

## MPPT Solar Charge Controller

### Features

- **MPPT Temp Compensated Charging (99.5% Efficient)**
- **Color LCD Displays: Battery/Load/Solar Volts/Amps/Watts, Battery Temp, and Battery Level**
- **Fully Automatic Operation**
- **Auto-ranging 12V/24V/36V/48V Battery Arrays**
- **Multimode Load Operation – 4 selectable modes**
- **Soft Start 30A Load Output to Power High Capacitive Loads**
- **TVS lightning protection, Industrial Temperature Range**
- **Low self-consumption <1W**



### Applications

- **Remote Power Systems**
- **Solar Lighting**
- **Solar Power Applications**

### Description

The Tycon Solar™ TP-SC48-60P-MPPT solar controllers are MPPT (Maximum Power Point Tracking) temperature compensated battery charging controllers. The battery temperature probe cable is included. The controllers are auto-ranging to accommodate 12V,24V,36V and 48V battery systems. They are designed to charge Sealed (AGM), GEL, Flooded, and Lithium batteries. They also have a USER setting for customizable battery charge settings. They have an integral color TFT LCD display that shows Battery Volts/Amps/Watts, Battery Level, Battery Temperature, Load Volts/Amps/Watts and Solar Volts/Amps/Watts. The display also shows the current time and charge mode (CC-Constant Current, CV-Constant Voltage and CF-Float Charge) or Standby (Running from battery). The display turns off automatically to save power. Tap the screen to turn on.

They have multiple load operating modes which can be set through the Mobile or PC app. On/Off Manual Mode, PV Voltage Control Mode, Dual-Time Control Mode, PV & Time Control Mode. Load modes are not settable from the front panel. Default is ON/Off Manual Mode.

The 30A load output has a soft start feature so it can smoothly and reliably power up high capacitance loads. The load can be turned on/off from the front panel or via the PC or Mobile Apps. They have full electronic protections for short circuit, reverse current, over-power, over-voltage, over-charge, over-discharge and over-temperature. The built-in over-discharge protection and low self-consumption ensures the battery is not over-discharged, which greatly increases the life of the batteries. All protections are auto-recovery.

The units are protected against lightning strikes with TVS diode protection. They operate over a wide industrial temperature range.

Connections are via 6 screw terminals for wire size up to 4AWG. The controllers are internally fused for protection, but we recommend always using an external fuse between the controller and the battery. There are four 3mm threaded holes for mounting permanently to a flat plate. There is also a bracket included for mounting to a wall or DIN rail using the Tycon #DIN-CLIPKIT-UNI DIN rail adapter bracket kit.

The MPPT controllers can be connected via the RS485 interface for parallel operations, feeding multiple solar arrays into a single battery bank.

Available options are a Wifi/Bluetooth adapter, Tycon #TP-SC-BT-WIFI, that provides a Wifi and Bluetooth interface to the controllers. This allows remote monitoring and control via the MyGreen mobile app from an Android or IOS device which is connected to the same network, working across different subnets.

Also available are a RS485 interface to connect to a PC using the Tycon #TP-SC-USB-RS485 and the MyGreen PC Software.

Tycon's #TPDIN-Monitor-WEB3 V2 interfaces to the MPPT controllers via a #TPDIN-CABLE-485 and provides remote datalogging and load control via Ethernet and SNMP in addition to other features available in the TPDIN-Monitor-WEB3.

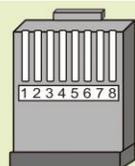


## Specifications

TP-SC48-60P-MPPT	
<b>Rated Battery Voltage</b>	12/24/36/48VDC (Auto-Detect)
<b>Battery Types Supported</b>	Lead Acid: AGM, GEL, Flooded Other: Lithium, Custom
<b>Solar (PV) Input Voltage</b>	150VDC Max
<b>Solar/Battery Charge Current</b>	60A Max
<b>Max Solar Panel Size</b>	12V Battery = 780W 24V Battery = 1560W 36V Battery = 2340W 48V Battery = 3120W Li-ion = 756W ~ 3024W
<b>Rated Load Current</b>	30A Max
<b>Battery Charge/Float Voltage</b>	AGM = 14.4V / 13.8V GEL = 14.2V / 13.8V Flooded = 14.6V / 13.8V Note: multiply x 2 for 24V Batteries, x 3 for 36V and x 4 for 48V Batteries
<b>Temperature Compensation</b>	-3.0mV/°C/Cell
<b>Lithium Activation</b>	Standard
<b>MPPT Efficiency</b>	>99.5%
<b>Communication Port</b>	RS485
<b>Dry Contact Load On/Off Indicator</b>	5VDC ~ 12VDC
<b>Self-Consumption</b>	< 1W
<b>Max Wire Size</b>	4 AWG
<b>Grounding</b>	Positive Ground
<b>Display Accuracy</b>	Voltage +/-5%, Current +/- .5A, Temperature +/-5%
<b>Environmental Protection</b>	IP43
<b>Certifications</b>	CE, FCC, RoHS
<b>Operating Temp</b>	-30°C to 60°C (-22°F to 140°F)
<b>Dimensions</b>	305x185x72mm ( 12x7.3x2.8")
<b>Weight</b>	2.15kg (4.7lb)
<b>Warranty</b>	3 years

### RS485 Communications Interface

PIN	Function
1	RS485-A
2	RS485-B
3	Dry contact
4	Dry contact
5	GND
6	GND
7	+5V(Non-Isolated)
8	+5V(Non-Isolated)



## System Ordering:

**TP-SC48-60P-MPPT** 12/24/36/48V 60A MPPT Solar Charge Controller



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