



Quick Reference Guide

Connecting External Data Acquisition Systems (DAS) to Solectria PVI 23TL, PVI 28TL and PVI 36TL Inverters

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IMPORTANT SAFETY INSTRUCTIONS

In this guide “inverter” or “inverters” refers to the inverter models: PVI 23TL, PVI 28TL and PVI 36TL.

This guide contains important instructions that must be followed to connect an external Data Acquisition System (DAS) to the inverter(s).

To reduce the risk of electrical shock, and to ensure the safe installation and operation of the inverter, the following safety symbols are used to indicate dangerous conditions and important safety instructions:



WARNING: This indicates a fact or feature very important for the safety of the user and/or which can cause serious hardware damage if not applied appropriately. **Use extreme caution when performing this task.**

- Solectria PVI 23-36TL inverters support up to 32 inverters/devices on the Modbus (RS-485) daisy chain.
- Solectria recommends that the Modbus (RS-485) daisy chain for PVI 23-36TL inverters is limited to a maximum of 1600 ft (500m).

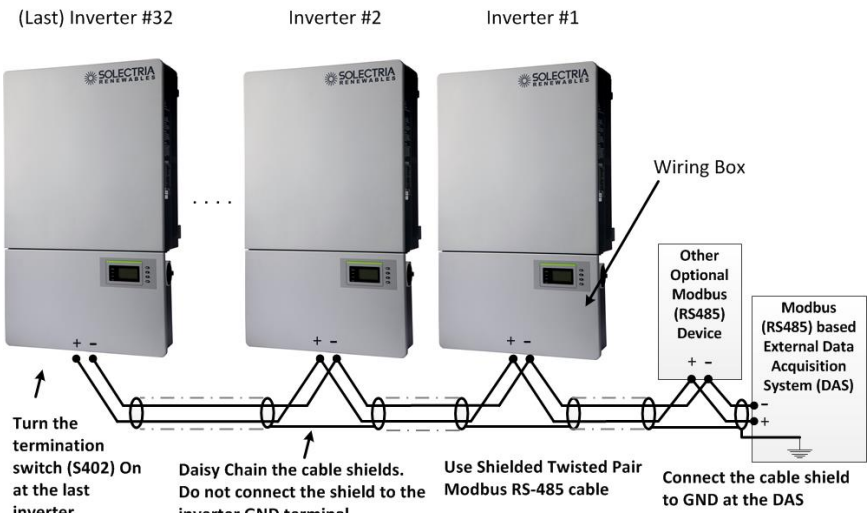


Fig. 1: TL inverters in a Modbus (RS-485) daisy chain with an external DAS

- Care must be taken when daisy chaining the inverters as shown above utilizing a Shielded Twisted Pair Modbus cable such as Belden 9841. Star or T connections should be avoided.
- The shield continuity should be maintained for the entire length of the daisy chain and should only be connected to ground (GND) at the Data Acquisition System (DAS).



Warning: Risk of Electric Shock.

Make sure all DC and AC power to the unit has been disconnected before opening the inverter wiring box.

1. Open the wiring box and remove the protective cover.
2. Bring the cable into wiring box through knockout holes at the bottom.
3. Connect the Modbus (RS-485) wires to the green Phoenix wiring (P208) ensuring correct polarity and using a twisted pair in the shielded twisted pair cable.

