Dear User:
Thank you for choosing the TYCON TP-SC-24-10 Smart Solar Charge Controller.The TP-SC24-10 has 12/24VOLT
automatic identification. Please read this manual carefully before use to ensure correct, safe and effective product operations. Please keep this manual in a safe place for future reference.

Product Introduction

The Tycon TP-SC24-10 controller family is our new generation of multi-functional solar chargers. These devices incorporate PWM technology to control the solar charging. Effectively keeping all system components safe, extending the working life of the battery and maintaining system efficiency.
The Tycon TP-SC24-10 controller is designed for small, remote stand alone systems including solar fences, lighting, gate openers, security cameras, etc.

Main Functional Characteristics

- Intelligent controller (SC-24-10) identifies system voltage 12V/24V automatically.
- PWM technology protects system overcharge and overflow.
- Controlled charging maintains excellent battery condition and extended working life.
- Reverse polarity protection.
- Open circuit protection, prevents battery discharge and solar module damage at night.
- Lightning protection.
- Three LED display clearly indicates the working status of the system.

The Installation and Connection of the SC24-10 Solar Controller

The SC24-10 controller is designed for indoor (protected) use only.

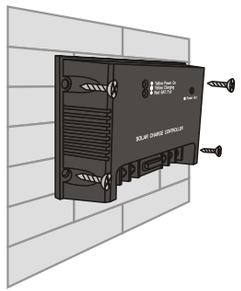
It should be installed in a shaded location, avoiding direct sunlight and must be free from moisture.

If the controller is to be used outside, please place the controller in a protective housing keeping it free from dust and water.

The surface temperature of the controller will heat up during use, please avoid contact and exposure with combustibles.

Our Temperature Compensation Sensor Option allows the controller to detect the surrounding temperature, automatically adjusting the charging voltage. The controller and battery should be placed in the same room.

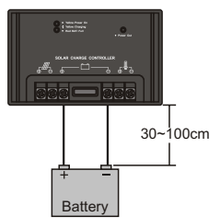
Mounting & Installation



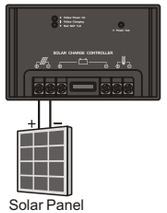
4 screws are provided for mounting purposes.
Please ensure both cooling vents on either side of the controller are free from obstruction to ensure sufficient air flow.

Connection Sequence

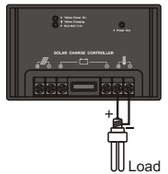
***Warning:The following connection sequence must be followed at all times to avoid possible damage and personal injury!**



1 Battery Connection
The battery must be connected first using the clearly marked connections on the controller.
Note the recommended distance between the battery and the controller should be between 30cm and 100cm.
The controller has reverse polarity connection, just change the polarity if the battery is incorrectly connected.

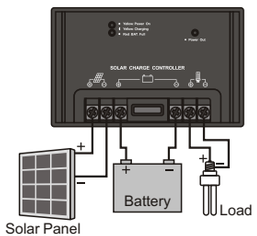


2 Solar Module Connection
Connect the wires to the controller first, then connect the panel.



3 Load (Device) Connection
Connect load (Device) first and then controller to avoid any damage and/or malfunctions.

4 Complete Wire Connection Diagram



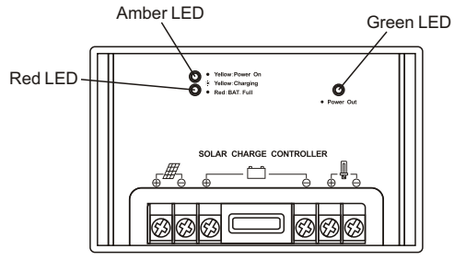
Recommended System Wire Sizes(including wires between the controller and panel, battery, load):

SC24-10: at least 6.0 mm²

Warning - Important Safety Instructions when connecting the panel.

- Put the positive and negative of the wire close to reduce the electromagnetic interference.
- Do not connect the solar module while it is exposed to daylight. This may generate voltage instantly, causing system damage and/or personal injury.
- Ensure the solar module is rated at the correct voltage to charge the battery you are connecting, failure to do so may cause permanent harm to the battery.

LED Display Function



LED Explanation

Amber LED:
On (Solid):The controller is connected correctly/Battery fully charged.
On (Flashing):Controller is charging.
Red LED:
On (Solid):The battery is fully charged.
Green LED:
On (Solid):Load output is OK.
Off:Battery voltage is low.

LED Sequence

Phase 1 - Amber LED Flashing, no other LEDS are lit
Battery is being charged and voltage is below 12.4V for 12V systems and 24.8V for 24V systems.
Note: When the voltage is under 11.1V (12V system) or 22.2V (24V system), the battery will stop powering the load.

