PROJECTA

SOLAR CHARGE REMOTE

P/No. SC300D

IMPORTANT SAFETY INSTRUCTIONS

GENERAL SAFETY INFORMATION

- Read all instructions and cautions in the manual before starting the installation.
- Keep the SC300D away from rain, exposure, severe dust, vibrations, corrosive gas and intense electromagnetic interference.
- Do not allow water to enter remote meter.
- There are no user serviceable parts inside the controller. Do not disassemble or attempt to repair it.

GENERAL INFORMATION

Features

- Automatic identify and display the type, model and relevant parameter data of controllers;
- Real-time display the operational data and working status of the connection devices in digital, graphic and textual forms by a large-screen multifunction LCD;
- Direct, convenient and rapid operation of six navigation function keys;
- Both data and power flowing on the same lead, no need for external power;
- Real-time data monitoring and remote load switchover of the controllers, and data browse and modification of device parameters, charge control parameters and load control parameters;
- Real-time display and acoustic alarm of failure information of the connection devices;
- Longer communication distance based on RS485.

Main functions

- Functions like the real-time monitoring of the operational data and working status of a controller, the browse and modification of charge/discharge control parameters, the setting of device parameters and load control parameters and the restoration of factory defaults, based on LCD display and functional key operation.

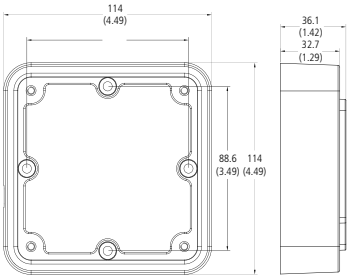
Recommendations

- Solar charge controller SC300D suitable for use with solar charge controller part numbers SC320 & SC330.
- Please do not install SC300D in a situation with strong electromagnetic interference.

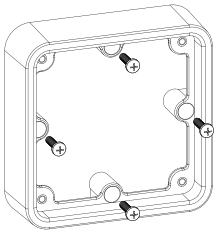
INSTALLATION

Frame Mount Dimensions

Mechanical parameter	Parameter
Overall dimension	114 x 114 x 32.7mm 4.49 x 4.49 x 1.29 inches
Mounting dimension	88.6x 88.6mm 3.49 x 3.49 inches
Terminal	4.3



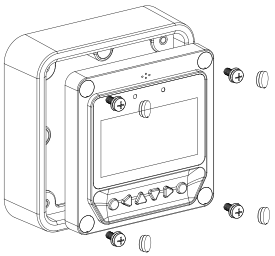
Surface Mount Installation



Step1: Locate and drill screw holes based on the frame mounting dimension of the base, and erect the plastic expansion bolts.

Step 2: Use four ST4.2×32 self-tapping screws to fix the Frame.

Step 3: Use four M4×8 pan head screws to mount the frame to the surface.

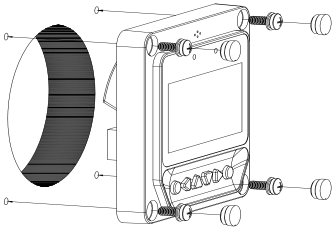


Step 4: Mount the four associated screw plugs into the screw holes.

Flush Mount Installation

Step 1: Locate and drill screw holes based on the installation size of the surface.

Step 2: Use four M4×8 cross recessed pan head screws with M4 nuts to mount the remote control unit to the chosen surface.

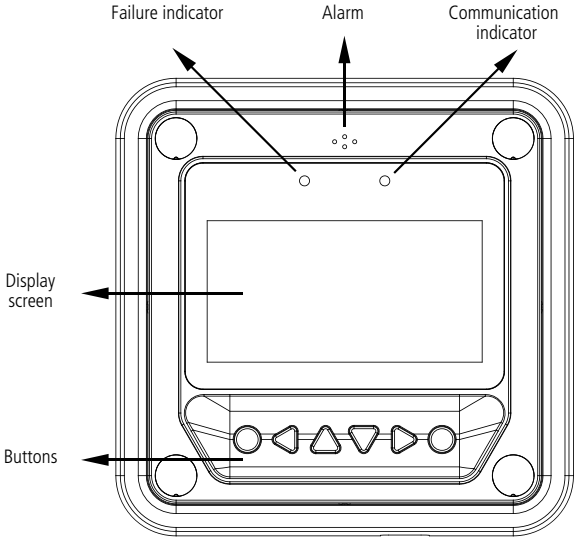


Step 3: Mount the four associated white screw plugs into the screw holes.

