SP PRO Series 2i - Managed Batteries Installation

Introduction

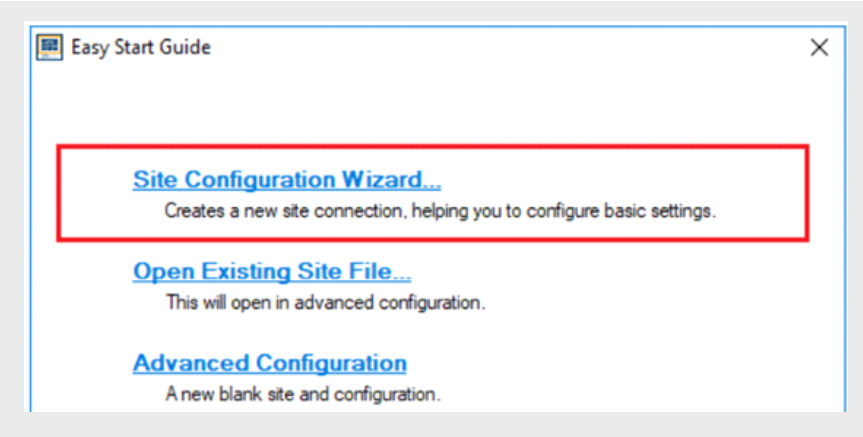
These installation notes aim to assist in the installation of closed-loop ('fully managed') batteries with Selectronic SP PRO Series 2i.

Summary of Steps

The following checklist is a summary of the steps needed to complete the installation.

Prior to installation:

- ☐ Install the latest version of SP LINK on your Windows PC available from www.selectronic.com.au/splink
- ☐ Complete the SP LINK Site Configuration Wizard to verify battery compatibility.



- ☐ Read through the relevant sections in these installation notes in advance.

During installation:

- ☐ Install batteries according to the battery manufacturer's installation manual and these installation notes.
- ☐ Install DC cabling according to the SP PRO manual.
- ☐ Connect the suitable communication cable from battery to the SP PRO.

After installation:

- ☐ Refer to the Power On section in these notes for any special procedures.
- ☐ Connect to the SP PRO via SP LINK.
- ☐ Configure the SP PRO using settings generated from the Site Configuration Wizard.
- ☐ Test and commission the BESS. Refer to the 'Commissioning' section of the SP PRO manual

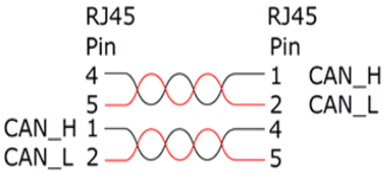
Contents

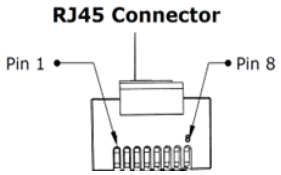
1. Communications Connection to SP PRO

A standard BMS to SP PRO CAN bus crossover cable is supplied with every SP PRO. This will work with most but not all battery types. The type of cable required is specified in the following installation notes.

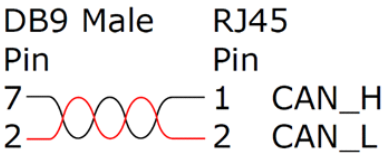
NOTE: For Powerchain systems, the CAN cable only needs to be connected to the L1 system manager SP PRO.

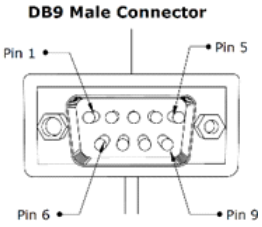
Pinout for the standard "BMS to SP PRO CAN bus" cable

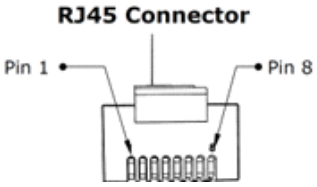




Pinout for MS to SP PRO cable for the LG Standalone modules (Rack mount).



