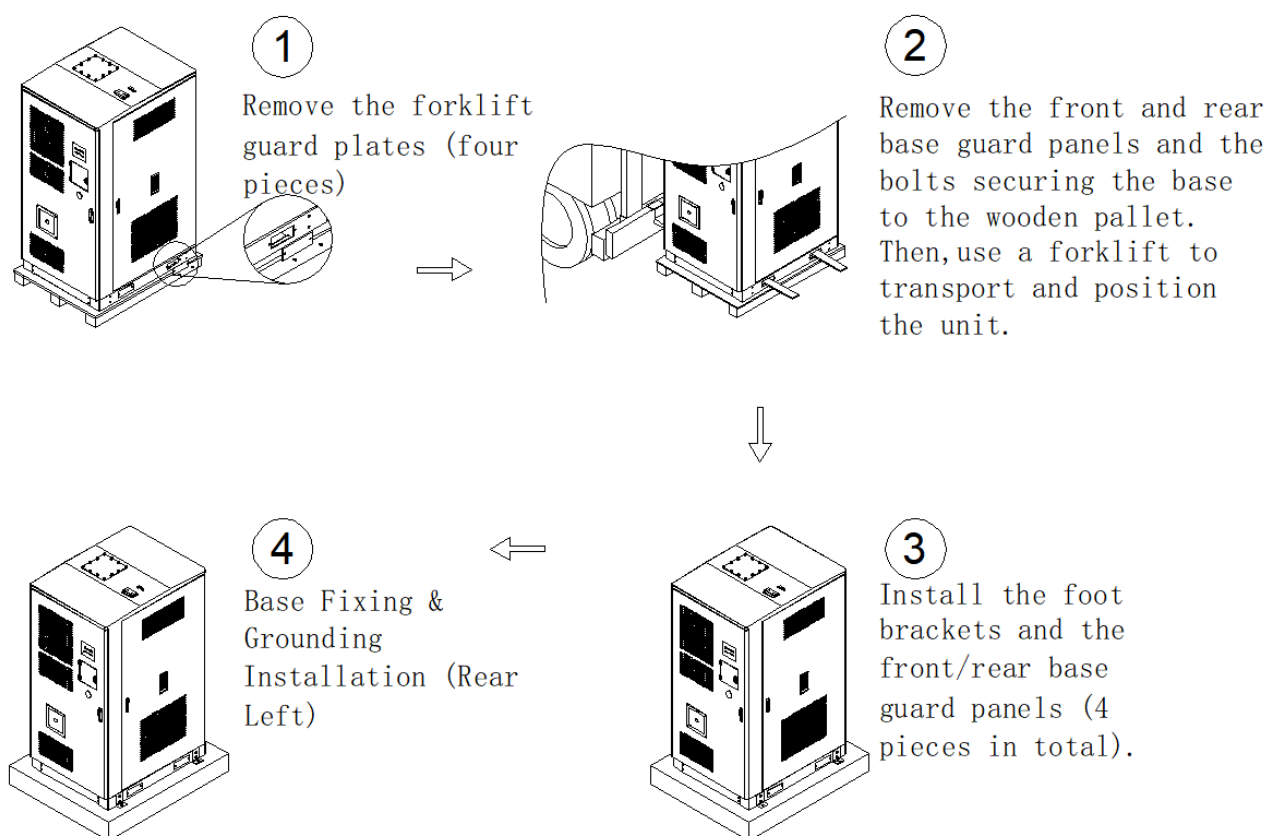
UNPACKING



Note:

1. Do not damage the equipment during unpacking.
2. Verify the packing list and accessories during unpacking.
3. After unpacking, proceed with installation as soon as possible.

