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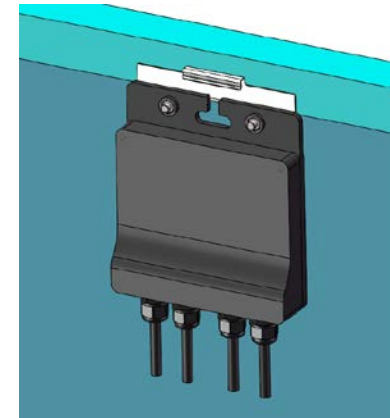
NEP RSD System Installation Procedures

Release: March 8, 2022



Step-1: Mount PVG

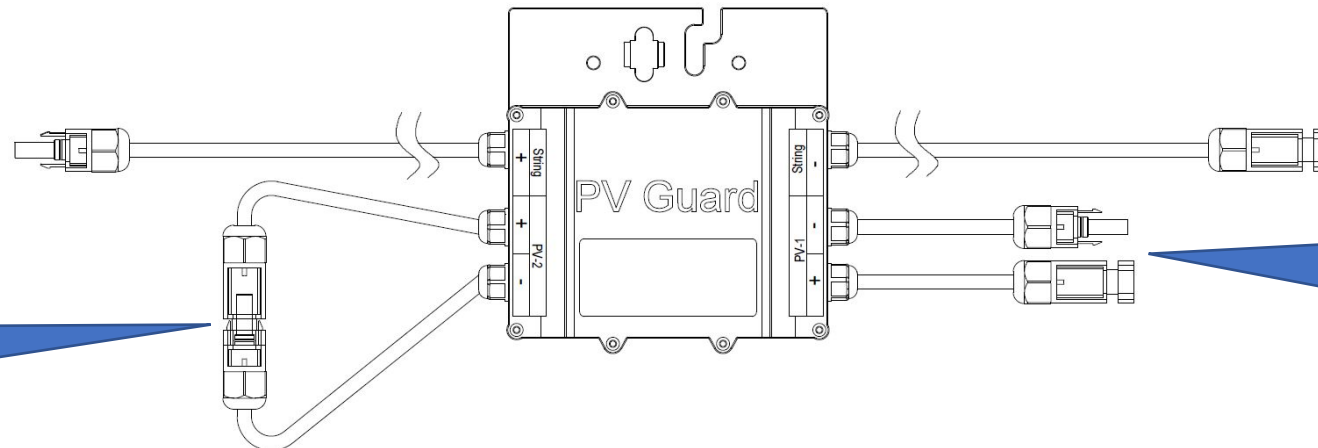
- PVG can be mounted on PV panel frame or on a rail
 - Follow module manufacturer's instructions if mounted on frame [Ref: MOUNTING GUIDE PVG]
- A minimum 0.5 inch **MUST** be kept between any portion of PVG to the backside of a PV panel
 - Violation may result in overheat on both PVG and PV panels
- PV cable between PV panels and PVG including extension cable should not be more than 2.0 meters





Step-2: Connect PVG to modules

- **PVGs must be connected to PV modules before connecting homeruns**
- While plugging or unplugging PVGs in a system, DC switch on the inverter must be turned off



Unused port shall be shorted

PV-1 must be connected to a PV panel to power the unit



Step-3: Test String Output Voltage of PVG

- PVG default state from factory is OFF
- Safety voltages (OFF) when PV-1 port is powered by a PV module
 - ✓ PVG_1 and PVG_4: 0.65 Vdc
 - ✓ PVG_2: 1.4 Vdc
 - ✓ PVG_3: 1.8 Vdc



Step-4: Connect Homeruns

- **PVGs must be connected to PV modules before connecting homeruns**
- Following steps are required to reduce cross interference between PLC signals from different PVG controllers
 - Separate raceway of homeruns for different PVG controllers as far as possible
 - Keep positive and negative conductors of homeruns of the same PV string as close as possible to a twisted pair in a cable tray
 - Avoid conductors of homeruns for different PVG controllers in the same raceway
 - Separate conductors for different PVG controllers as far as possible

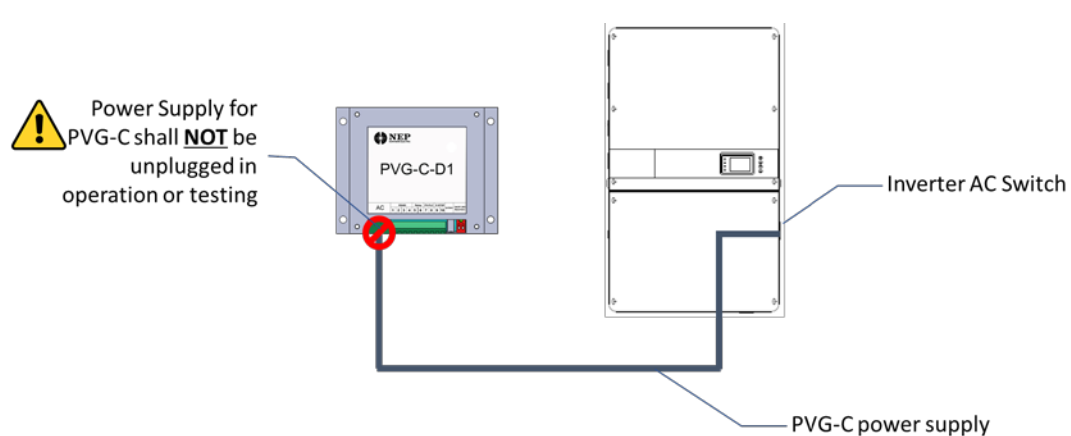
Step-5 and Step-6 are only for **retrofit cases** using non inverter built-in PVG controllers