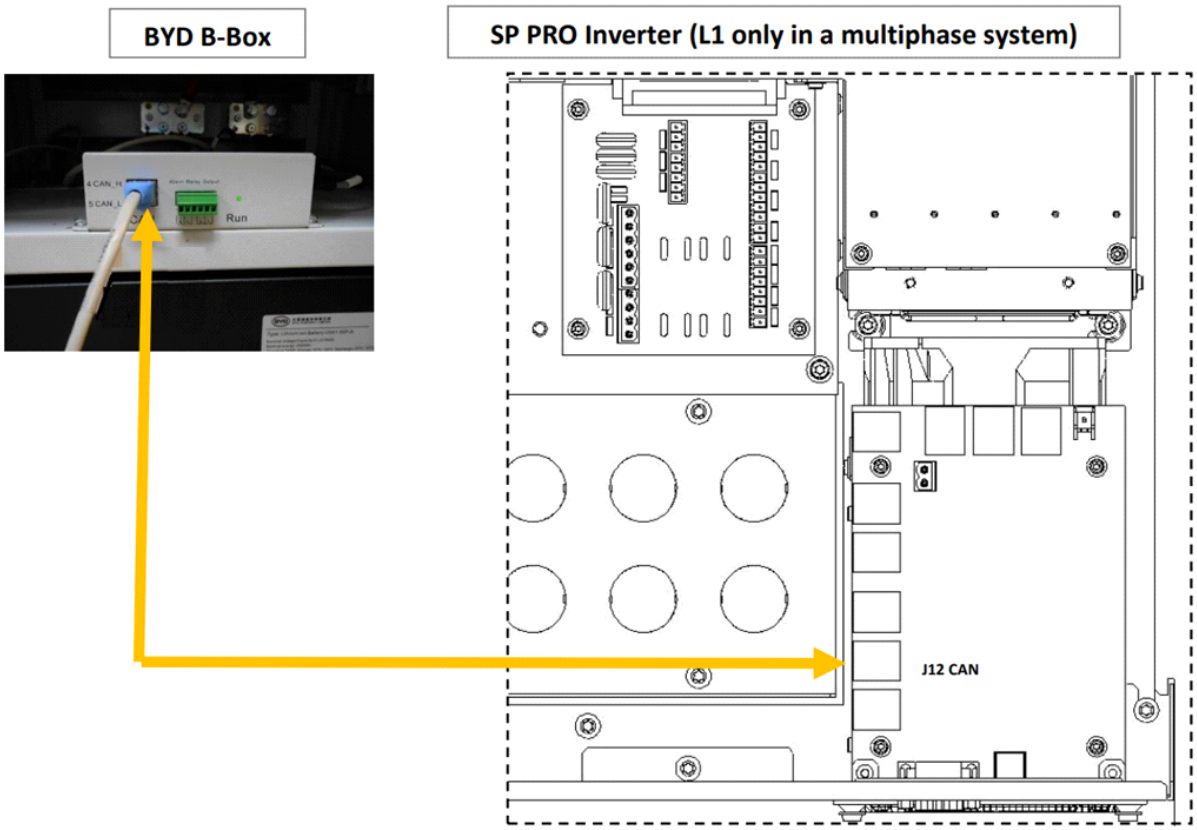




This cable must be purchased separately, and can be can be obtained from our Online Store www.selectronicaustralia.bigcartel.com

2. Installation Notes for BYD B-Plus, B-Plus 13.8 and B-Plus 15.5 in a BYD B-Box

1. When installing a Split phase or Three phase system you must connect the pre-charge / battery sense terminals. The BYD uses the pre-charge function in the SP PRO.
2. Leave the battery temperature sensor connected and rolled up inside the SP PRO. This is not used in a managed battery system.
3. Follow the BYD B-Box instructions to install the BYD B-Box.
4. Connect the standard “BMS to SP PRO CAN bus” RJ45 crossover cable from the SP PRO Comms



3. Installation Notes for Sonnenschein@home Lithium

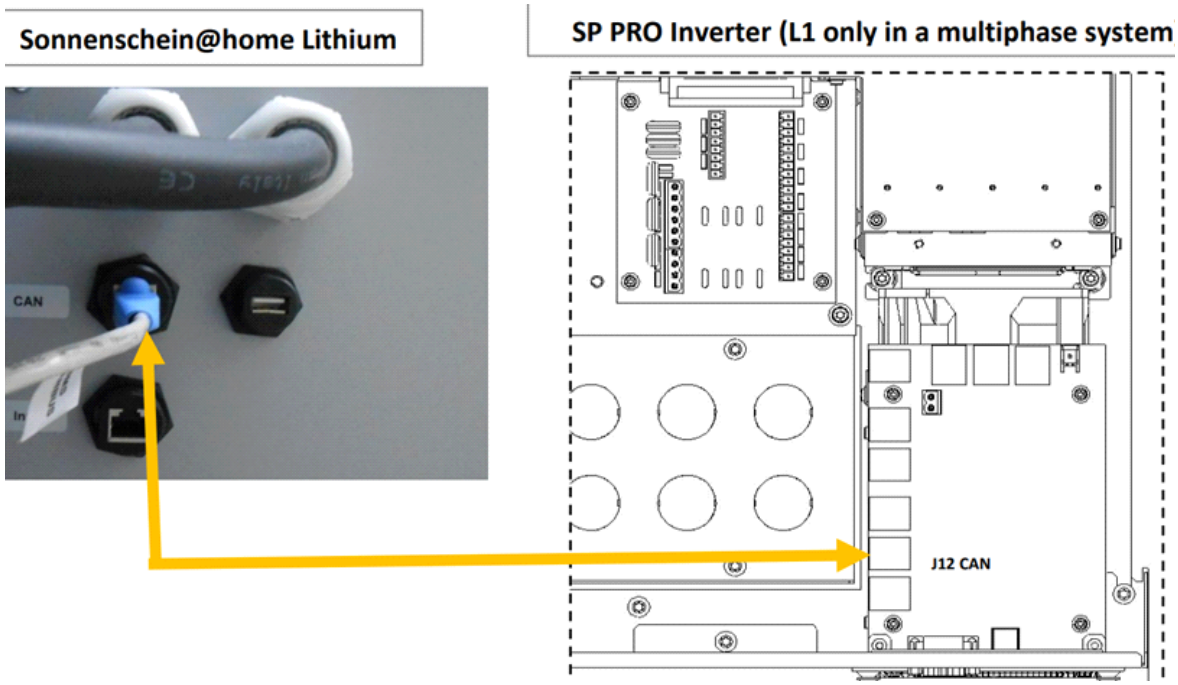
NOTE:

Requires 200A HRC fuses. Not supplied with battery.

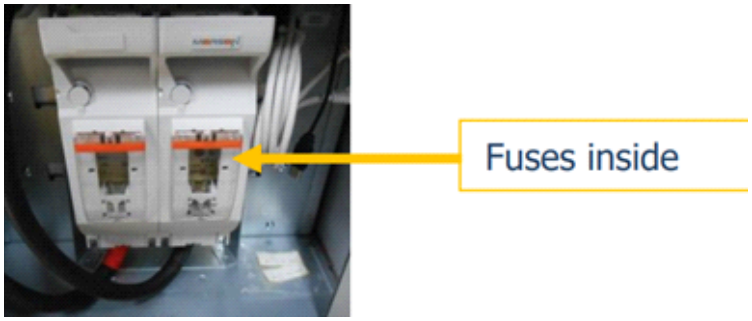
For SPMC482: make sure there are 2x 200A NH fuses (ABB OFAF1H200 or equivalent). In this application ONLY, do not use 250A fuses as specified in the SP PRO installation manual as this may damage the Sonnenschein@home Lithium. A 200A fuse is suitable in this application as the battery voltage for the Sonnenschein@home Lithium is higher (54 VDC) than nominal (48 VDC).

For SPMC481 and SPMC480: 2 x 160A NH fuses (ABB OFAF1H160 or equivalent) installed in each battery box.

1. Leave the battery temperature sensor connected and rolled up inside the SP PRO. This is not used in a managed battery system.
2. Follow the Sonnenschein@home Lithium instructions to install the Sonnenschein@home Lithium.
3. Connect the standard “BMS to SP PRO CAN bus” RJ45 crossover cable from the SP PRO Comms Card to the Sonnenschein@home Lithium. Cable can be connected in either direction.

