



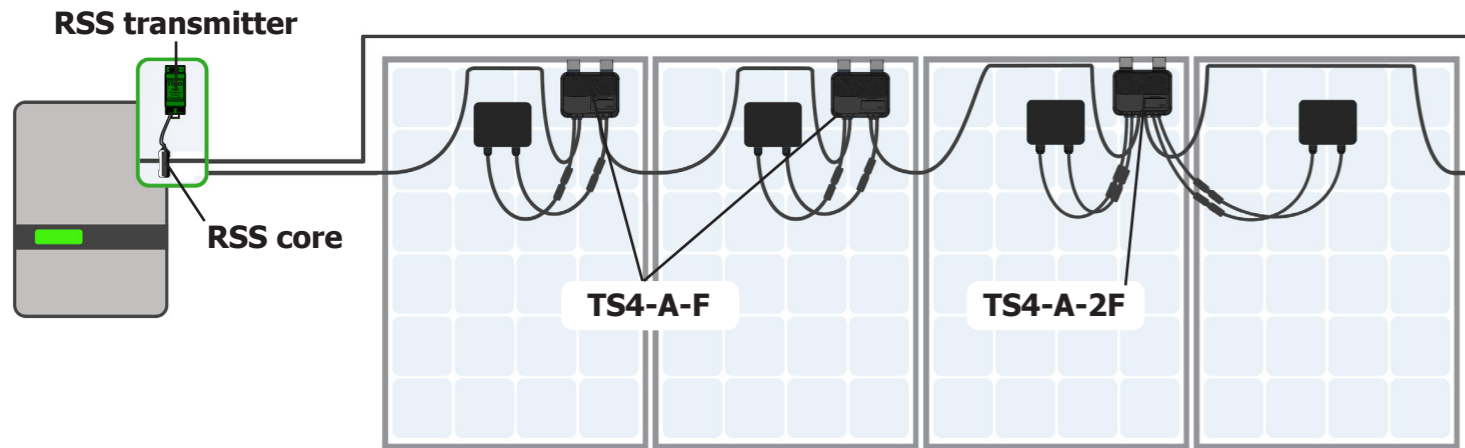
IMPORTANT SAFETY INFORMATION

LETHAL VOLTAGE MAY BE PRESENT IN ANY PV INSTALLATION
SAVE THESE INSTRUCTIONS

- All PVRSE components must be installed and maintained by qualified personnel in accordance with applicable electrical codes and instructions in the [TS4-A-F/2F with RSS Transmitters Installation Manual](#).
- Strictly adhere to all ANSI/NFPA 70 (North America) and local electrical codes.
- Improper installation may cause damage not covered by the warranty.

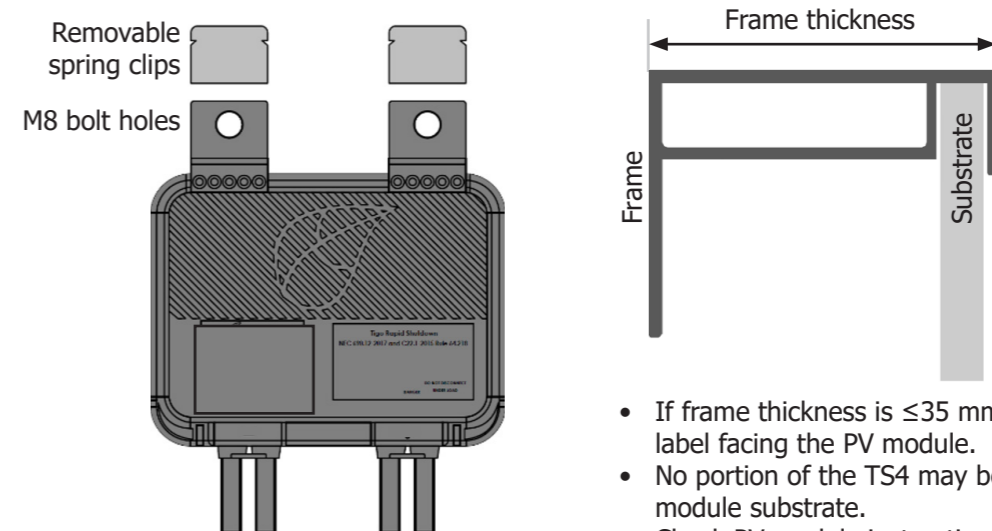


- Do not install TS4s that are physically damaged or have damaged or substandard wiring or connectors.
- Do not connect or disconnect TS4s under load.
- When used as a PVRSS solution, all solar modules in the array must be equipped with TS4-A-F/2F and RSS transmitter PVRSE. Rapid shutdown is initiated upon AC power loss that stops power to the RSS transmitter.