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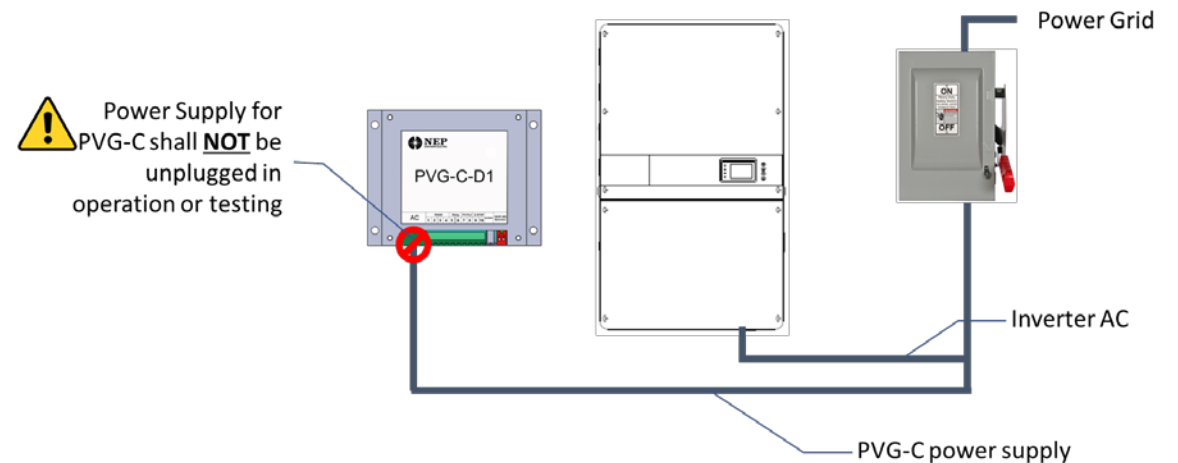


Step-5*: Wire PVG Controller Power Supply

- Power conductor to PVG controller shall be 18AWG or 20AWG
- PVG controller shall never lose power supply while inverter is running and taking PV power