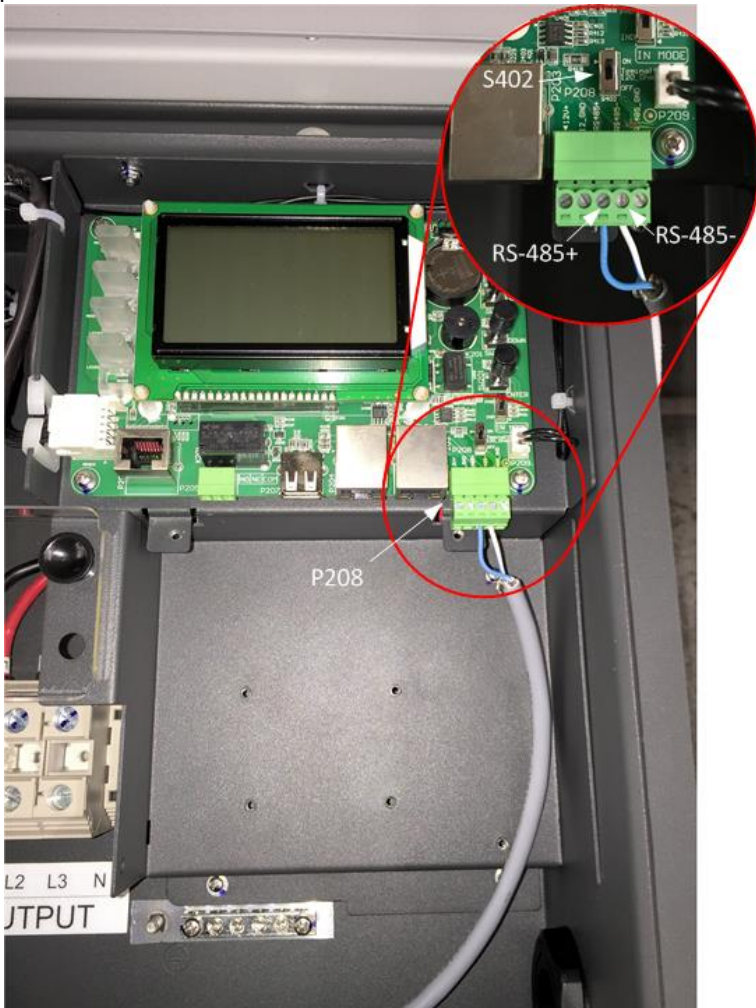


Fig. 2: The above image shows the Modbus (RS-485) cable connection where the Modbus daisy chain ends. Notice how the cable shield is not landed inside the inverter.

4. If the inverter is the **last** device in the daisy chain, make sure the Modbus termination switch S402 is in the ON position (Up towards the LCD) for Modbus termination. Do not turn the switch to the ON position in any of the other inverters.
5. Only connect the cable shield to ground (GND) at the DAS. Do not connect the shield to any of the inverters.

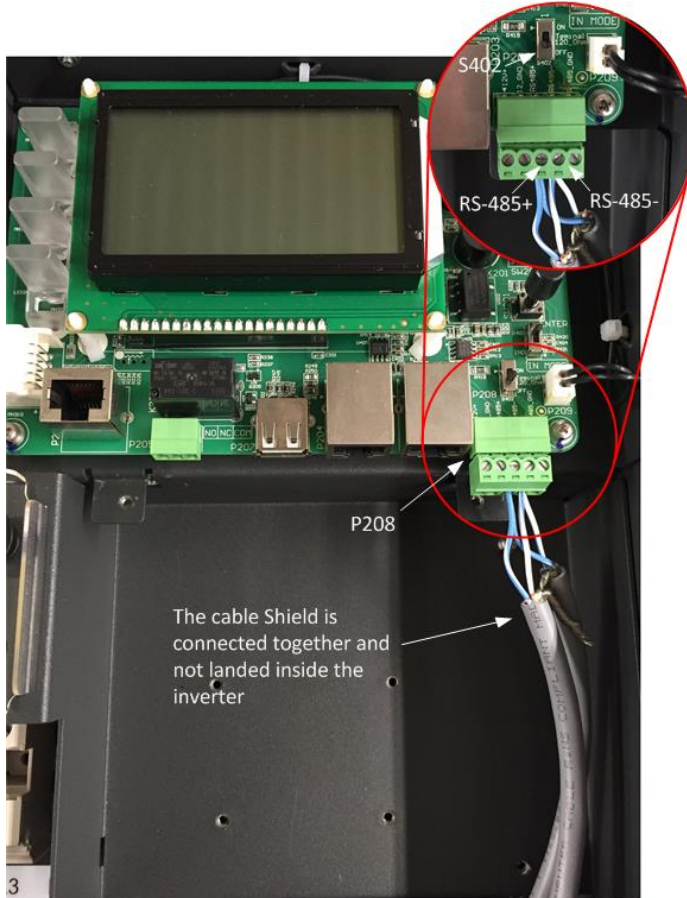


Fig. 3: Notice how the cable shield is daisy chained together and not landed inside the inverter. S402 is in the OFF position, or down towards the Phoenix connector when the inverter is in the middle of the daisy chain.



Warning: Risk of Electric Shock.

Make sure all shield wires are properly secured and insulated to prevent shorting to any other components inside the inverter.

6. Reinstall the protective cover and close the wiring box.
7. Reconnect AC and DC power.