

Quick Installation Manual APX 86~200H-S1-US



Environment requirements



System size



APX 1000140-C1-US is the Control Module (CM for short) of the high-voltage battery system
APX 14.3P-B1-US is the Battery Module (BM for short) of the high-voltage battery system.

1. Checking before installation









90

Ground

> The battery system can be installed in doors or outdoors. The angle and clearance

9Ø

Ground

Clearance and angle requirements

requirements are shown below.

1

Wall

90%

1

Ground



- 1. The system requires installation assistance from at least two adults capable of heavy lifting.
- 2. It is recommended to use a forklift during the installation.
- 3. A maximum of 7 battery modules can be stacked in one column. If more than 7 of them are to be configured, please install them in two columns.
- 4. The figure above demonstrates the recommended installation clearance. Users can adjust the installation method based on the on-site situation with the clearance requirements met. Please take the cable length into consideration. If the cable length does not meet the on-site installation requirements, please contact our customer support.
- 5. Keep a distance of at least 600 mm (23.62 in) between the back of the battery and the wall and a clearance of at least 600 mm (23.62 in) on the left side of the inverter.







4. Cable Connection





Number	Name	Description
1	Ventilation valve	Exhaust air and keep water out
2	PCS+	CM positive terminal connected to the PCS positive terminal
3	PCS-	CM negative terminal connected to the PCS negative terminal
4	SEM	Communication terminal connected to the ShineMaster
5	AC INPUT	AC INPUT terminal
6	PCS	Communication terminal connected to the hybrid inverter





Number	Name	Description
1	Explosion-proof valve	Exhaust air and keep water out
2	FAN	Fan power supply terminal
3	USB	USB terminal cover plate
4	IN1	Communication input 1, connected to OUT1 on the previous BM, or BM1 on the CM (for the first BM)
5	IN2	Communication input 2, connected to OUT2 on the previous BM, or BM2 on the CM (for the first BM)
6	B+	BAT positive terminal
7		PE terminal
8	В-	BAT negative terminal
9	OUT2	Communication output 2, connected to IN2 on the next BM, or covered with the short-circuit connector cap (for the last BM)
10	OUT1	Communication output 1, connected to IN1 on the next BM, or covered with the dust-proof cover (for the last BM)

4-3 System wiring and installing the covers

Step 1: Cut the rubber sealing plug on the base with a knife before connecting cables.



NOTE: 1. If less than seven battery modules are installed, you can skip this step.

2. Prior to connecting cables, please cut the rubber sealing plug on the base using a knife.

3. Alternatively, you can cut the rubber sealing plugs on the sides of the base or remove them, which is not recommended as it might compromise the sealing performance of the system. If the use of a conduit is required, please remove the plugs and install the conduit fittings. The conduit and fittings should be separately purchased.

4.You are advised to route all the cables through the holes before connecting them.



- The anti-tip & grounding connecting pieces installed between the CM, BMs and the base are used for grounding. Make sure that they are correctly connected.
- Insert the power cable connector into the corresponding terminal until you hear a "click " sound. Bend the power cable outward when wiring it as it is relatively long.
- 3 Use cable ties to secure the power cables to the cable clip.
- Install communication cables. Connect OUT1 to IN1 on the next BM and OUT2 to IN2 on the next BM.
- 5 For the last battery, cover the OUT1 with the dust-proof cover and the OUT2 with the shortcircuit connector cap.
- 6 When the battery system is installed in a single column and the negative power cable is too long, bend and fold the cable under the battery base.

NOTE:

- 1. Verify that the voltage at the battery output terminal is 0V using a multimeter to avoid connecting cables with power on.
- 2. Connect cables following the sequence demonstrated in the figure. The communication
- cables are installed lastly. Avoid mistakenly powering on the machine during installation. 3. Once the power cables are installed, you can pull the cables slightly to ensure that they are
- securely connected.



Cable connections between two columns



Bottom view of the cable connections between two columns

NOTE:

- 1. When connecting the power cables and communication cables between the two columns, make sure to pass the wires through the two wire holes on the base before connecting them to the other column. (The length of the wires for connection between two columns is designed based on the situation where a maximum of 7 battery modules are installed in the second row. If the wires are too long for the actual use, please place the excess part into the middle of the base through the cable routing hole.)
- 2. Connect the two bases using the ground cable in the cable pack for common grounding.
- 3. Connect the power cables and the communication cables from the bottom BM in the column with the CM to the top BM of the other column. Ensure that the dustproof cover and the short circuit connector cap are in place on the OUT1 and OUT2 terminals of the BM farthest from the CM.
- 4. Connect the B- terminal of the BM farthest from the CM to the B- terminal of CM.
- 5. The cable color is for demonstration purpose only. The actual cable color prevails. colors of the cables.



Follow all instructions for system wiring specified in the manual strictly. Growatt shall not be liable for any system damage or other safety accidents caused by failure to follow the instructions.





NOTE:

1. The APX 86~200H-S1-US system wiring is shown above. Ensure that the communication cables and power cables for each equipment are connected at the same time. 2. Failure to connect the communication cables

and power cables for each equipment at the same time can result in system damage and lead to safety risks.

NOTE:

In the diagram above, the communication cables of the last BM are disconnected, the OUT2 shorting cap is connected to the BM above, and the power cables are connected, which would damage the system and cause potential safety risks.







NOTE:

- 1. Remove the panel from the back of the CM.
- 2. Remove the rubber sealing plugs, then install two conduit fittings with a diameter of 2 inches (prepared by users).
- 3. Connect the power cables and communication cables between the PCS and CM through separate conduits.
- 4. Connect the grounding cable from the ground point on the base to the ground. The grounding cable MUST BE properly connected; otherwise, it may cause system damage or electric shocks. The ring terminals to be crimped with the grounding cable can be found in the cable package.





If the battery system is configured in two columns, prior to installing the front cover of the top BM in the second column, you need to install the two sealing plates as shown in the figure marked with ④.

5. Terminal Connection



Note: When removing the terminal, pull it out horizontally, keeping it perpendicular to the CM wiring side; otherwise, the terminal might be damaged.

6. Powering on/off the Battery System

Power press	press OFF ON Rotate		
Powering on the Battery System	Powering off the Battery System		
Turn the DC switch on the Control Module to the "ON" position, then press the power button for 1 to 2 seconds.When the CM's LED light is on, and the SOC and battery status indicator are displayed, it indicates that the system has been powered on successfully. When powering on the system, ensure the isolation switch is turned on before pressing the button.	Press the POWER button for 10 to 15 seconds. Set the DC switch to OFF.Wait 30 s until the CM's LED light is off, and the SOC and battery status are not displayed, then set the DC switch to OFF.		
Note: When powering off the system, ensure the isolation switch is turned off after pressing the button. Do not disconnect the isolation switch with power on, as this risks			

7. Service and contact

damaging the switch.