Option 1



Option 2

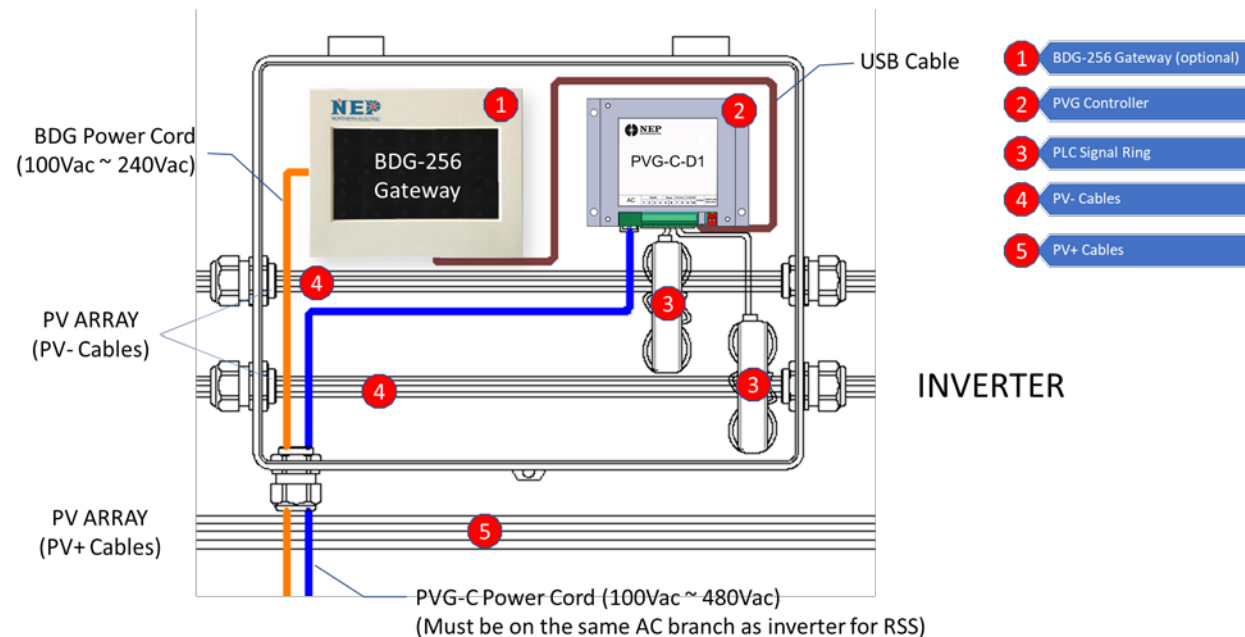
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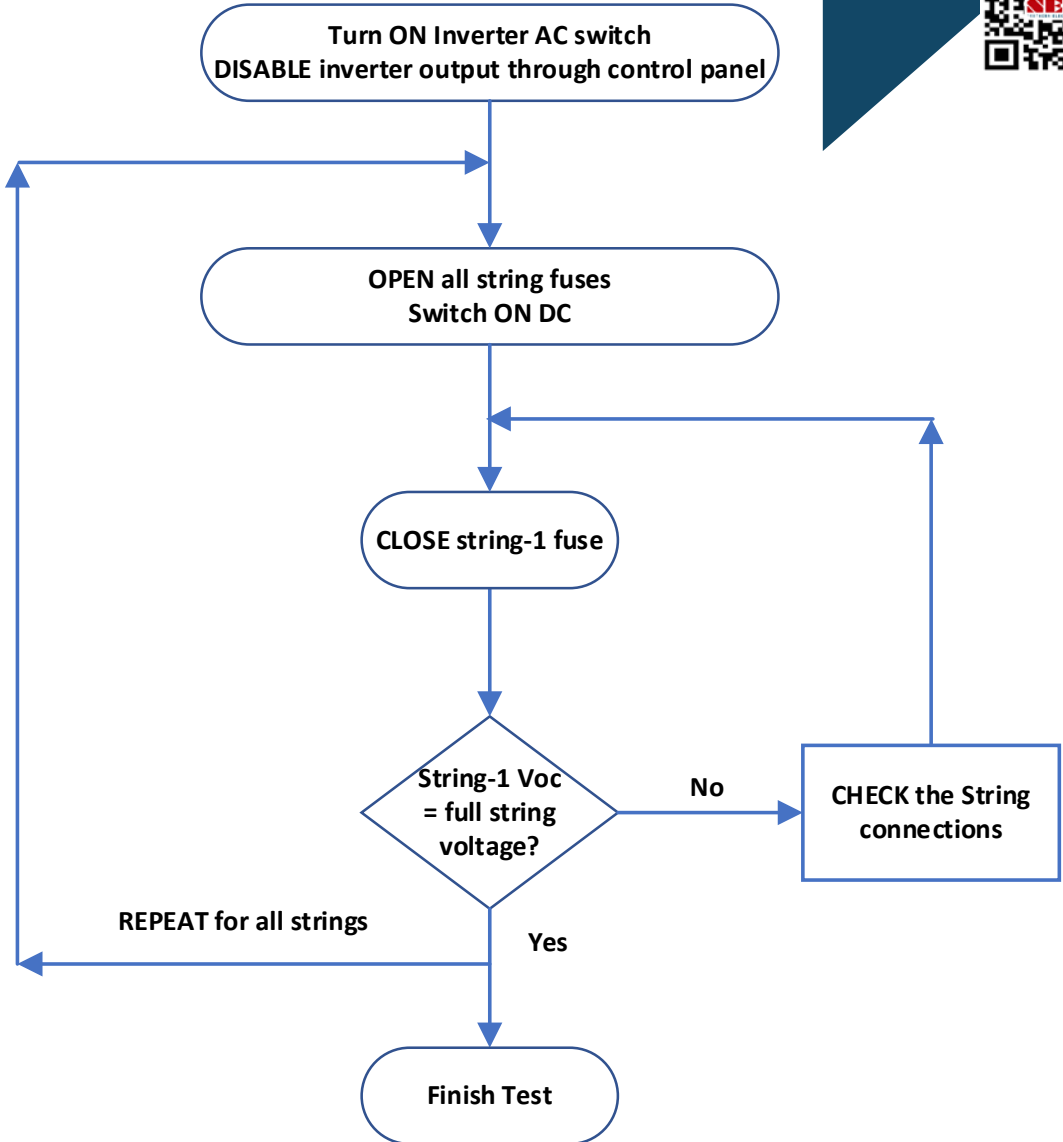
Step-6*: Connect PVG Controller Signal Ring

- Only positive **OR** negative PV cables should pass through the signal ring
 - PLC signal may cancel each other if both “positive” and “negative” cables pass through the signal rings





Step-7: Check String Voltage (Inverter w/ built-in PVG transmitter)





Step-8: Commissioning

- After all strings of the site have been tested, inverters can be turned on.
- String current should be checked to confirm on correct operation.



Trigger Rapid Shutdown

- Rapid Shutdown should be triggered by pulling the site AC switch that disconnects BOTH inverters AC and PVG power supply
 - String voltage should drop to safety voltage within 30 seconds