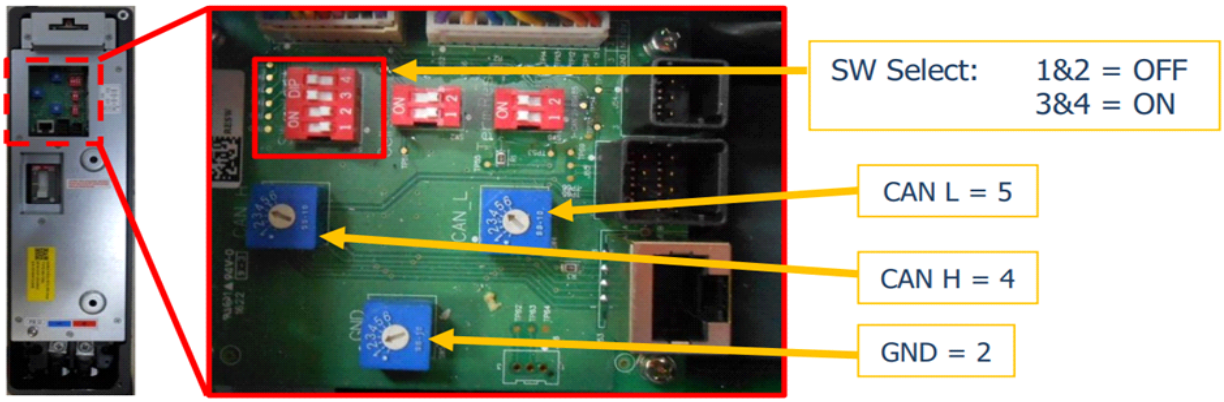


4. Fit two 200A NH fuses (ABB OFAF1H200 or equivalent) for SPMC482 or two 160A NH fuses (ABB OFAF1H200 or equivalent) for SPMC481 into the fuse housing inside the batteries.

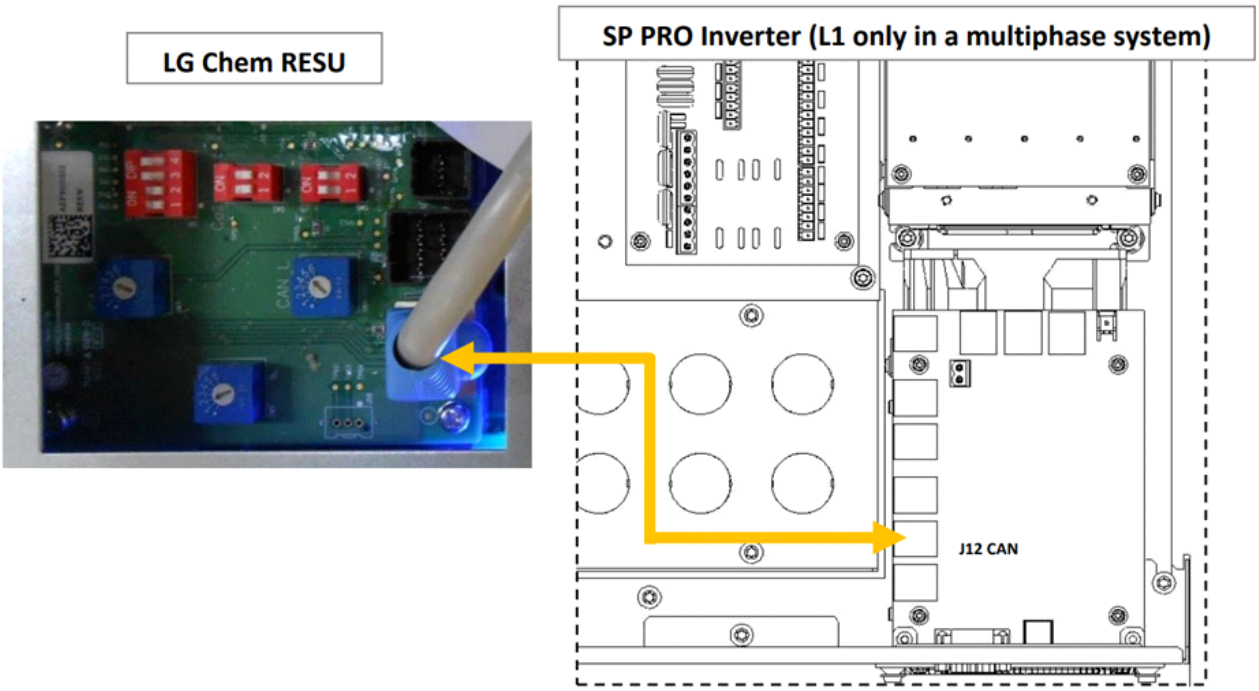


4. Installation Notes for LG Chem RESU (Single Battery)

1. Leave the battery temperature sensor connected and rolled up inside the SP PRO. This is not used in a managed battery system.
2. Follow the RESU instructions to install the RESU battery.
3. Configure the LG Chem RESU dip switch, set “SW Select”: 1&2 = OFF and 3&4 = ON.
4. Configure blue rotary switches, CAN H = 4, CAN L= 5 and GND = 2

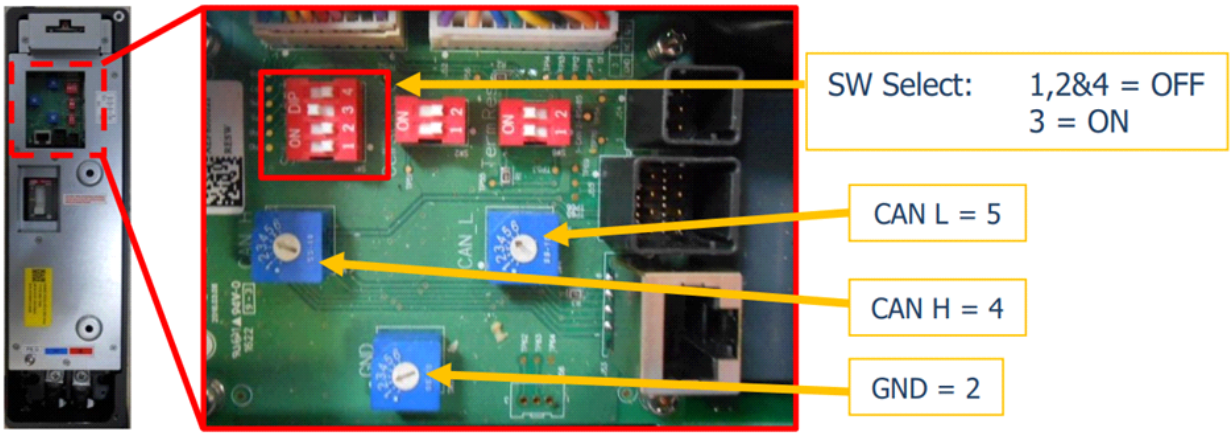


5. Connect the standard “BMS to SP PRO CAN bus” RJ45 crossover cable from the SP PRO comm Card to the RESU. Cable can be connected in either direction.

