PV56 Installation Instructions

Follow these instructions to install and commission the PV56 (PV56) to receive monitoring data. See the Equinox Installation Guide (#518101) for the complete Equinox system installation instructions.

Kit includes:
- PV Supervisor 6 (PV56)
- Mounting bracket
- (2) Screws
- (2) Hole plugs
- (2) 100 A Current Transformers (shipped separately)

You will need:
- Phillips and small flathead screwdriver
- Hardware that supports 6.8 kg (15 lbs) to install the bracket
- RJ45 crimp tool
- Wire cutter and stripper
- Step drill (Optional)
- Laptop with latest Chrome or Firefox version installed
- Ethernet cable
- Your SunPower monitoring website credentials
- (Optional) Customer's Wi-Fi network and password

Routing wire and cable:
- Fill all openings in the enclosure with components rated NEMA Type 4 or better to maintain the integrity of the enclosure’s environmental system.
- Drill extra openings with step drill (do not use screwdriver or hammer).
- Use only the provided conduit openings or drilled locations and never cut holes in the top or sides of the enclosure.
- Never run inverter or Ethernet communication cable in the same conduit as AC wiring.
- CT and AC wiring may be run in the same conduit.
- The max. allowable conduit size for PV56 is 3/4".

Environmental Ratings

Pollution Degree: 2, ~30°C to +60°C operating ambient temp.; 15–95% non-condensing humidity, max. altitude 2000 m; outdoor use; Type 3R enclosure.

Safety & Certifications

Safety Instructions

Installation and field service is to be performed only by qualified, trained personnel with the necessary skills and knowledge to work on any type of electrical device. Field service is limited to the components contained in the lower compartment of the PV56.

- Perform all electrical installations in accordance with any national and local codes, such as the National Electrical Code (NEC) and NEMA/IEEE.
- The enclosure is suitable for use indoors or outdoors (NEMA Type 3R). Operating ambient from −30°C to 60°C.
- Before beginning this procedure you should familiarize yourself with the following instructions in this document:
  - Electrical wiring code compliance: connect the PV56 to a dedicated UL Listed 15 A-rated breaker using 16 AWG wire, or a UL Listed 20 A-rated breaker using 10 AWG wire.
  - Only one CT is required per input. The output current is less than 0.1 amp with current transformers (CT) of 240V. 4 1/2.
- The PV56 contains internal transient surge protection for connection to the load side of the service entrance AC service panel.

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- This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions in this manual, may cause interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, try to correct the interference by one or more of the following measures:
  - Reorient or relocate the receiving antenna.
  - Increase the separation between the equipment and receiver.
  - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

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FCC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions in this manual, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, try to correct the interference by one or more of the following measures:

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- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

FCC Caution:

Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

Safety Certification

- UL Listed to UL 1741, 1st Edition, for indoor use.

- The PV56 is not a telecom network device, thus it does not need to be recertified or operating in conjunction with any other antenna or transmitter except in accordance with FCC transmitters and product procedures.

- This equipment is a datalogger-gateway device used for solar system and home monitoring, metering, and control.

1. Mount the PV56

1. Select an installation location that is not in direct sunlight.
2. Mount the PV56 bracket to the wall using appropriate hardware for the mounting surface and that can support at least 6.8 kg (15 lbs).
3. Fix the PV56 onto the bracket until the mounting holes at the bottom are aligned.
4. Use a screwdriver to secure the PV56 to the bracket using the provided screws. Do not overtighten.

2. Wire the PV56 power

**Danger!** Hazardous voltages! Do not power up the system until you complete Sections 1 through 3. Accessing the system involves possible contact with potentially lethal voltages and currents. No attempt to access, install, adjust, repair, or test the system should be made by anyone who is not qualified to work on such equipment. Use copper conductors only, with min. 75°C temp. rating.

1. Use a screwdriver—do not use power tools—to prepare the PV56 for AC wiring:
   - Using a flat-blade screwdriver, carefully bend the PV56 cover retention tab back to expose the screw terminals and then remove the outer cover.
   - Remove the lower AC wiring cover.
   - Remove the upper AC wiring cover.
2. Run power conduit from the service panel to the PV56. If you use the rear conduit entances, seal the holes on the bottom of the enclosure with the included hole plugs. Use step drill if you are using rear or center bottom entrances.
3. Connect the PV56 to either a 15 A (with 14 AWG) or a 20 A (with 12 AWG) UL Listed dedicated dual pole breaker.