TS4 Mounting Options

For frameless modules, use M8 bolts torqued to 10.2 Nm.



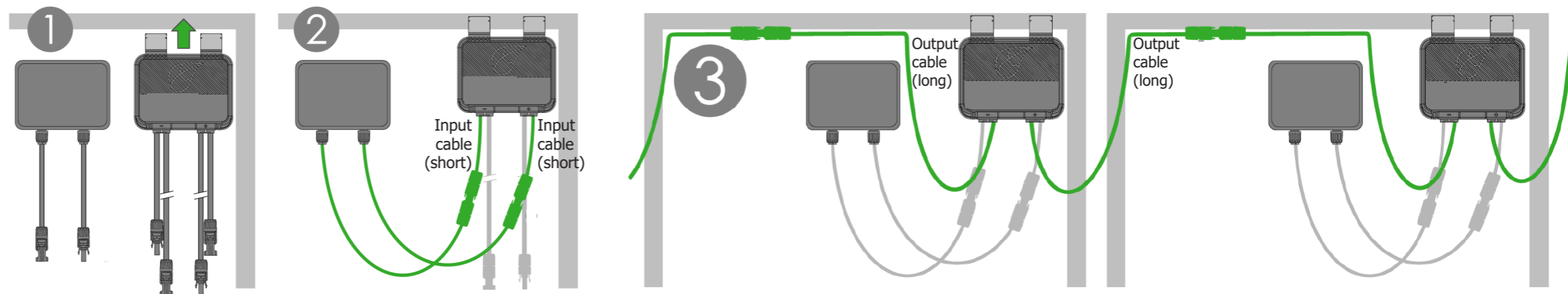
- If frame thickness is ≤ 35 mm (1.4 in.), install with the TS4 label facing the PV module.
- No portion of the TS4 may be ≤ 12.7 mm (.5 in.) from the module substrate.
- Check PV module instructions for restrictions on mounting devices under the module.

Install TS4-A-Fs

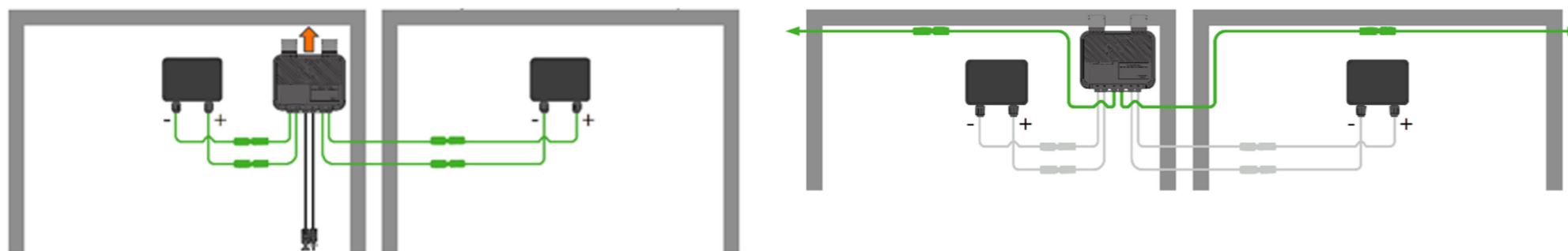
1. Connect the short input cables to the PV module.
2. Connect the long output leads to the adjacent TS4 to create a string.



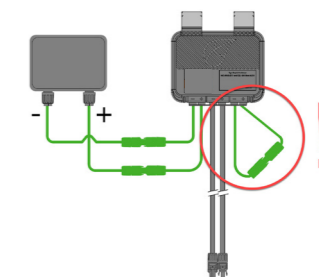
- Always assume that TS4s are in an ON state.
- Ensure cable glands face down and cannot collect moisture.
- Disconnect TS4s from the array string before disconnecting from a PV module.
- **Always connect short input cables before connecting long output cables.** Failure to do so may void the warranty.



Install TS4-A-2Fs



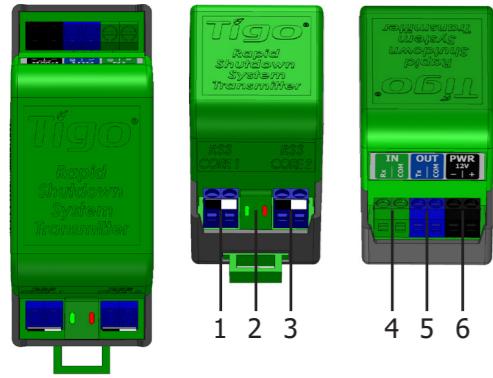
If connecting a TS4-A-2F to only one solar module, connect the TS4 #2 input cables to each other.