Phase 2 - Amber LED is flashing and the Green LED is lit
Battery has reached 12.4V or 24.8V and the controller continues to charge.

Phase 3 - Amber LED is flashing, Green LED is lit
Battery has reached maximum charge around 14.4V or 28.8Vand the controller remains charging with a very small trickle charge.

Phase 4 - Yellow LED, Red LED and Green LED are all lit (No flashing)
Battery has reached 13.8V, no charging is taking place.

Phase 5 - Yellow LED starts flashing, Red LED turns off and Green LED stays on
Battery has reached 13.2V, and the controller has started charging again.
If voltage drops below 12.4V due to load the Green LED will turn off.

Trouble-shooting Guide

Troubles	Display	Possible Cause/s	Corrective Measures
Can not power the load	Green LED off	Low battery	Battery likely requires charging
		Load exceeds controller rating or short circuit exists	Turn off all the load, trouble shooting, change new fuse
		Battery volts high 12V system>15.5V 24V system>31V	Check if battery open-circuit, if not, the battery maybe damaged
		Battery connection or fuse damaged, battery internal resistance high	Check the battery connection, check fuse and battery condition
Battery power of short duration	Green LED off	Battery capacity is low	Battery likely requires replacement
Battery can not be charged	Amber LED not flash	Solar module polarity reversed, solar module or its wiring damaged, fuse open circuit	Check the module polarity and connection
Battery be fully charged quickly	Red and Amber LED on	Battery I.R. high, capacity low. Connecting wire too thin and too long	Battery likely requires replacement and new, shorter/thicker connecting wires should be installed
Controller Not Operating	Green LED off Amber LED and Red LED flash	Load current over the rated value Or Load short circuit	If it is not cause by over-load or short-circuit, please: Option1: Press the reset button in controller back. Option2: Reconnect the controller after a few seconds

Suggestions for Safe and Secure Use

Failure to follow these complete instructions and the suggestions below may cause system damage and/or personal injury.

- This controller is only designed for 12V/24V solar charging.
- The built-in electronic circuit protector keeps the controller away from overcharging, overflowing, overloading and short-circuit.
- Sealed, maintenance free VLRA Batteries are highly recommended
- Do not connect any voltage stabilizer or charger to solar panel's terminals this can cause damage to the controller.
- The controller will heat up during use, place in a well-ventilated location and avoid contact with the controller surface.
- Keep the ventilation holes on the controller free of dust and debris.
- Avoid battery short circuit at all times.
- The battery may produce flammable gases, please keep away from spark or open flame, ensure the battery is kept in a well-ventilated location.
- Fully charge the battery at least once a month.
- Do not contact or short circuit the terminals or wires.
- Please use insulated tools during operation, keep both hands dry and do not stand on the wet ground.
- Please keep the children away from the battery and the controller.
- Please follow the security recommendations from the battery manufacturer. Contact the distributor or the installation personnel if there is any doubt.
- It is recommended that a certified electrician install and connect the system.

General Disclaimer

In no event shall the manufacturer liable for any damage or personal injury caused by non-compliance to the operating instructions and safety suggestions in this brochure. The manufacturer will not bear any responsibility for misuse, damage, injury, incorrect installation and/or system design as such.

Technical Parameters

Model	SLC-1205B	SLC-1208B	SLC-1210B	SLC-1215B	SLC-2405B	SLC-2408B	SLC-2410B	SLC-2415B
Rated voltage (V)	12				12/24			
Float voltage (V)	13.8±0.2				24V system: 27.6±0.4 12V system: 13.8±0.2			
Over-charging protection voltage (V)	14.1~14.5				24V system: 28.2~29 12V system: 14.1~14.5			
Load disconnect voltage (V)	10.8~11.2				24V system: 21.6~22.8 12V system: 10.8~11.2			
Load reconnect voltage (V)	12.2~12.6				24V system: 24.4~25.2 12V system: 12.2~12.6			
Max .solar current(A)	5	8	10	15	5	8	10	15
Max. load current (A)	5	8	10	15	5	8	10	15
Typical power consumption (mA)	≤8							
Temperature compensation factor	-3mV/cell*K							
Voltage drop between solar power and battery (V)	≤0.4							
Voltage drop between battery and load (V)	≤0.3							
Ambient temp. range(°C)	-20°C~50°C							
Max. altitude(m)	5000							

SOLARLAND®
SOLAR TECHNOLOGY AND SOLUTIONS

SLC-B Smart Solar Charge Controller

Models

SLC-1205B/08B/10B/15B
(For 12V System Only)
SLC-2405B/08B/10B/15B
(12V/24V Automatic Identification)

User Manual & Product Specifications