



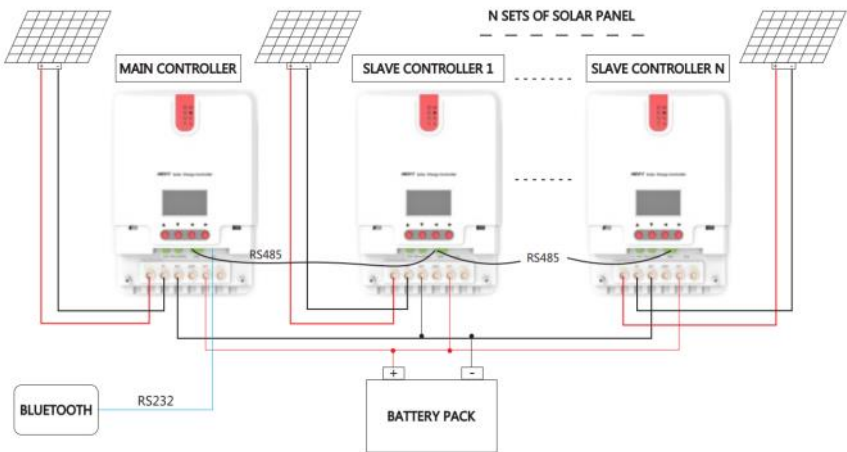
TP-SC48-60-MPPT

Parallel Operations Guide

- For use with **TP-SC48-60-MPPT** Solar Charge Controllers.
- Synchronize multiple controllers to allow parallel operation, providing almost unlimited solar capacity.

Congratulations! on your purchase of the TP-SC48-60-MPPT Solar Charge Controller. Please take a moment to review this guide if you want to run multiple units in a parallel configuration.

Wiring Diagram for Parallel Operation



Safety: For your own protection, follow these safety rules.

- **Perform as many functions as possible on the ground**
- **Do not attempt to install on a rainy, windy or snowy day or if there is ice or snow accumulation at the install site or if the site is wet.**
- **Make sure there are no people, pets, etc. below when you are working on a roof or ladder.**

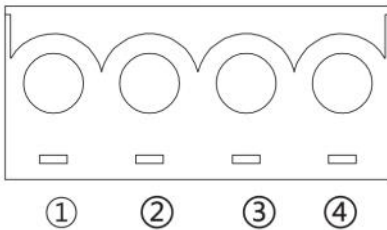
1. The TP-SC48-60-MPPT is designed to be used as a stand-alone MPPT solar controller or it can be used with multiple controllers in parallel to be able to handle almost unlimited solar panels.
2. The controllers are wired with battery outputs in parallel but solar input is connected to an individual solar array. Each controller in the string is limited to it's maximum solar capability depending on the battery voltage:

| Max Solar Power Handling Capability | | | |
|--------------------------------------------|-----------------|-----------------|-----------------|
| <i>12V Batt</i> | <i>24V Batt</i> | <i>36V Batt</i> | <i>48V Batt</i> |
| 800W | 1600W | 2400W | 3200W |

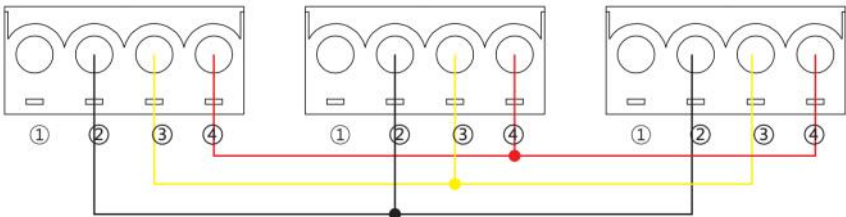
Note: When connecting to the controllers, always connect the battery first, then the solar input next and then the loads. Always connect the positive “+” connection first and then the negative “-” connection second.

3. Always fully connect the Master Unit first then add the slave units one at a time. You will need to wire the RS485 ports with the included RS485 cable as follows to sync multiple controllers:

RS485



| No. | Definition | Parallel |
|-----|------------|----------|
| ① | 12V | |
| ② | GND | Black |
| ③ | D- | Yellow |
| ④ | D+ | Red |

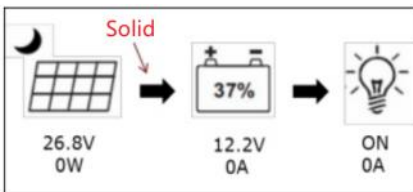


4. The unit with the smallest Address number will always be designated by the system as the Master Unit. Set the Master unit to Address=1. Set the Slave units with Address=2, 3, 4, 5, 6.....
 - A. Press down arrow twice to navigate to setup.
 - B. Press right arrow to navigate to battery menu.
 - C. Press down arrow to highlight address.
 - D. Press right arrow (SET) to set the address.
 - E. Use up/down arrow to select an address.
 - F. Press "SET" again to save the setting to memory.
 - G. Press "BACK" to return.

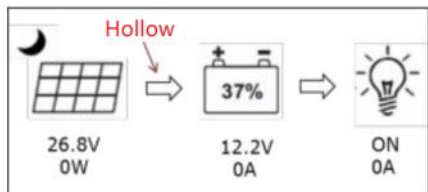
5. If the Master unit fails for some reason, the next highest Address number will become the new Master automatically.

6. The RS485 interface needs to be set to "Parallel CHG" mode on all the units in order for them to sync.
 - A. Press down arrow twice to navigate to setup.
 - B. Press right arrow to navigate to battery menu.
 - C. Press down arrow till you see "485".
 - D. Press right arrow (SET) to set the option.
 - E. Press down arrow to change from "Communication" to "Parallel Chg".
 - F. Press "SET" again to save the setting to memory.
 - G. Press "BACK" to return.

7. When the units are configured and running, you can tell which unit is the Master because the arrows on the display will be solid. On the slave, the arrows will be hollow.



Master



Slave

Limited Warranty

The TyconSolar® products are supplied with a limited 36 month warranty which covers material and workmanship defects. This warranty does not cover the following:

- Parts requiring replacement due to improper installation, misuse, poor site conditions, faulty power, etc.
- Lightning or weather damage.
- Physical damage to the external & internal parts.
- Products that have been opened, altered, or defaced.
- Water damage for units that were not mounted according to user manual.
- Usage other than in accordance with instructions and the normal intended use.

NOTES