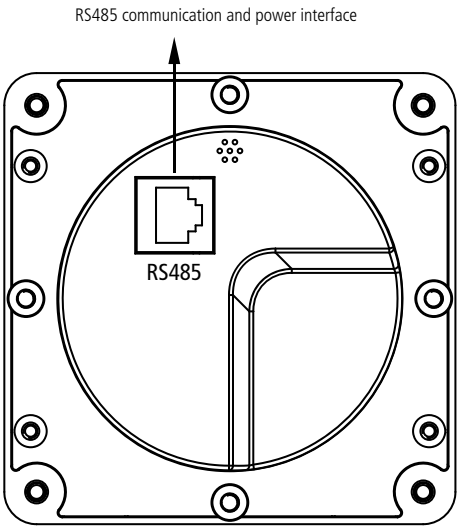
Note: Take full consideration of the plugging/ unplugging space of the communication cable and the length of the cable during installation to see if they are appropriate.

PRODUCT OVERVIEW

Front View



Rear View



Failure indicator

Failure indicator flashes in case of failure of the connection devices.
For failure information please check the Controller Manual.

Alarm

Fault audible alarm, could be activated or deactivated.

Communication indicator

Indicate communication status when MT50 is connected with the controller.

Display screen

Man-machine interaction operation interface.

Buttons

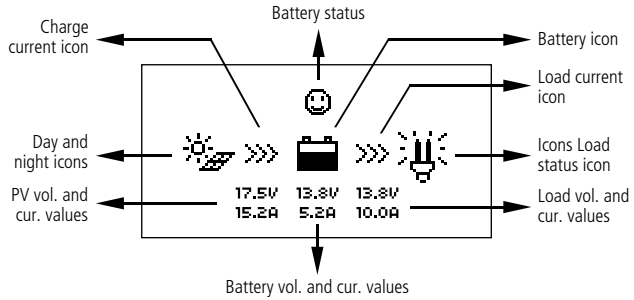
The Meter buttons includes four navigation buttons and two operational buttons.
See the specific directions in the Operation section of this manual.

RJ45 communication and power interfaces

Communication and power supply cable interfaces, used for communication connection with controllers.

Note: Please use the communication plug which is marked with "MT" to connect MT50

Monitoring screen



Day and night icons

Night Day: The threshold voltage is 1V. Higher than 1V is daytime.

Charge current icon

The icon is dynamically if there is charge current.

Battery icon

The battery capacity is dynamically displayed based on the SOC value calculated by the contoller.

Note: When the battery is in over discharge status, the icon displayed is"".

Battery status icons

Normal voltage, Under voltage, Over discharge.

Load current icon

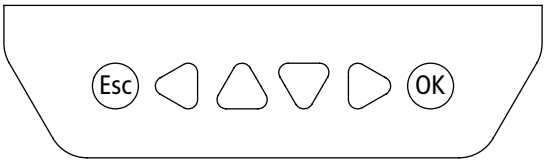
The load current icon is displayed if there is discharge current.

Load status icon

Load ON, Load OFF.

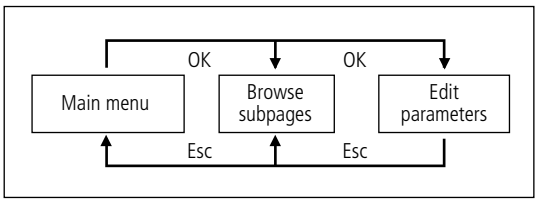
OPERATION

Buttons



The buttons are respectively (from left to right) "ESC", "Left", "Up", "Down", "Right" and "OK "buttons, the operation is described in the schematic operation diagram below:

Schematic operation diagram



The default entry page is the browse mode. Pressing OK button and inputting the correct password to enter the modification mode; ◁ and ▷ buttons could be used to move the cursor, △ and ▽ buttons could be used to modify the parameter values when the cursor is located at the current place; OK and ESC buttons could be finally used to respectively confirm and cancel the modification of the control parameters.