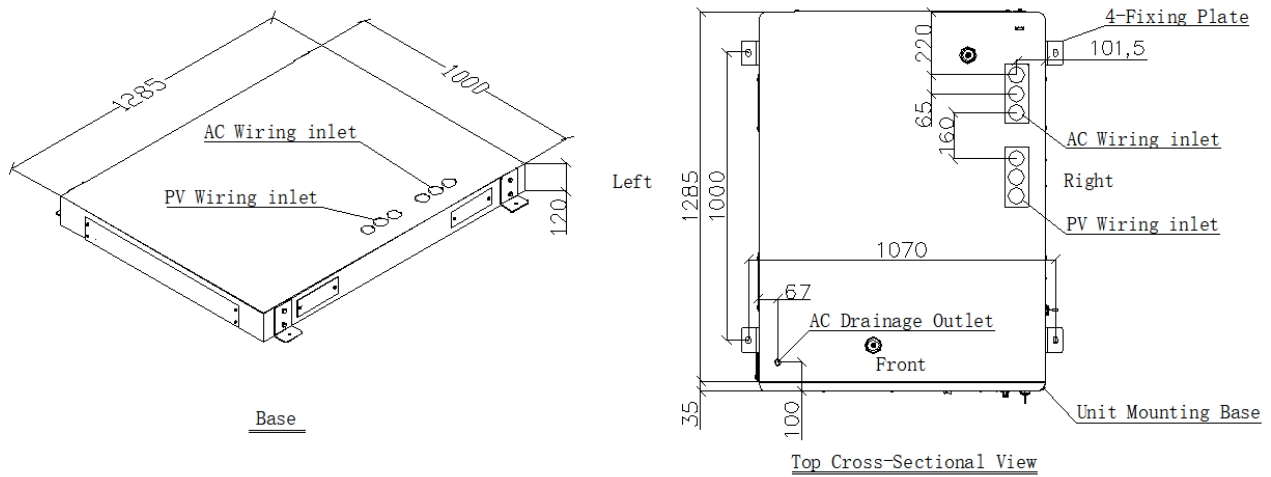
HANDLING AND SECURING



Note:

1. When moving the equipment with a forklift or other tools, ensure that the equipment is not damaged.
2. After installation, restore the forklift guard plate to its original position.
3. The equipment's casing must be grounded.

EQUIPMENT BASE

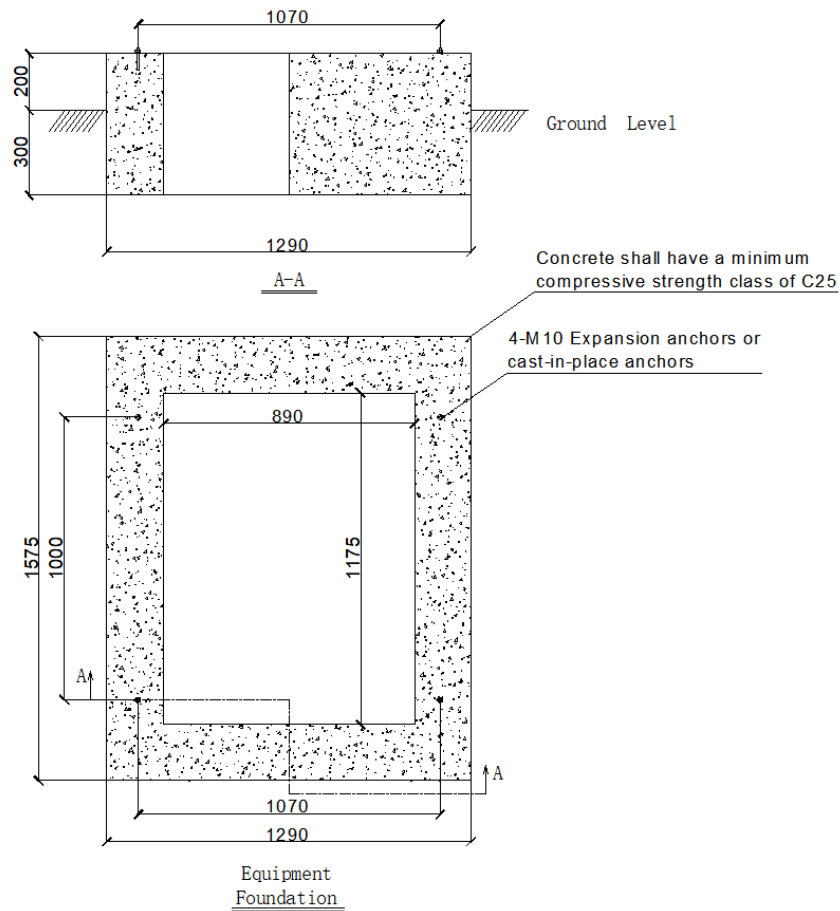


Notes:

1.The base view is mainly for the purpose of pre-wiring.

The power cable is connected from the right door, with a cable entry/exit hole of 6- ϕ 50mm.