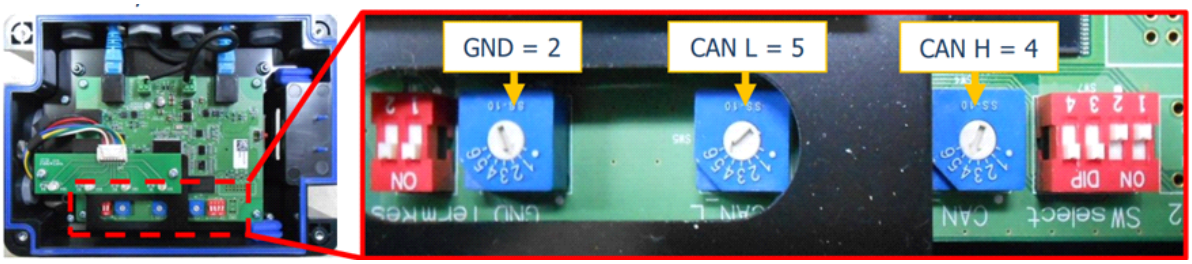


5. Installation Notes for LG Chem RESU Plus (Dual Battery)

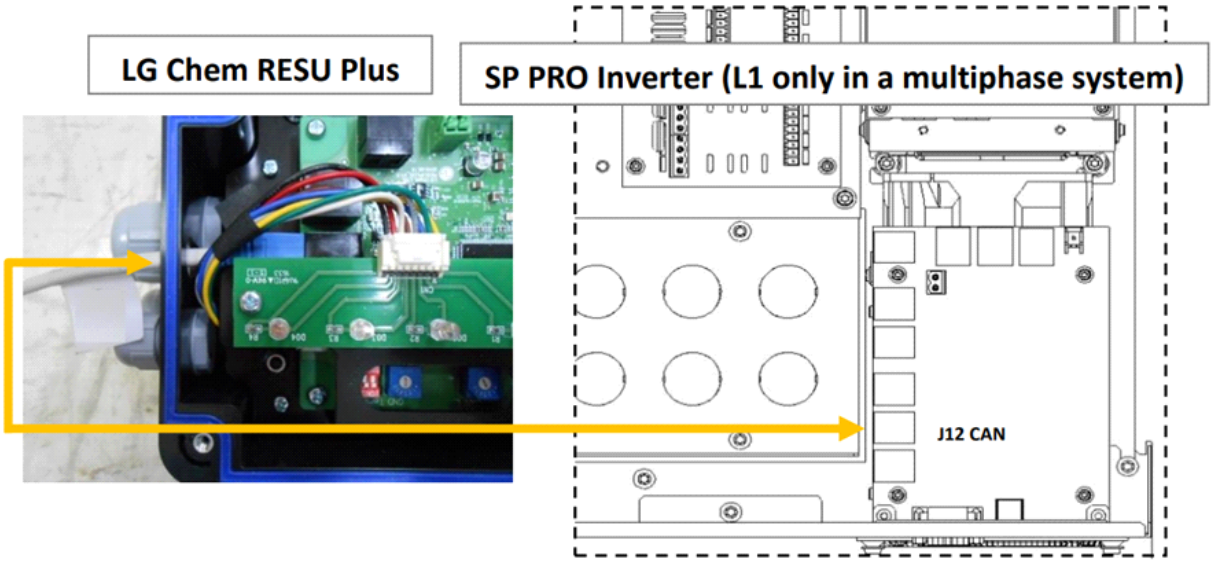
1. Leave the battery temperature sensor connected and rolled up inside the SP PRO. This is not used in a managed battery system.
2. Follow the RESU instructions to install the RESU battery.
3. Configure the LG Chem RESU dip switch, set “SW Select”: 1,2&4 = OFF and 3 = ON.