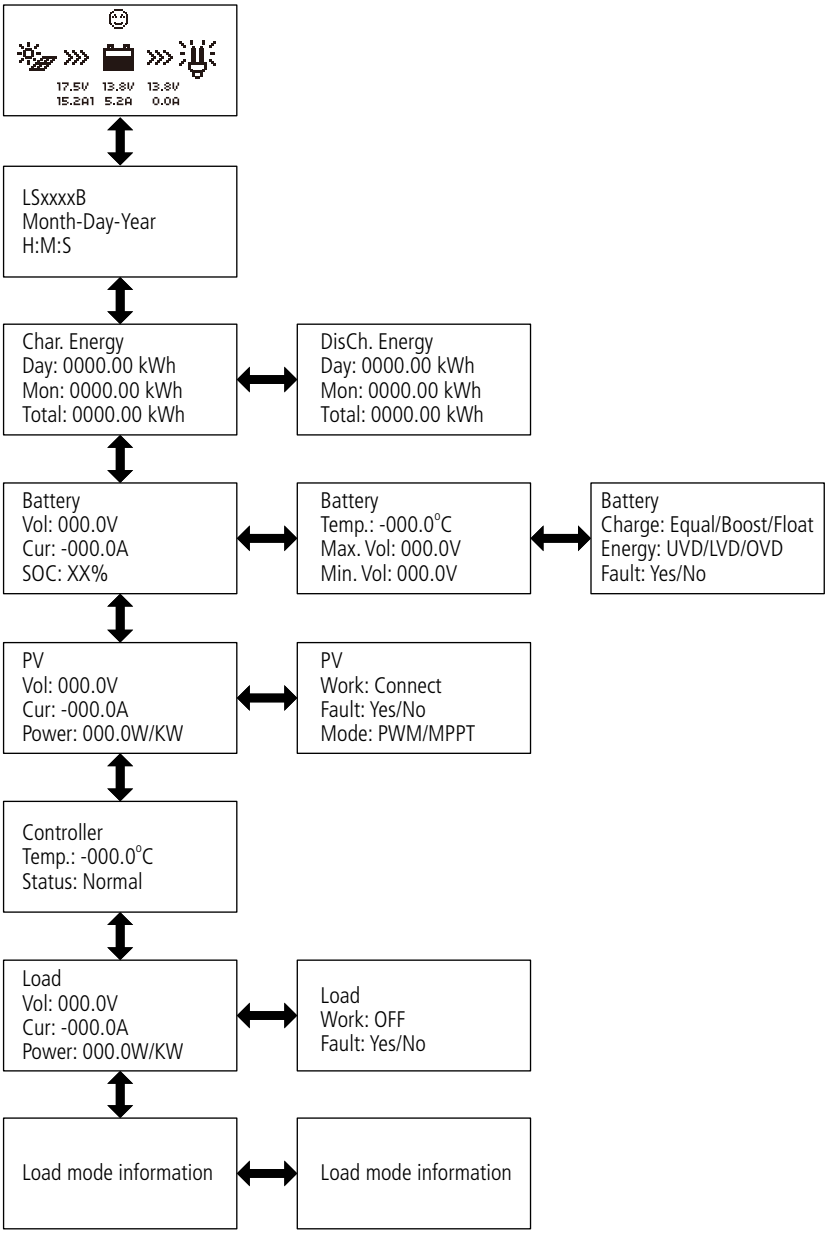
Main menu

"Up" and "Down" buttons are respectively used to move the cursor to select the menu items, "OK" and "ESC" buttons are respectively used to enter or exit the corresponding pages of the menu items.