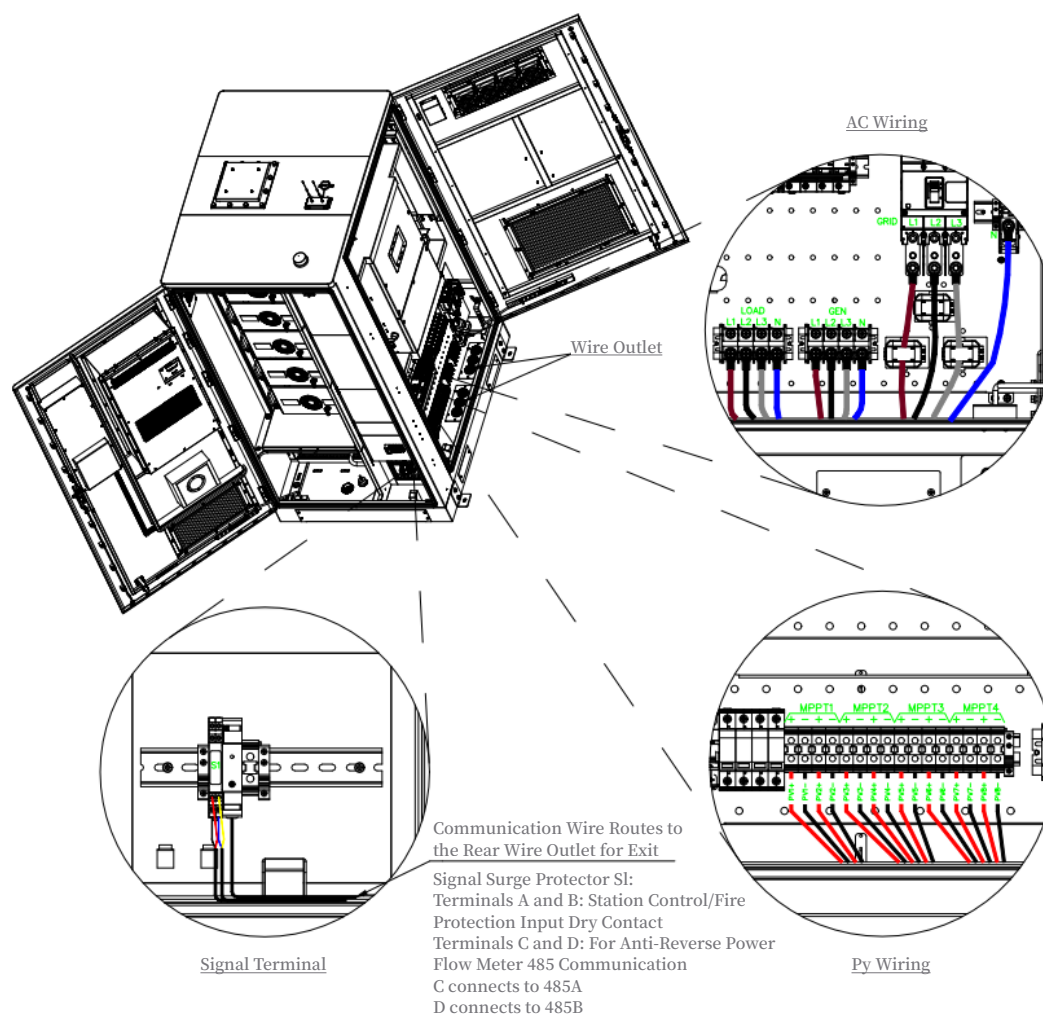
EQUIPMENT FOUNDATION



Notes:

- 1.The equipment should be installed on a stable and reliable foundation.
- 2.It is recommended to use concrete with a grade of C25 or higher for the foundation material.
- 3.The center distance between the equipment mounting feet holes should be $W1070 * D1000$.
- 4.It is recommended to use M10 expansion bolts or embedded parts to secure the equipment mounting feet.
- 5.The thickness of the mounting feet is 4mm, and the embedded parts should leave appropriate dimensions.
- 6.If the foundation is installed on a load-bearing surface, only the ground part needs to be prepared, and the equipment should be installed 200mm above the ground.
- 7.If the foundation is installed on a non-load-bearing surface, a foundation pit should be excavated first, followed by concrete pouring. Foundation dimensions can be referenced from the diagram above.
- 8.Before constructing the foundation, ensure to pre-prepare the cable entry/exit positions or embedded lines as shown in the "Equipment Base" diagram.

CABLE CONNECTIONS



1.Mains Power Input Terminal Block: As shown in the diagram above. GRID, recommended terminal models: OT50-8, OT25-8; Cable: ZR-YJV 350 + 125.