4. Configure the LG Chem batteries and the LG Chem RESU Plus blue rotary switches: CAN H = 4, CAN L= 5 and GND = 2.

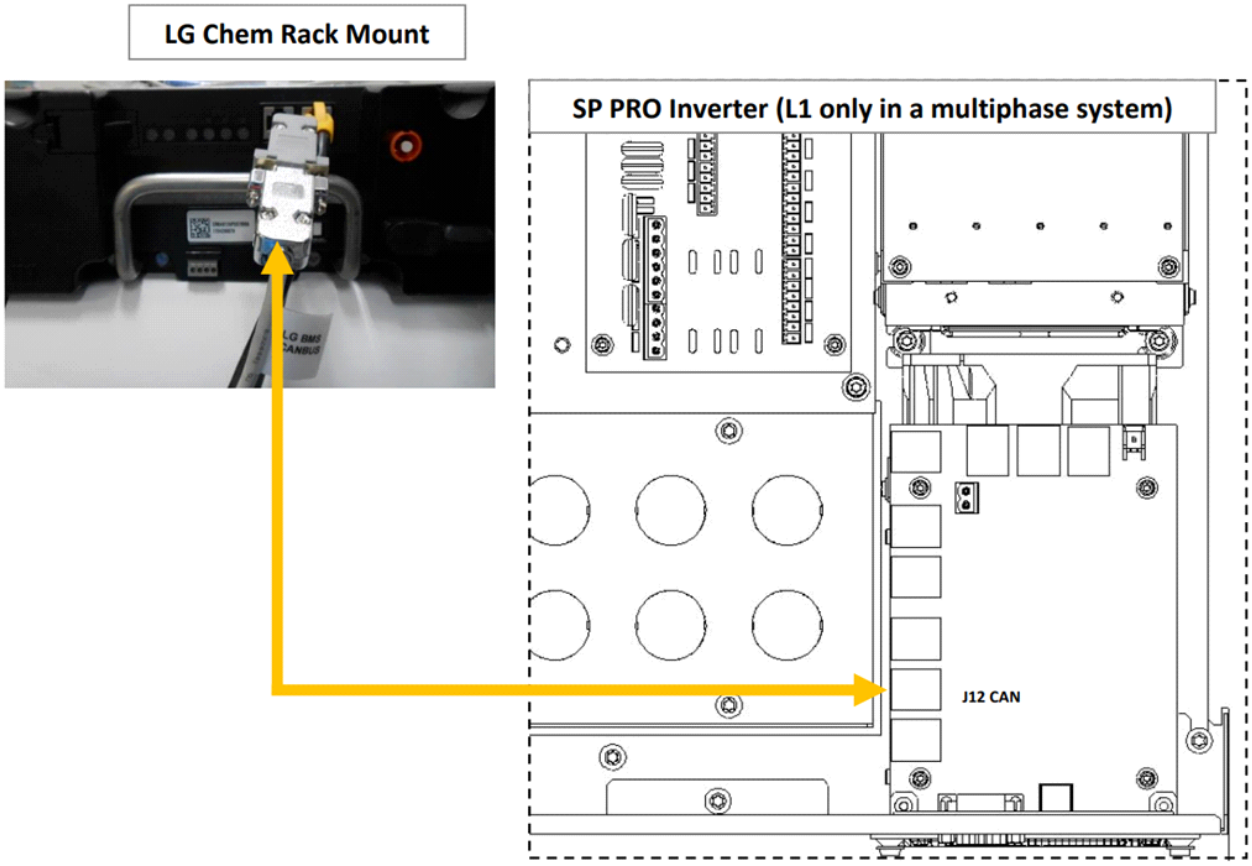


5. Connect the standard “BMS to SP PRO CAN bus” RJ45 crossover cable from the SP PRO comm Card to the RESU Plus. Cable can be connected in either direction.



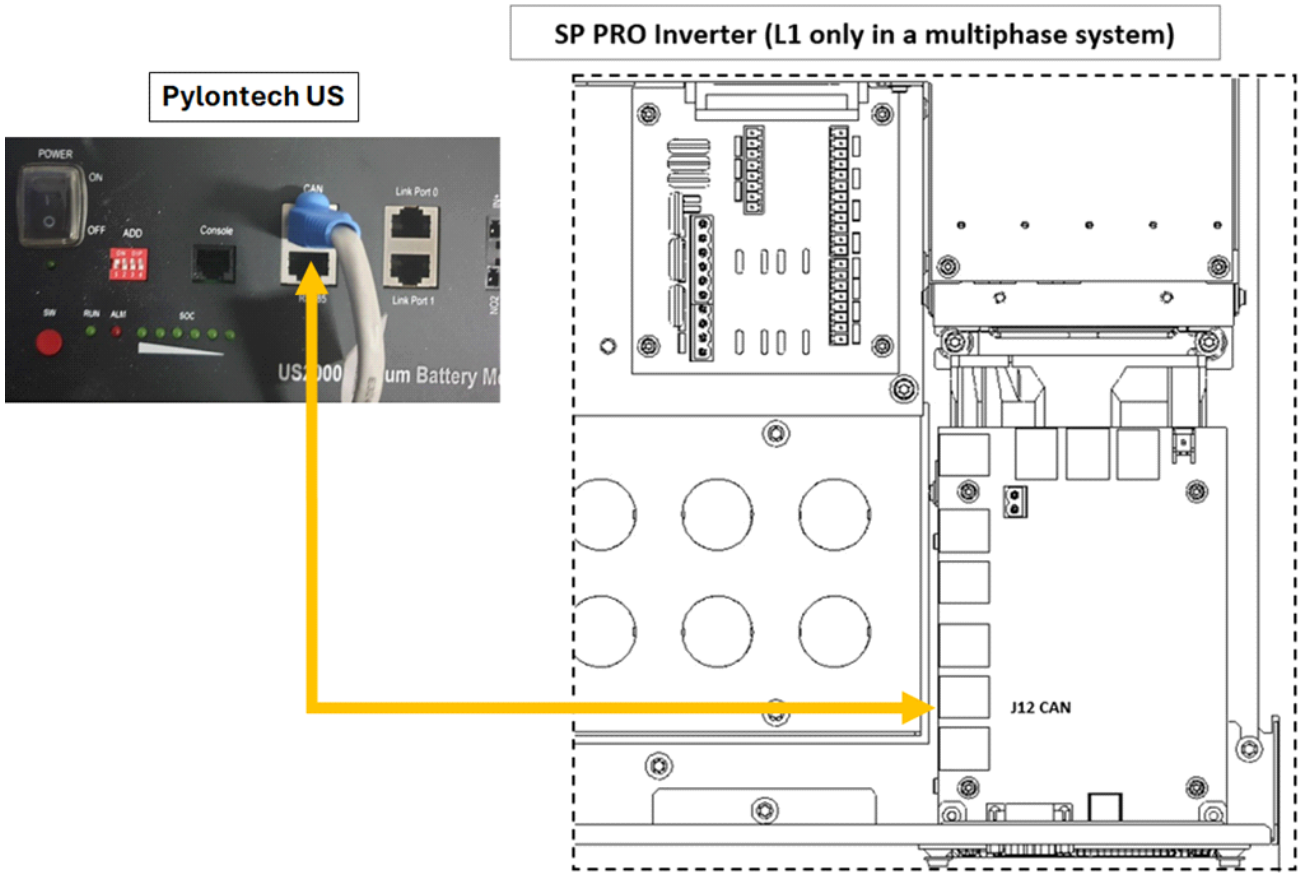
6. Installation Notes for LG Chem Rack Mount

1. Leave the battery temperature sensor connected and rolled up inside the SP PRO. This is not used in a managed battery system.
2. Follow the LG Chem Rack Mount instructions to install the LG Rack Mount.
3. Using the “CAN RJ45-DB9 LM CS1022_01” (purchased separately), connect the RJ45 end of the cable to the SP PRO comm card “SP PRO CAN bus” and connect the DB9 end to the LG Chem Rack Mount battery DB9 cable “BMS CAN bus”.



