

PV Rapid Shutdown Equipment (PVRSE)

This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC-2014 and NEC-2017 section 690.12 and C22.1-2015 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to the following requirements:

- Microinverters and all DC connections must be installed inside the array boundary. SunPower requires that the microinverters and DC connections be installed under the module to avoid direct exposure to rain, UV, and other harmful weather events.
- The array boundary is defined as 30.5 cm (1") from the array in all directions, or 1 m (3') from the point of entry inside a building.

This rapid shutdown system must be provided with an initiating device and (or with a) status indicator which must be installed in a location accessible to first responders, or be connected to an automatic system which initiates rapid shutdown upon the activation of a system disconnect or activation of another type of emergency system.

The initiator shall be listed and identified as a disconnecting means that plainly indicates whether it is in the OFF or ON position. Examples are:

- Service disconnecting means
- PV system disconnecting means
- Readily accessible switch or circuit breaker

The handle position of a switch or circuit breaker is suitable for use as an indicator. Refer to NEC or CSA C22.1-2015 for more information.

Additionally, in a prominent location near the initiator device, a placard or label must be provided with a permanent marking including the following wording: **"PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN"** The term "PHOTOVOLTAIC" may be replaced with "PV." The placard, label, or directory shall be reflective, with all letters capitalized and having a minimum height of 9.5 mm (3/8") in white on red background.

SAFETY

IMPORTANT SAFETY INSTRUCTIONS SAVE THIS INFORMATION.

This guide contains important instructions to follow during installation of the SunPower Q Cable (Model QS-12-10-240, QS-12-17-240, or QS-12-20-200) and the SunPower Microinverter (Model IQ7XS-96-ACM-US or IQ7XS-96-B-ACM-US).

Safety Symbols

	DANGER: Indicates a hazardous situation, which if not avoided, will result in death or serious injury.
	WARNING: Indicates a situation where failure to follow instructions may be a safety hazard or cause equipment malfunction. Use extreme caution and follow instructions carefully.
	WARNING: Indicates a situation where failure to follow instructions may result in burn injury.
	NOTE: Indicates information particularly important for optimal system operation.

Safety Instructions

	DANGER: Risk of electric shock. Do not use SunPower equipment in a manner not specified by the manufacturer. Doing so may cause death or injury to persons, or damage to equipment.
	DANGER: Risk of electric shock. Be aware that installation of this equipment includes risk of electric shock.
	DANGER: Risk of electric shock. Risk of fire. Do not attempt to repair the SunPower AC Module; it contains no user-serviceable parts. Tampering with or opening the microinverter will void the warranty.
	DANGER: Risk of electric shock. The DC conductors of this photovoltaic system are ungrounded and may be energized.
	DANGER: Risk of electric shock. Always de-energize the AC branch circuit before servicing. Never disconnect the DC connectors under load.
	DANGER: Risk of electric shock. Risk of fire. Only use electrical system components approved for wet locations.
	DANGER: Risk of electric shock. Risk of fire. Only qualified personnel should troubleshoot, install, or replace the SunPower Q Cable and Accessories.
	DANGER: Risk of electric shock. Risk of fire. Ensure that all AC and DC wiring is correct and that none of the AC or DC wires are pinched or damaged. Ensure that all AC junction boxes are properly closed.

	DANGER: Risk of electric shock. Risk of fire. Do not exceed the maximum number of SunPower AC Modules in an AC branch circuit. For 240 VAC systems, the limit per branch is 12. For 208 VAC systems, the limit per branch is 10. You must protect each AC branch circuit with a 20A maximum breaker or fuse, as appropriate.
	DANGER: Risk of electric shock. Risk of fire. Only qualified personnel may connect the SunPower AC Module to the utility grid.
	DANGER: Risk of electric shock. Do not install the SunPower Q Cable terminator while power is connected.
	DANGER: Risk of electric shock. Risk of fire. When stripping the sheath from the SunPower Q Cable, make sure the conductors are not damaged. If the exposed wires are damaged, the system may not function properly.
	DANGER: Risk of electric shock. Risk of fire. Do not leave AC connectors on the SunPower AC Module uncovered for an extended period. You must cover any unused connector with a sealing cap.
	DANGER: Risk of electric shock. Risk of fire. Make sure protective sealing caps have been installed on all unused AC connectors. Unused AC connectors are live when the system is energized.
	WARNING: Risk of equipment damage. The male and female connectors must only be mated with the matching male/female connector.
	WARNING: Before installing or using the SunPower AC Module, read all instructions and cautionary markings in the technical description, on the photovoltaic (PV) equipment.
	WARNING: Do not connect SunPower AC Modules to the grid or energize the AC circuit(s) until you have completed all of the installation procedures and have received prior approval from the electrical utility company.
	WARNING: When the PV array is exposed to light, DC voltage is supplied to the PCE.
	WARNING: Risk of equipment damage. Never mate the SunPower AC Module connections to if they have been left disconnected and exposed to wet conditions. This voids the warranty.
	WARNING: Use the terminator only once. If you open the terminator following installation, the latching mechanism is destroyed. Do not reuse the terminator. If the latching mechanism is defective, do not use the terminator. Do not circumvent or manipulate the latching mechanism.
	WARNING: When installing the SunPower Q Cable, secure any loose cable to minimize tripping hazard.
	WARNING: Risk of skin burn. The chassis of the Microinverter is the heat sink. Under normal operating conditions, the temperature could be 20°C above ambient, but under extreme conditions the microinverter can reach a temperature of 90°C. To reduce risk of burns, use caution when working with microinverters.

	NOTE: The SunPower AC Module has field-adjustable voltage and frequency trip points that may need to be set, depending upon local requirements. Only an authorized installer with the permission and following requirements of the local electrical authorities should make adjustments.
	NOTE: When looping the SunPower Q Cable, do not form loops smaller than 12 cm (4.75") in diameter.
	NOTE: If you need to remove a sealing cap, you must use the disconnect tool.
	NOTE: To ensure optimal reliability and to meet warranty requirements, install the Q Cable according to the instructions in this guide.
	NOTE: Provide support for the SunPower Q Cable at least every 1.8 m (6').
	NOTE: Perform all electrical installations in accordance with all applicable local electrical codes, such as the Canadian Electrical Code, Part 1 and NFPA 70 (NEC).
	NOTE: The AC and DC connectors on the cabling are rated as a disconnect only when used with the SunPower AC Module.
	NOTE: Protection against lightning and resulting voltage surge must be in accordance with local standards.
	NOTE: When installing the SunPower Q Cable and accessories, adhere to the following: <ul style="list-style-type: none"> • Do not expose the terminator or cable connections to directed, pressurized liquid (water jets, etc.). • Do not expose the terminator or cable connections to continuous immersion. • Do not expose the terminator or cable connections to continuous tension (e.g., tension due to pulling or bending the cable near the connection). • Use only the connectors and cables provided. • Do not allow contamination or debris in the connectors. • Use the terminator and cable connections only when all parts are present and intact. • Do not install or use in potentially explosive environments. • Do not allow the terminator to come into contact with open flame. • Fit the terminator using only the prescribed tools and in the prescribed manner. • Use the terminator to seal the conductor end of the SunPower Q Cable; no other method is allowed.