1. Monitoring	5. Load set	9. Factory Reset
2. Device Info.	6. Device Para.	10. Failure Info.
3. Test operation	7. Device PSW	11. Meter Para.
4. Control Para.	8. Charge Mode	

Real-time monitoring

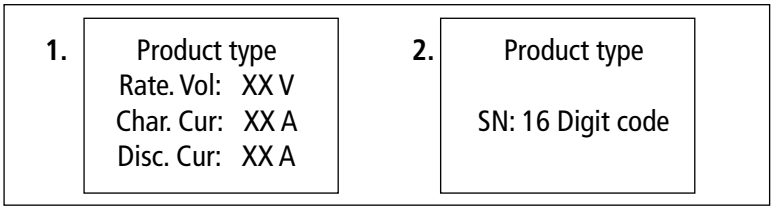
There are 14 pages under real-time monitoring. Please check it as below:



Operational tips: △ and ▽ buttons are respectively used to turn the browse page upward and downward, while ◁ and ▷ buttons are respectively used to turn the interfaces left and right.

Device information

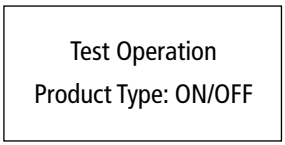
The product model, parameters and SN code of the controllers are displayed below:



Operational tips: △ and ▽ buttons are respectively used to turn the browse page upward and downward.

Test operation

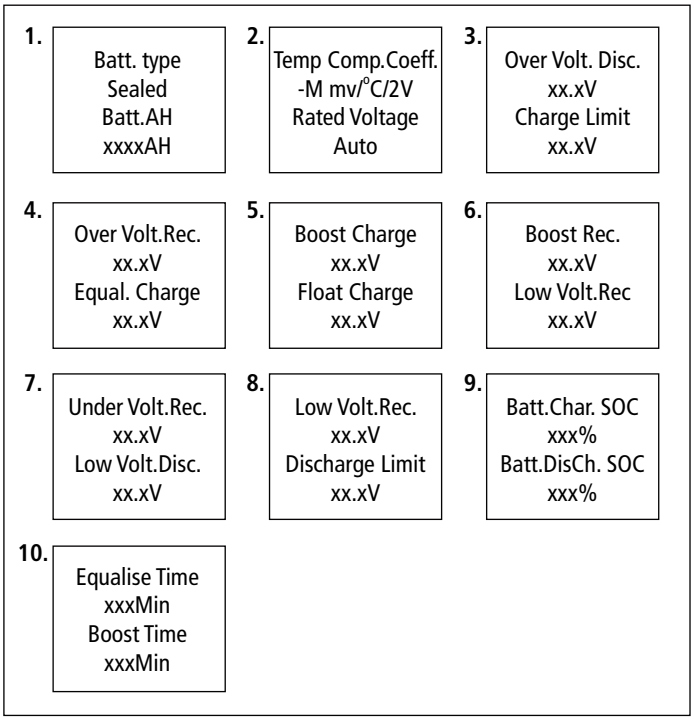
Load switch test operation is conducted on the connection solar controller to see if the load output is normal. The test operation does not affect the working settings under actual load, which means that the solar controller will exit from the test mode when exiting the operational interface of the test.



Operational tips: Enter the page and input correct password; use △ and ▽ buttons to modify the ON/OFF status values, while use OK and Esc buttons respectively to confirm and cancel the test operation.

Control parameter

Browse and modification operations are conducted over the control parameters of solar charge controller. See the scope of parameter modification in control parameters table, and the page of control parameters in the diagram below:



Control parameters table

Control parameters		
Parameters	Default	Range
Battery type	Sealed	Sealed/Gel/Flooded/User
Battery Ah	200Ah	1~9999Ah
Temperature compensation coefficient	-3mV/°C/2V	-9–0mV/°C/2V
Rated voltage	Auto	Auto/12V/24V
Charging SOC	100%	Fixed Value
Discharging SOC	30%	10–80%

Battery voltage parameters

(Parameters is in 12V system at 25ºC , please use X 2 in 24V.)