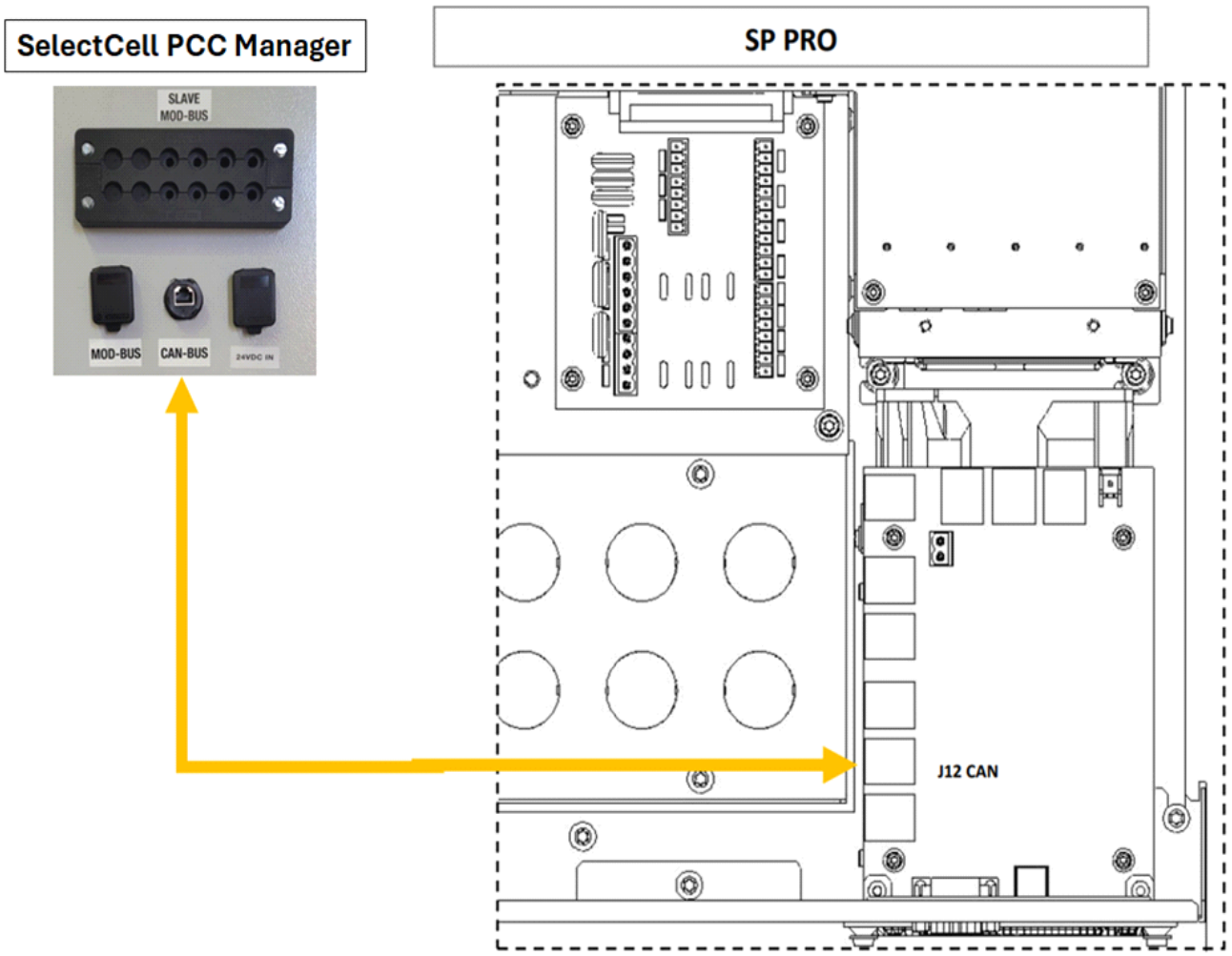
7. Installation Notes for Pylontech

1. Leave the battery temperature sensor connected and rolled up inside the SP PRO. This is not used in a managed battery system.
2. Follow the Pylontech instructions to install the modules.
3. Connect the Grey “BMS to SP PRO CAN bus” RJ45 Connector cable from the SP PRO comm Card to the Pylontech manager module. Cable can be connected in either direction.