- All PVRSE components must be installed and maintained by qualified personnel in accordance with applicable electrical codes and instructions in the [TS4-A-F/2F with RSS Transmitters Installation Manual](#).
- Improper installation may cause damage not covered by the warranty.
- Adhere to ANSI/NFPA 70 (North America) and local electrical code requirements.

The RSS Transmitter Mount on a 35 mm DIN rail within a NEMA 1 (indoors) or NEMA 4 (outdoors) enclosure.

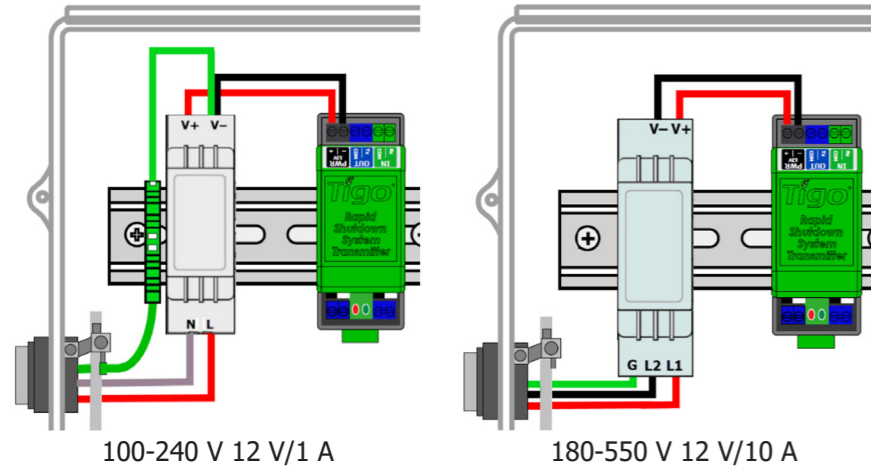


- 1 Core 1 terminals
- 2 Signal status LEDs
- 3 Core 2 terminals
- 4 IN Rx/COM receive terminals
- 5 OUT Rx/COM receive terminals
- 6 Power (- and + 12 V) terminals

- All solar modules in an RSS string must be controlled by a TS4-A-F or TS4-A-2F device. The rapid shutdown system (RSS) controls all conductors.
- This RSS must be connected to an automatic system that initiates rapid shutdown upon the activation of the AC system disconnect. The RSS transmitter must be powered from the same power that the rapid shutdown initiator (RSI) will interrupt in order to trigger a shutdown of the inverter.
- Rapid shutdown occurs within 30 sec. after an AC disconnect (inverter or switch) disconnects AC power to the inverter and RSS transmitter, ceasing transmission of a keep-alive signal.

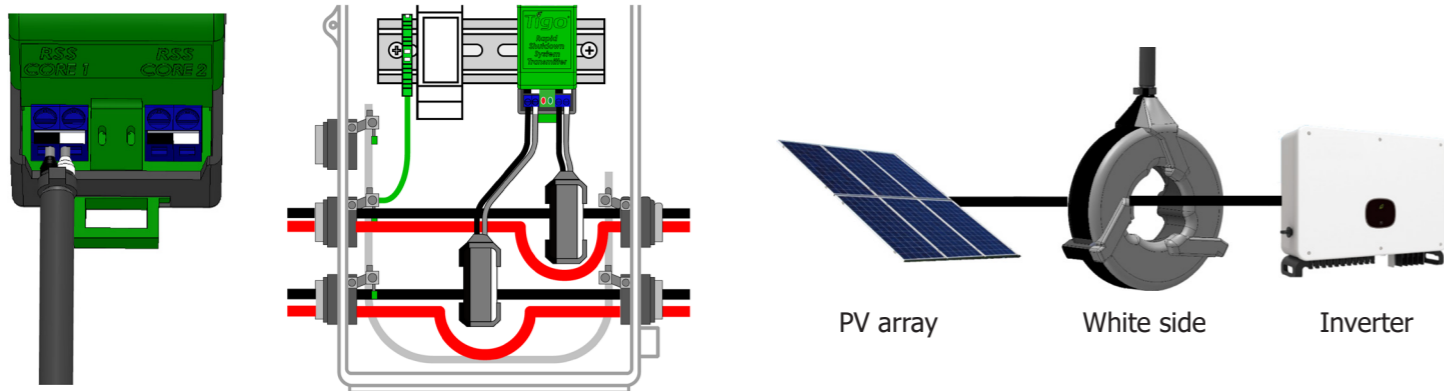
Connect a Power Supply

- Transmitters must be on the same AC branch circuit as the inverter.
- Connect one standard, 100-240 V 12 V/1 A power supply per transmitter or connect one commercial, 180-550 V/10 A power supply to up to ten transmitters with parallel connections.



