Application Note AN015

SolaX RS485 Wiring Guide

Connecting the Levelise Hub to the SolaX battery inverters using RS485

Overview

Hub 2 includes an RS485 cable in the box that can be used to connect the Hub to compatible inverters from SolaX (listed below). In case a cable of a different length is required, or to make use of the waterproof glands on either the Hub or the inverter, this note explains how to modify the Hub 2-Inverter RS485 cable provided.

Compatible Models

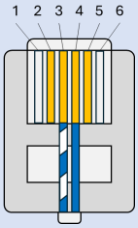
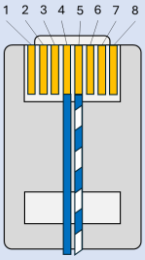
- X1-AC
- X1-FIT G4
- X1-HYBRID G4
- X3-HYBRID G4

What You'll Need

- Hub 2-Inverter RS485 cable (included in the box)
- 1x RJ45 connector
- RJ45 crimping tool
- Wire strippers
- Screwdrivers
- Cable tester

Quick Summary for Experienced Users

If you're confident, use the following pinout reference table to re-terminate the RJ45 (inverter) end of the Hub 2-Inverter RS485 cable supplied in the box. **Do not modify the RJ11 (Hub) end:**

Pin	**Hub End** (RJ11 Connector – do not modify)	**SolaX End** (RJ45 Connector)
		
1	Not present	Unused by Hub
2	Unused by Hub	Unused by Hub
3	**Blue & white (RS485 B)**	Unused by Hub
4	**Blue (RS485 A)**	**Blue (RS485 A)**
5	Unused by Hub	**Blue & white (RS485 B)**
6	Not present	Unused by Hub
7	Not present	Unused by Hub
8	Not present	Unused by Hub

Otherwise, follow the detailed step-by-step instructions below to modify the Hub 2-Inverter RS485 cable provided.

Detailed Steps-by-Step Guide

1. **Prepare the Cable**
   - Cut off the RJ45 connector from the Hub 2-Inverter RS485 cable using wire cutters.

     Important: Only modify the RJ45 (inverter) end of the cable. Never cut, re-terminate or replace the RJ11 (Hub) end – poorly re-terminated RJ11 connectors cause unreliable communication with Hub 2. If the cable needs extending, make the extension at the RJ45 end.

   - Strip ~25mm of the outer sheath from the cut end. Be careful not to nick the inner conductors.
   - Untwist and straighten the wire pairs.

2. **Rearrange the Wires**
   - Align wires from left to right according to the SolaX pinout table above.
   - Ensure:
     - **Blue wire (RS485 A)** is in **position 4**
     - **Blue & white wire (RS485 B)** is in **position 5**

3. **Terminate the Cable**
   - Trim the wires evenly, leaving ~12mm exposed.

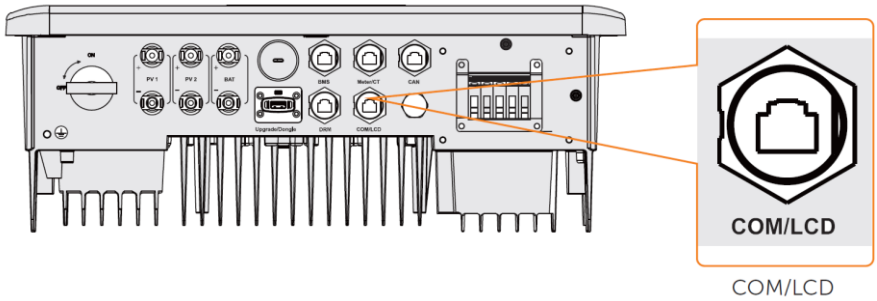
     Important: Ensure the cut end is correctly fed through any required waterproofing glands for either the Hub and/or the inverter before terminating the cable.

   - Insert wires into the RJ45 plug, ensuring full insertion and correct alignment as shown below.

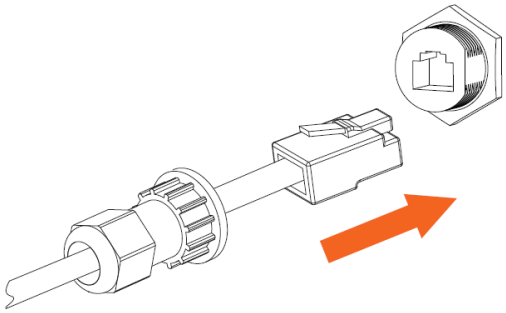
     Important: Ensure the cable sheath also enters the plug slightly for strain relief.

   - Crimp the connector securely.
   - Use a cable tester to verify continuity and pinout (Recommended).

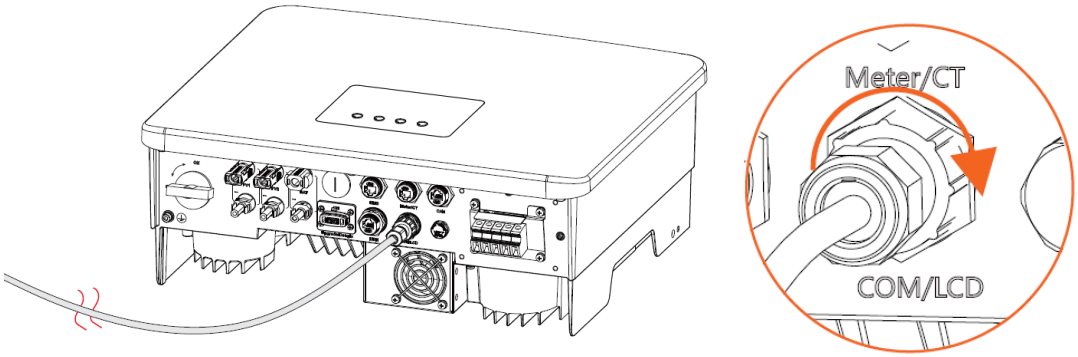
4. **Connect the Cable**
   - Plug the modified RJ45 end into the port marked as ‘COM/LCD’ on the underside of the inverter*.



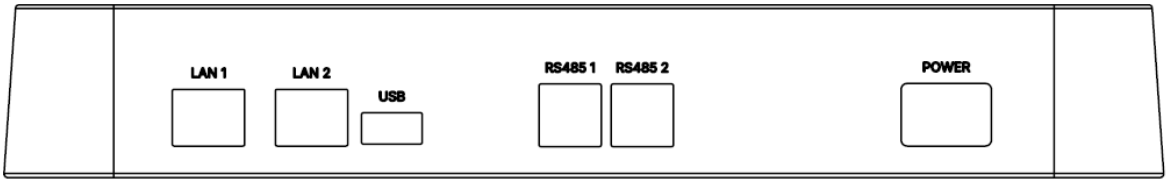
COM/LCD



- If necessary. reattach the waterproof connector by tightening the swivel nut for sealing.



- Plug the unmodified RJ11 end into the port marked ‘RS485 1’ on Hub 2.



* IMPORTANT: Where these steps differ from or conflict with the manufacturer instructions, the manufacturer’s instructions take precedence

- If using the Outdoor Kit, ensure all cable glands are properly sealed.

Additional Resources

For more details on SolaX product, refer to SolaX's documentation at solaxpower.com