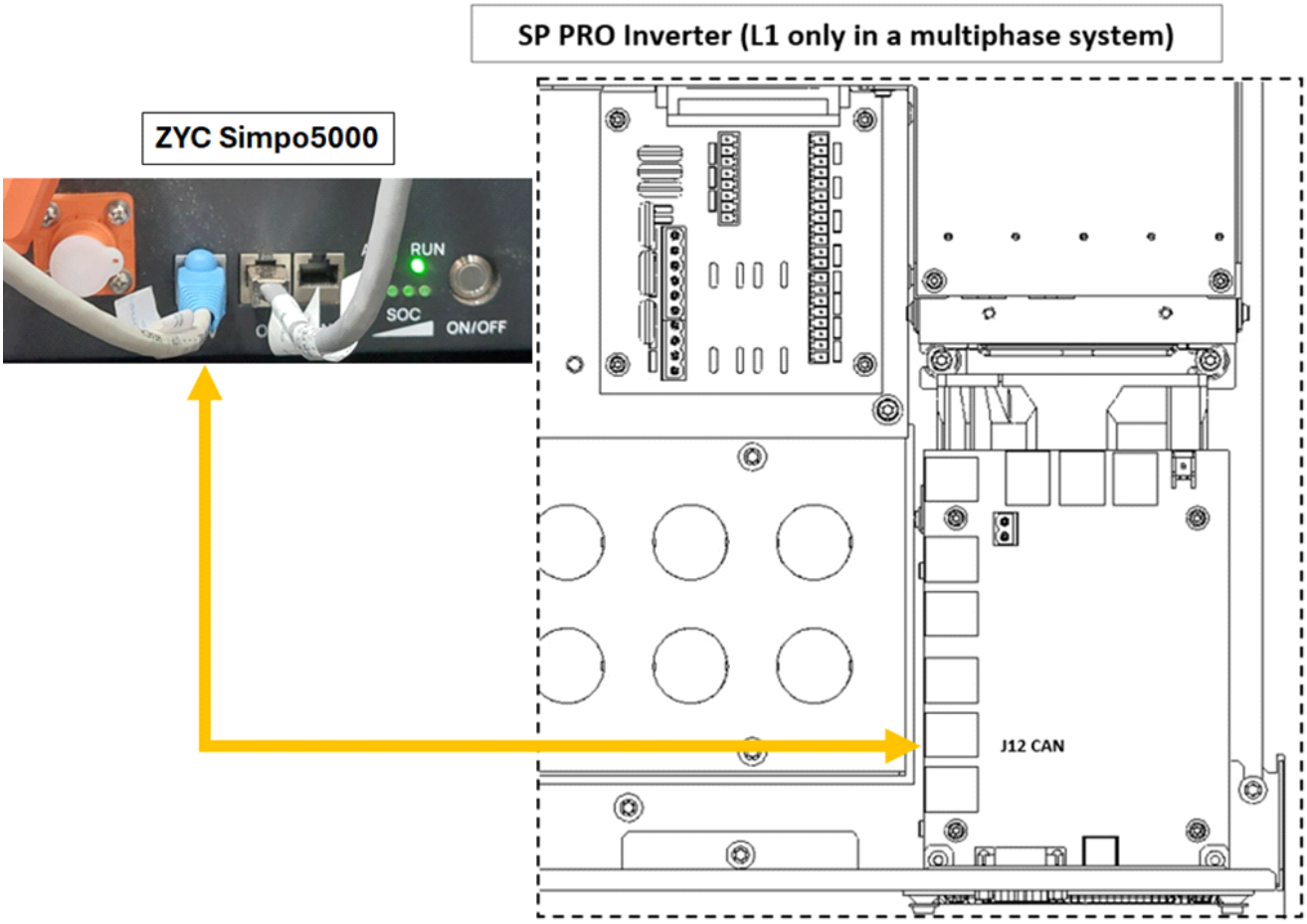
8. Installation Notes for SelectCell

1. Leave the battery temperature sensor connected and rolled up inside the SP PRO. This is not used in a managed battery system.
2. Follow the SelectCell manual to install the modules.
3. Connect the supplied CAT5 data cable from the SP PRO comm Card to the CAN bus port of the SelectCell Master PCC or Standalone PCC.



9. Installation Notes for ZYC

1. Leave the battery temperature sensor connected and rolled up inside the SP PRO. This is not used in a managed battery system.
2. Follow the ZYC instructions to install the modules.
3. Connect the Grey “BMS to SP PRO CAN bus” RJ45 Connector cable from the SP PRO comm Card to the ZYC manager module. Cable can be connected in either direction.



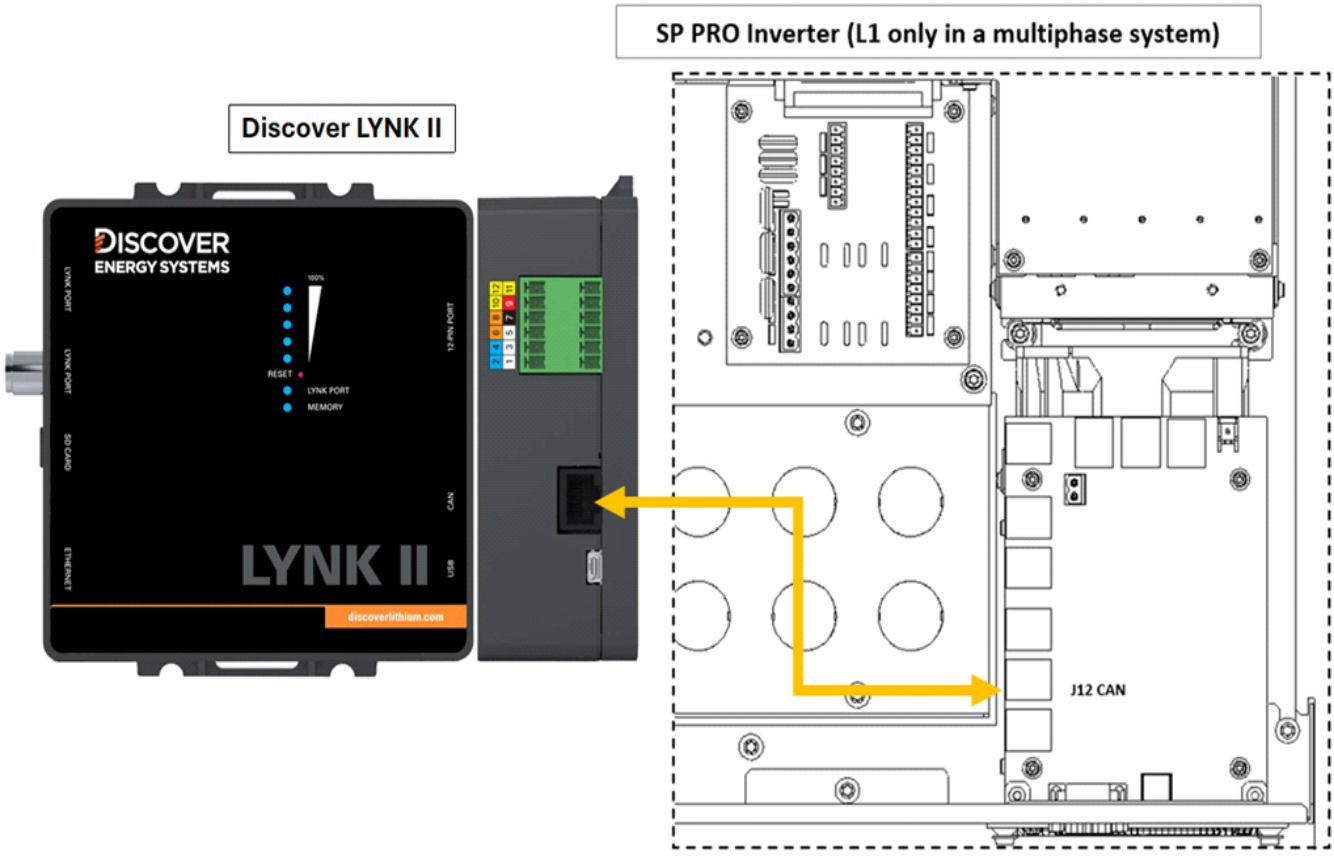
10. Installation Notes for Discover AES Rackmount + LYNK II

1. Leave the battery temperature sensor connected and rolled up inside the SP PRO. This is not used in a managed battery system.
2. Follow the AES Rackmount manual to install the modules.
3. Follow the LYNK II manual to configure the CAN out.