Connect a Core

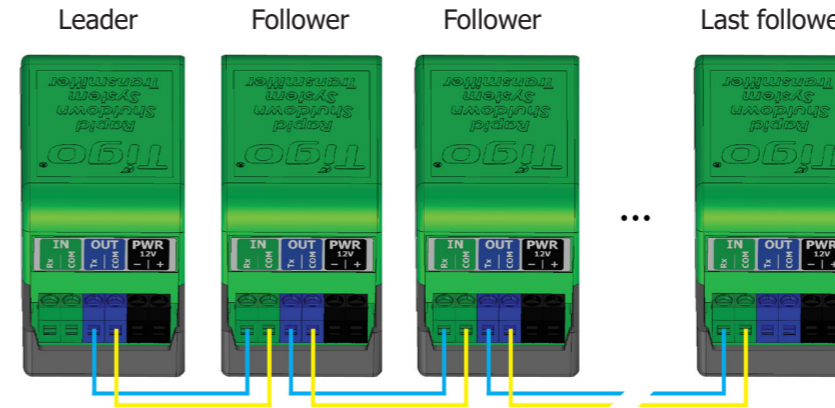
- Insert core wires into matching white/black core terminals.
- Route up to ten negative PV conductors through a core.
- The white side of the core must face the inverter.
- Maximum home run length is 300 m (985 ft.).



Connect Signal Wiring

- Connect 14 – 22 AWG wires between *OUT/Tx* and *IN/Rx* terminals and between *OUT/COM* and *IN/COM* terminals.
- Check that Tx/Rx wires never contact *COM* terminals.

The maximum length of signal wire between transmitters is 30.5 mm (100 ft.).



If connected correctly:

- The leader transmitter displays a continuous red LED and a blinking green LED.
- Follower transmitter LEDs blink green simultaneously with no red.

Specifications and Additional PVRSS UL 1741 Compliance Information

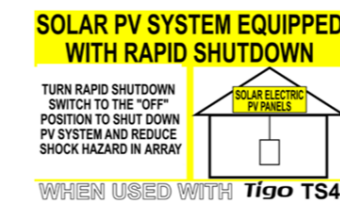
Model	Max. Power	Max. Input V	Max. Input I _{MP}	Max. Input I _{sc}	Max. System V ¹
TS4-A-F 15 A	700 W	80 V	15 A	15 A	1000/1500 V
TS4-A-F 25 A	700 W	80 V	20 A	25 A	1000/1500 V
TS4-A-2F 15 A	1000 W	80 V	15 A	15 A	1000/1500 V
TS4-A-2F 25 A	1400 W	80 V	20 A	25 A	1000/1500 V

¹ Depending on connection method.

- Caution: Risk of fire and shock hazard. Device(s) must be protected at system level (PV string) with PV fuse rated maximum 20 A, minimum voltage rating based on system voltage, 600 V_{DC}, 1000 V_{DC}, or 1500V_{DC}.
- TS4-A-F/2F PV array (DC) conductors are 12 AWG.
- Normal operating temperature range is -30 °C to 70 °C.
- TS4-A-F/2Fs are compatible with the grid support function described in UL 1741 Tables SA9.1 and SA10.1: response to low- and high-voltage ride-through (L/HVRT) and low- and high-frequency ride-through (L/HFRT) requirements.
- Connectors from different manufacturers cannot be mated with each other.
- Modules must not be installed in readily accessible locations (Canada only).

WARNING – THIS PHOTOVOLTAIC RAPID SHUTDOWN EQUIPMENT (PVRSE) DOES NOT PERFORM ALL OF THE FUNCTIONS OF A COMPLETE PHOTOVOLTAIC RAPID SHUTDOWN SYSTEM (PVRSS). THIS PVRSE MUST BE INSTALLED WITH OTHER EQUIPMENT TO FORM A COMPLETE PVRSS THAT MEETS THE REQUIREMENTS OF NEC (NFPA 70) SECTION 690.12 FOR CONTROLLED CONDUCTORS OUTSIDE THE ARRAY. OTHER EQUIPMENT INSTALLED IN OR ON THIS PV SYSTEM MAY ADVERSLY AFFECT THE OPERATION OF THE PVRSS. IT IS THE RESPONSIBILITY OF THE INSTALLER TO ENSURE THAT THE COMPLETED PV SYSTEM MEETS THE RAPID SHUT DOWN FUNCTIONAL REQUIREMENTS. THIS EQUIPMENT MUST BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

In accordance with Section 690.56(C) of the NEC (NFPA 70), a rapid shutdown system label must be placed no more than 1 m (3 ft.) from the initiator (AC disconnect) or service panel containing a means of disconnection if not at the same location.



Resources



Tigo Energy, Inc.
655 Campbell Technology Pkwy.
Campbell, CA 95008
+1 408 402 0802