



TP-SC24-20

DATA SHEET

Solar Charge Controller

Features

- 3 Stage PWM Temperature Compensated Charging
- Fully Automatic Operation
- LCD Displays Battery Voltage, Temp, Load Current and Solar Current.
- Autoranging 12V or 24V Battery Arrays
- Multimode Load Operation – Normal (default) or Light Control
- Soft Start Load Output to Power High Capacitive Loads
- Automatic 30day Battery Equalization
- Conformal Coated Electronics for Environmental Protection
- TVS lightning protection, Industrial Temperature Range
- USB Charging Port
- Low self consumption <0.3W



TP-SC24-20 Solar Charge Controller

Applications

- Remote Power Systems
- Solar Lighting
- Solar Power Applications

Description

Tycon Solar®'s new TP-SC24-20 solar controllers are 3 stage PWM type temperature compensated battery charging controllers. The controllers are auto-ranging to accommodate 12V and 24V battery systems. They are designed to charge AGM or GEL type sealed lead acid batteries. They have an integral LCD display that shows battery voltage, temperature, load current and solar current.

They have multiple load operating modes which can be set through the “key” button on the controller.

1. Pure Light Control (0): When sunlight disappears and the solar input voltage drops below the set point, the controller initiates a one minute delay, and then turns on the load output. When sunlight returns and the solar input voltage exceeds the set point, the controller initiates a one minute delay, and then turns off the load output.
2. Light Control + Time Control (1 to 14): The starting process is the same as pure light control. After operating for a preset period of time (settable from 1 to 14 hours), the load turns off automatically.
3. Manual Mode (15): In this mode, the user can switch the load on or off by the key, no matter whether it's day or night. This is the Default mode.
4. Debugging Mode (16): This mode is same as Pure Light Control mode without the 1 minute delay. This mode enables a quick check of the system installation and function.
5. Normal On (17): This mode is the same as Manual Mode (15) except now the load on/off Key is disabled.

LED Display	Mode
00	Pure light control mode
01-14	Light control + time control (1 to 14 hours)
15	Manual mode (default)
16	Debugging mode
17	Normal on mode

The load output has a soft start feature so it can smoothly and reliably power up high capacitance loads up to 20A. There is a convenient On/Off button to disconnect load power when the unit is operated in the default mode (15).

They have full electronic protections for short circuit, reverse current, overvoltage, overcharge, 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. Electronics are conformal coated for environmental protection.

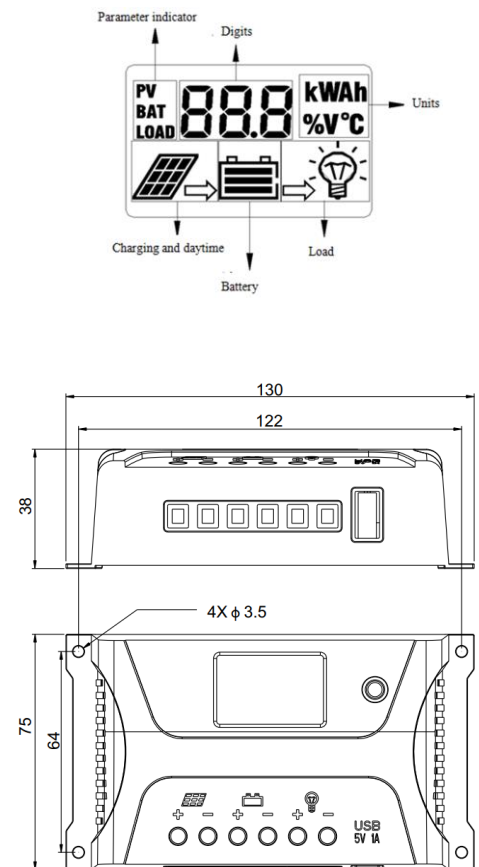
An automatic battery equalization charge automatically engages once every 30days. The equalization charge helps to balance the batteries in an array and reduce the possibility of battery sulfation. The equalization charge is limited to 1-hour duration to preserve battery life.

A special feature is the 5V 1A USB charging port, so a technician can charge his phone or tablet while on site.

Connections are via 6 screw terminals for wire size up to 10AWG. There are four screw holes(3.5mm) for mounting. The controllers are internally fused for protection, but we recommend always using an external 20A fuse between the controller and the battery. There are four screw holes(3.5mm) for mounting.

Specifications

	TP-SC24-20
Rated Voltage	12/24 (Auto Detect), Max <35V
Rated Current (Solar and Load)	20A
Maximum Solar Panel Size	260W @ 12V ; 520W @ 24V
Maximum Solar Input Voltage	<55V
Boost (Absorption) Charge Voltage	14.4V @ 12V ; 28.8V @ 24V
Boost Charge Timeout	2 Hours
Float Voltage	13.8V @ 12V ; 27.6V @ 24V
Equalize Charge Voltage	14.6V @ 12V ; 29.2V @ 24V
Equalize Charge Interval and Timeout	30 Days ; 1 Hour
Overvoltage Protection	17.0V @ 12V ; 34V @ 24V
Over-Discharge Voltage	OFF: 11.1V @ 12V ; 22.2V @ 24V ON: 12.6V @ 12V ; 25.2V @ 24V
Light Control Voltage	Light Control On: 5V @ 12V ; 10V @ 24V Light Control Off: 6V @ 12V ; 12V @ 24V
Light Control Delay Time	1 Minute
Self-Consumption	< 0.3W
Temperature Compensation	-3.0mV/°C/Cell
Max Wire Size	10 AWG
Voltage and Current Accuracy	+/-2%
Environmental Protection	IP30
Certifications	CE, RoHS
Operating Temp	-30°C to 60°C (-22°F to 140°F)
Dimensions	130 x 75 x 38mm (5.1 x 3.0 x 1.5")
Weight	160 g (5.6 oz)
Warranty	3 years



System Ordering:

TP-SC24-20 12/24V 20A PWM Temperature Compensated Solar Charge Controller

For further information contact:

Tyconsystems.com