2.Load Output Terminal Block: As shown in the diagram above. LOAD, recommended terminal models: OT25-8, OT16-8; Cable: ZR-YJV 325 + 116.

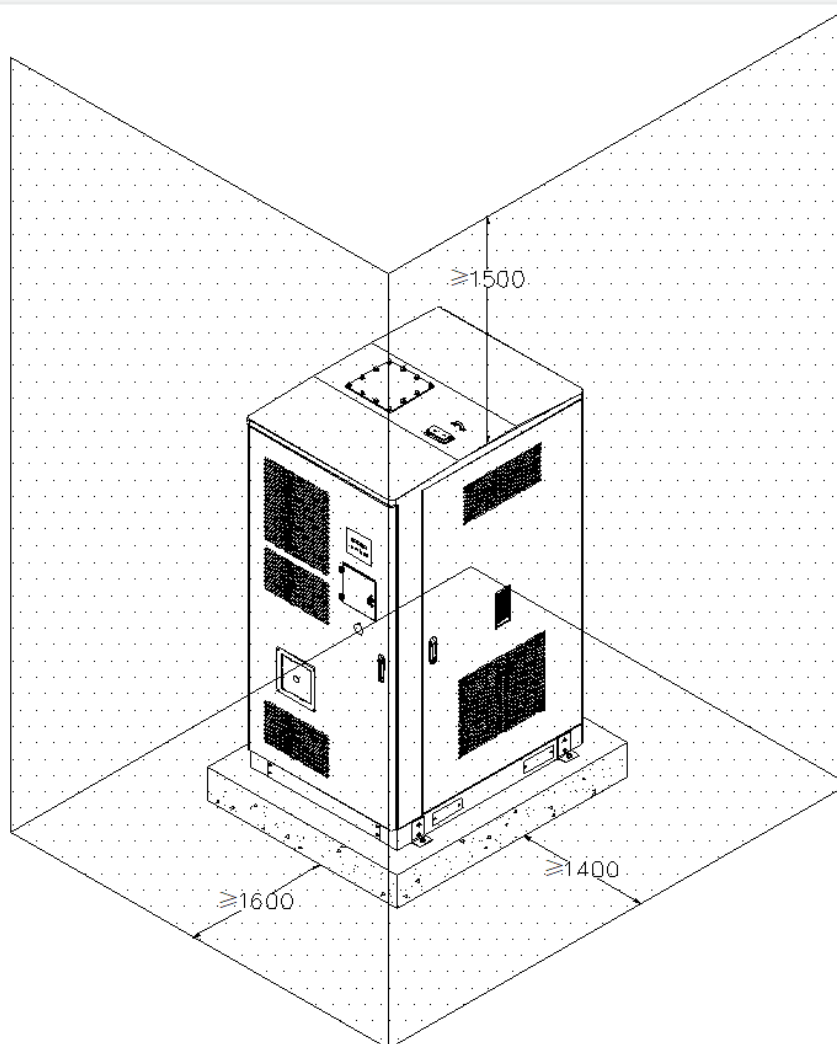
3.Diesel Generator Input Terminal Block: As shown in the diagram above. GEN, recommended terminal models: OT25-8, OT16-8; Cable: ZR-YJV 325 + 116.

4.Cabinet Grounding: At the back of the cabinet. It is recommended to use 4*40 flat iron as the grounding conductor, connected to the ground grid.

5.Photovoltaic Input Terminals are labeled MPPT1-4.

It is recommended to use shielded twisted pair cables of 0.75mm² for communication. For the communication of remote meters (RS485), a 120Ω matching resistor should be used on the line.

SPACE REQUIREMENTS



To ensure proper maintenance of the equipment inside the cabinet and allow smooth movement of handling tools, adequate clearance should be reserved around the installation area. The minimum clearance shall not be less than the dimensions indicated in the diagram above.

1. Maintain a clearance of >1400 mm along the long side of the ESS, >1500 mm at the top, and >1600 mm on the air-conditioning installation side.

2. A maintenance walkway should be provided around the cabinet or on at least one side, with a clear width of >1000 mm.

3. It is recommended to use solid walls or fences to isolate the energy storage area for safety protection. Firewalls may replace part or all of the enclosure; where applied, the firewall thickness should be >200 mm. The final design may be determined by the designer as required.

4. The above spacing is designed based on installation and maintenance considerations only. Final spacing must also comply with local fire protection requirements.