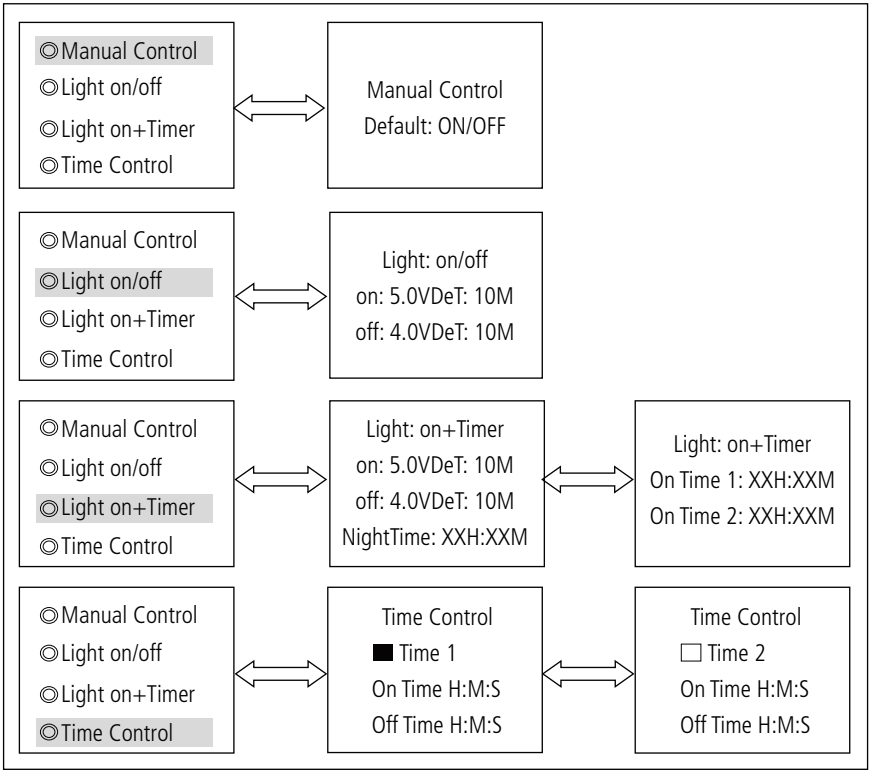
Control voltage parameters				
Battery charging setting	Gel	Sealed	Flooded	User
Over voltage disconnect voltage	16.0V	16.0V	16.0V	9–17V
Charging limit voltage	15.0V	15.0V	15.0V	9–17V
Over voltage reconnect voltage	15.0V	15.0V	15.0V	9–17V
Equalize charging voltage	–	14.6V	14.8V	9–17V
Boost charging voltage	14.2V	14.4V	14.6V	9–17V
Float charging voltage	13.8V	13.8V	13.8V	9–17V
Boost reconnect charging voltage	13.2V	13.2V	13.2V	9–17V
Low voltage reconnect voltage	12.6V	12.6V	12.6V	9–17V
Under voltage warning reconnect voltage	12.2V	12.2V	12.2V	9–17V
Under voltage warning voltage	12.0V	12.0V	12.0V	9–17V
Low voltage disconnect voltage	11.1V	11.1V	11.1V	9–17V
Discharging limit voltage	10.6V	10.6V	10.6V	9–17V
Equalize duration	–	2 hrs.	2 hrs.	0–3 hrs.
Boost duration	2 hrs.	2 hrs.	2 hrs.	0–3 hrs.

Note: Battery voltage setting please in strict accordance with:

1. Over Voltage Disconnect Voltage > Charging Limit Voltage ≥ Equalize Charging Voltage ≥ Boost Charging Voltage ≥ Float Charging Voltage > Boost Reconnect Charging Voltage;
2. Over Voltage Disconnect Voltage > Over Voltage Reconnect Voltage;
3. Low Voltage Reconnect Voltage > Low Voltage Disconnect Voltage ≥ Discharging Limit Voltage;
4. Under Voltage Warning Reconnect Voltage > Under Voltage Warning Voltage ≥ Discharging Limit Voltage;
5. Boost Reconnect Charging Voltage > Low Voltage Disconnect Voltage.

Load setting

The page of load setting could be used to set the four load working modes of the connection solar controller (Manual, Light on/off, Light on+timer, Time control).