Selectronic: SPMC480-AU, SPMC481-AU and SPMC482-AU inverter chargers

Can Out	Header Jumper	RJ45Pin
CAN L	H4 - 6-8	2
CAN H	H4 - 7-9	2
CAN GND	N/A	N/A

4. Connect the Grey “BMS to SP PRO CAN bus” RJ45 Connector cable from the SP PRO comm



Card to the CAN port of the LYNK II. Cable can be connected in either direction.

11. Power On

There may be specific procedures to be followed for certain battery types. If the correct power on procedure for a given battery type is not followed, the battery may not turn on and run.

In most cases, unless specified otherwise, it is very important to switch on the pre-charge breakers on the SP PRO before the main DC breakers. Failure to do so may result in damage.

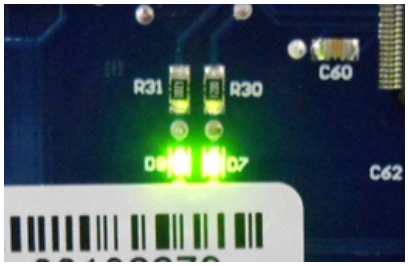
- **Sonnenschein@home Lithium** – Leave the system DC circuit breaker or fuses OFF and turn the battery on by pressing the ON button (adjacent to the fuse holder). When the relay inside the battery clicks, indicating the batteries have come ON, turn ON the system DC breaker or fuses.
- **LG Chem RESU** – Turn on the DC breaker or fuses to the SP PRO first, then turn on the battery bank circuit breakers.
- **LG Chem Rack Mount** – Turn on the DC breaker or fuses to the SP PRO first, then turn on the battery bank by pressing the ON button.
- **SelectCell** – Make sure all MECs are detected and showing valid statuses on the master PCC, then close its contactors and isolators as per the SelectCell installation manual.

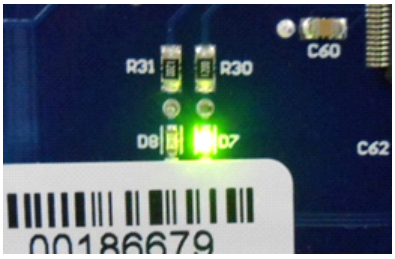
12. Verification of CAN Bus Communications

Be mindful of time management as the BMS might shutdown in 5-10 minutes without the CANBUS communications. CANBUS communication is typically established after the SP PRO has been programmed with the correct battery type.

After the SP PRO has been powered up and configured, check the LEDs on the comm card.

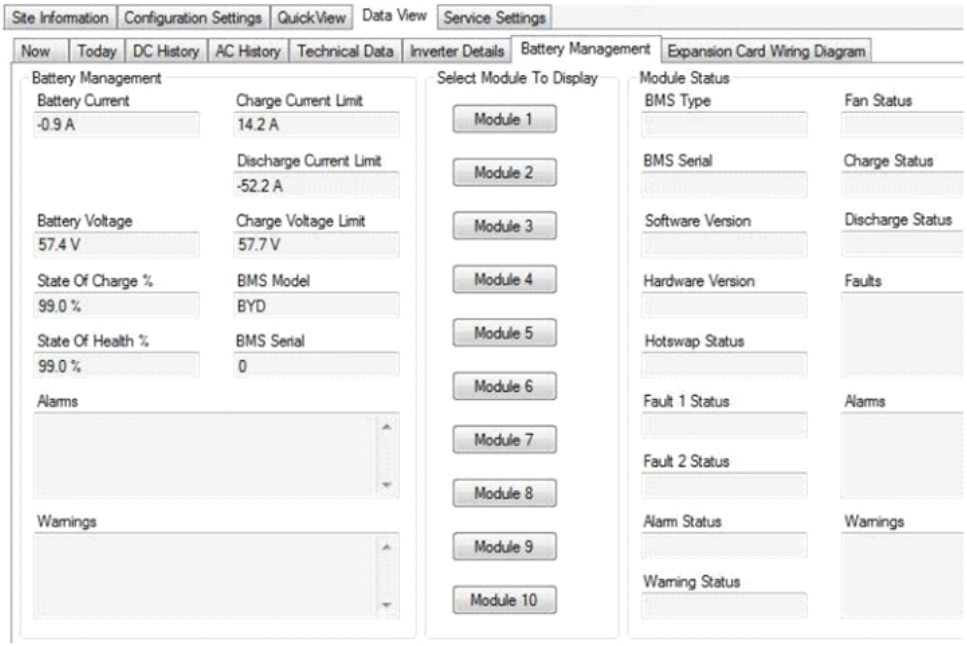
- The right LED should be steadily ON.
- The left LED should flash approximately once per second.





- There may be a delay of up to 60 seconds after power on before the left LED starts flashing.

In SP LINK go to Data view > Battery Management



- The values displayed under Battery Management are those read from the batteries.
- Not all data fields under the Battery Management tab are available for every battery. However, if all fields are blank then CAN bus communication has not been established.

The SP PRO reads all the data out of the batteries and automatically adjusts the battery current to suit. This means that unlike unmanaged or open-loop batteries, the charging is meant to be managed by the BMS itself rather than the charging profile configured in the SP PRO.

Additional Information:

Visit the Selectronic: Knowledge Base or contact Selectronic via the Customer Portal.