**Note:** For AC modules, this breaker should be in the same service panel containing the PV56. No additional connection is required, the PV56 communicates with AC Modules using PLC protocol.

4. Connect communication for each device using corresponding port:
   - AC modules: Verify that you connected the AC modules to the AC module subpanel.

5. Connect the PV56 to the internet

Connect to customer’s internet using either:
- Ethernet cable: from PV56 LAN2 to router using AC module or SMA US-22 (first or only) inverter in the daisy chain. Follow the manufacturer’s instructions to daisy-chain additional SMA US-42/US-22 inverters using Ethernet cables.
- Wi-Fi network: from PV56 LAN1 port to either the PVS6 or the inverter based on installation type:
  - AC module or SMA US-22: Connect to the PVS6 LAN 1 port.
  - SMA US-40/US-42/US-46: Connect to available communication port (A or B) in the last (only) inverter.
6. Connect the PVS6 to the internet

Connect to customer’s Wi-Fi network using:

- Ethernet cable: from PVS6 LAN2 to router using AC module or SMA US-22 (first or only) inverter in the daisy chain. Follow the manufacturer’s instructions to daisy-chain additional SMA US-40/US-42/US-46 inverters using Ethernet cables.

7. Commission with the PVS Management App

1. Use your laptop to connect to either the PVS6 or the inverter using:
   - Ethernet cable:
   - Wi-Fi network:
2. Use the PVS Management App onscreen instructions.

8. Environmental Ratings

Pollution Degree: 2, ~30°C to +60°C operating ambient temp.; 15–95% non-condensing humidity, max. altitude 2000 m; outdoor use; Type 3R enclosure.

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PVS6 Quick Start Guide

Follow these instructions to install, configure, and commission the PV Supervisor 6 (PVS6) to begin receiving monitoring data. Refer to the PVS6 Installation Instructions on the other side for the complete instructions.

Routing wire and cable:
- Fill all conduit openings in the enclosure with components rated NEMA Type 4 or better to maintain the integrity of the enclosure's environmental system.
- Drill extra 0.875" (22 mm) or 1.11" (28 mm) conduit locations, if required, with step drill (do not use screwdriver or hammer).
- Use only the provided conduit openings or drillout locations and never cut holes in the top or sides of the enclosure.
- Never run inverter or Ethernet communication cable in the same conduit as AC wiring.
- CT and AC wiring may be run in the same conduit.

1. Mount the PVS6
Mount the PVS6 bracket to the wall using hardware that supports 6.8 kg (15 lb); use Phillips screwdriver to secure the PVS6 to the bracket using the two provided screws.

2. Remove all PVS6 covers
Remove lower cover first to 15 A or 20 A dual-pole breaker.

3. Wire PVS6 power
User copper conductors only, with min. 75°C temp. rating. Install a dedicated 240 or 208 VAC circuit. Land wires in J2 terminal: green to GND; black to L1; white to N; and red to L2.

4. Install consumption CTs
Refer to Section 3 on the other side for complete CT installation instructions. Place CTs around incoming service conductors: L1 CT (black and white wires) around Line 1 and L2 CT (red and white wires) around Line 2.

5. Wire consumption CTs
Land wires in J3 terminals: L1 CT and L2 CT wires around Line-Side System: Solar output installed on line-side tap upstream of CTs.

6. Replace PVS6 wiring covers
Use screwdriver to replace AC wiring covers over AC power wires.

7. Connect DC inverter communication
If DC inverter is installed, connect communication from DC inverter to the PVS6. No additional connection is required for AC modules.

8. Connect PVS6 to the internet
Connect to customer's internet with either:
- Ethernet Cable From PVS6 LAN2 to customer's router (recommended method).
- Customer's Wi-Fi Connect during commissioning with network and password.

9. Commission with PVS Management App
Turn off laptop Wi-Fi, connect Ethernet cable from PVS6 LAN1 to laptop, open latest Chrome or Firefox, type https://www.sunpowerconsole.com, and follow instructions.

10. Replace PVS6 cover
Snap the enclosure cover onto the PVS6.

Note: For sites with SMA US-40 DC inverter, connect Ethernet cable from laptop to port A or B in the last (or only) inverter.