1. Manual control

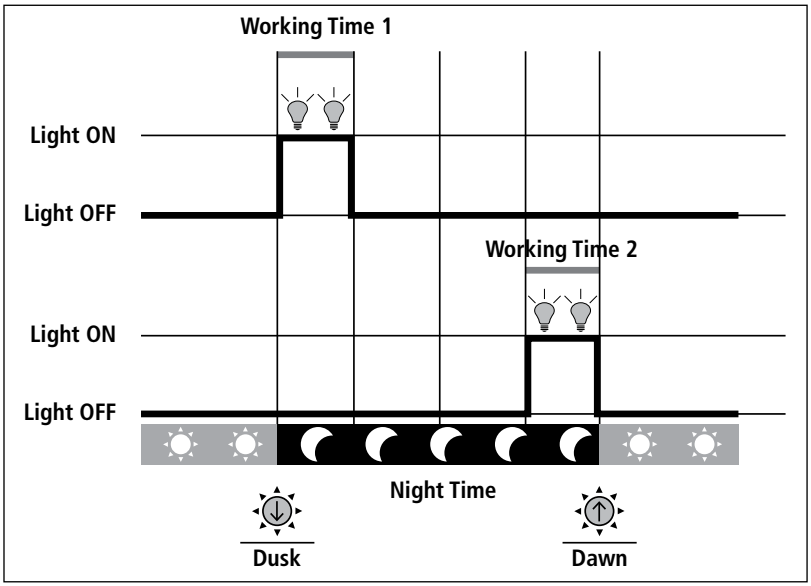
Mode	Introductions
ON	Load is on all the time if battery capacity is enough and no abnormal conditions happen.
OFF	Load is OFF all the time.

2. Light ON/OFF

Light ON voltage (Night threshold)	When input voltage of solar module is lower than light ON voltage, it automatically turns ON load output if battery capacity is enough and no abnormal conditions happen.
Light OFF voltage (Day threshold)	When input voltage of solar module is higher than light OFF voltage, it automatically turns off load output.
Delay time	The confirmation time for Light signal. During the period, if light signal voltage continues matching Light ON/OFF voltage, it will carry out corresponding actions (The time adjustment range: 0–99mins.)

3. Light ON+ timer

Working time 1 (T1)	Load working period after light control turns ON load	The real working time of T2 depends on the Night time, and the length of T1, T2.
Working time 2 (T2)	Load working period before light control turns off load	
Night time	Total night time controller get from calculation (≥3h)	

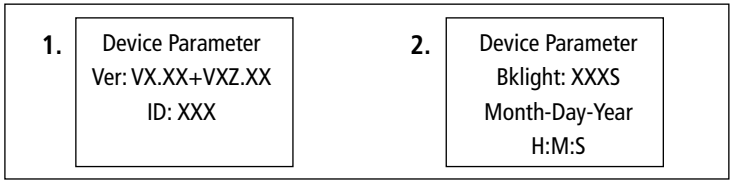


4. Time control

Working time 1 (T1)	Control on/off time of load through real-time clock mode.	Working time 1 is the compulsory load working time interval. Working time 2 is an optional.
Working time 2 (T2)	Realize the dual timer function of the load control through real-time clock mode.	

Device parameter

The software version information of solar charge controller could be checked via the page of device parameters, and device data like device ID, device LCD backlight time and device clock could be checked and modified. The page of device parameter in the diagram below:

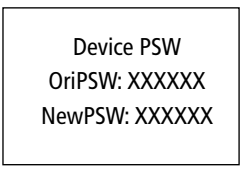


Note: the bigger the ID value of the connection device, the longer the Meter communication identification interval (the maximum interval<6 minutes).

Type	Notes
Ver	Solar charger controller software and hardware version numbers.
ID	Solar charger controller communication ID numbers.
Bklight	Solar charger controller LCD backlight working time.
Month-Day-Year H:M:S	Solar charger controller internal clock.

Device password

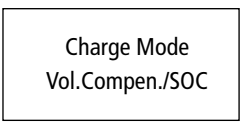
The password of the solar charge controller could be modified via the page of device password; the device password is a 6-digit figure which is required before entering the modification mode of "Control parameter", "Load setting", "Device parameter", "Device password", "Factory reset" pages. The page of device password in the diagram below:



Note: Solar charge controller default password is"000000"

Charge mode

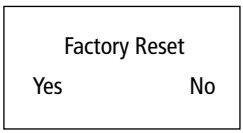
The charge mode of solar charge controller could be selected via the page of charge mode (Voltage Compensate, SOC); the default charge mode is Voltage Compensate charge mode.



Charging mode	Notes
Vol.Compen.	Voltage compensation: Voltage control charging (default)
SOC	By setting the charge and discharge SOC target values for battery charge and discharge control

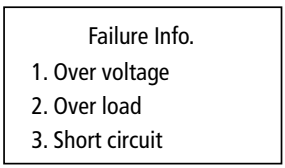
Factory reset

The default parameter values of solar charge controller could be restored via the Factory reset page, which means the "Control parameter", "Load setting", "Charge mode" and "Device password" of the devices could be restored to the factory defaults (the factory default password of the devices is "000000").



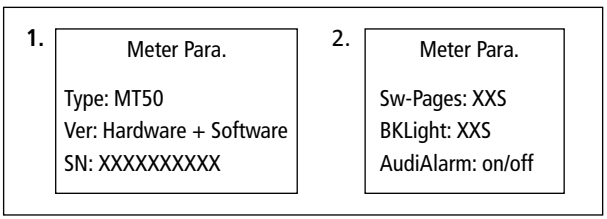
Failure information

The current failure information of the solar charge controller could be checked via the Failure information page (a maximum of 15 failure messages could be displayed); when the failures of solar charge controller are eliminated, the corresponding failure information will also be automatically eliminated.



Meter parameter

The meter model, software and hardware version, and SN NO.could be checked via Meter parameter page. And the three parameters (Switch pages, Backlight, Audiblealarm) could be browsed and modified as well.



Note: When the set up is accomplished, the auto switch page cannot become effective until ten minutes later.

Meter parameter

Parameters	Default	Range	Remark
Sw-Pages	0	0–120S	The automatic switchover for real-time monitoring page
BKlight	20	0–999S	LCD backlight time
AudiAlam	OFF	ON/OFF	Turn ON

Electrical

Electrical parameter	
Self-consumption	Backlight and acoustic alarm ON<65mA
	Backlight ON<23mA
	Backlight OFF<15mA

Mechanical

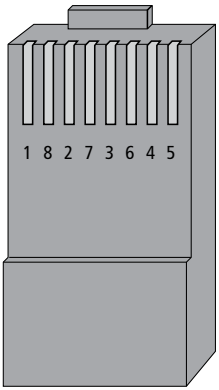
Mechanical parameter	
Faceplate dimensions	98×98 mm / 3.86×3.86 inches
Frame dimensions	114×114 mm / 4.49×4.49 inches
Connector type	RJ45
Meter cable	Standard 2m,Max 50 m
Meter weight	Simple package: 0.23 Kg Standard package: 0.32 Kg

Enviromental

Environmental parameter	
Ambient temperature	-20°C~+70°C/-4°F~158°F

Definitions of interface pins

Pin No.	Definition
1	Power+12V input
2	RS485 B
3	RS485 A
4	GND
5	GND
6	RS485 A
7	RS485 B
8	Power+12V input



Data cable pin definitions

WARRANTY STATEMENT

Applicable only to product sold in Australia

Brown & Watson International Pty Ltd of 1500 Ferntree Gully Road, Knoxfield, Vic., telephone (03) 9730 6000, fax (03) 9730 6050, warrants that all products described in its current catalogue (save and except for all bulbs and lenses whether made of glass or some other substance) will under normal use and service be free of failures in material and workmanship for a period of one (1) year (unless this period has been extended as indicated elsewhere) from the date of the original purchase by the consumer as marked on the invoice. This warranty does not cover ordinary wear and tear, abuse, alteration of products or damage caused by the consumer.

To make a warranty claim the consumer must deliver the product at their cost to the original place of purchase or to any other place which may be nominated by either BWI or the retailer from where the product was bought in order that a warranty assessment may be performed. The consumer must also deliver the original invoice evidencing the date and place of purchase together with an explanation in writing as to the nature of the claim.

In the event that the claim is determined to be for a minor failure of the product then BWI reserves the right to repair or replace it at its discretion. In the event that a major failure is determined the consumer will be entitled to a replacement or a refund as well as compensation for any other reasonably foreseeable loss or damage.

This warranty is in addition to any other rights or remedies that the consumer may have under State or Federal legislation.

IMPORTANT NOTE

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

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