SDRC MT Series Solar Charge Controller

User Manual

Thank you for purchasing our products!

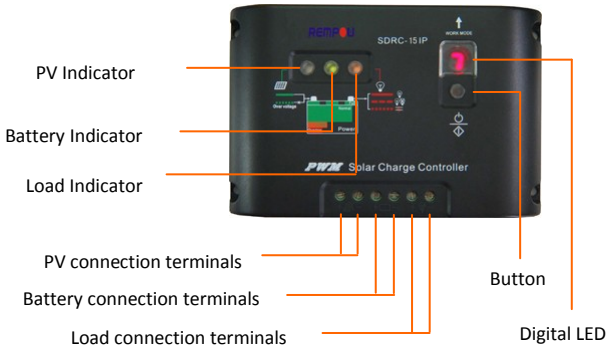
This manual contains very important information with respect to Installation, Maintenance, Troubleshooting etc. It is recommended to carefully read through the manual before starting the operation.

Contents

General Information

1.1 Features:

1. Intelligent control with MCU and particular software
2. Dual-timeframe to realizes sectional control for dawn and dusk time.
3. Equipped with automatic protections of over-charge, deep-discharge, short-circuit, over-load and anti-reverse polarity connections. Above protection won't damage any of the components and the fuse.
4. PWM serial connections to improve charge efficiency and lifetime. Temperature compensated.
5. Informative tri-color LED indicators and Digital LED indicate working status.
6. Industrial-stage microchip to ensure proper work conditions under cold, hot and humid conditions. Timer control ensures the accurate timing.
7. DC output or 1Hz flashing output, especially useful in LED traffic lights.



1.2 Dimensions

Dimensions: 140*95*25(mm)

2. Installation

2.1 General Installation Notes:

- √ Read through the entire installation section first before beginning installation.
- √ Be careful when working with batteries, it is better to wear eye protection.
- √ Use insulated tools and avoid placing metal objects near the batteries
- √ Explosive battery gasses may present during charging. Be certain there is sufficient ventilation to release the gasses
- √ Ensure tight connections to avoid wire burning resulted from loose connections.
- √ Only charge Lead-acid batteries. Make sure the PV and load current will match the controller

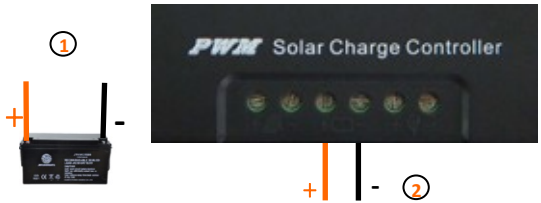
2.2 Mounting and Wiring:

Firstly mount the controller to a vertical surface. Allow space above and below the controller for air flow. Then start the wiring.

Battery wiring

Before connecting the battery, it is advisable to measure the battery voltage to make sure the battery work properly. Then connect the battery terminals first as shown in figure 2.2.2 refer to appendix table 2.4 for wire cross section. The second is to connect the controller terminals as shown in figure 2.2.2, make sure of no reverse polarity.

2.2.2



Load wiring:

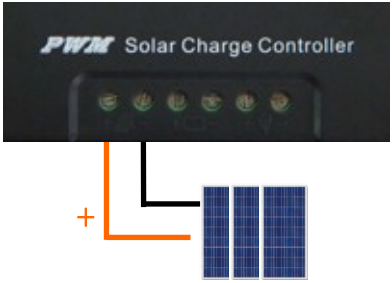
Connect load positive (+) and negative (-) wires to the controller as shown in figure 2.2.1. Make sure the connections are tight enough. Refer to appendix table 2.4 for wire cross section. Make sure of no reverse polarity.

2.2.1

Solar panel wiring

Connect the solar module(s) to the controller as shown in figure 2.2.3. Refer to appendix table 2.4 for wire cross section. Make sure of no reverse polarity.

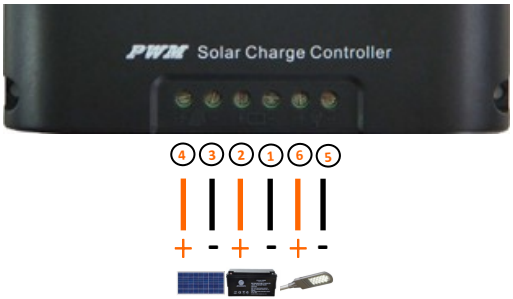
2.2.3



2.3 Recheck wiring:

Recheck the connections of the terminals, and make sure they are tightly connected. Loose connection may give rise to melting wire or burning. It is recommended to connect terminals in the order as shown below.

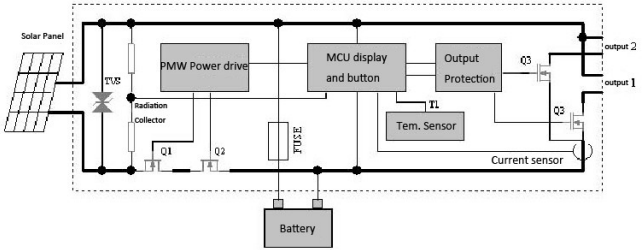
2.3.1



2.4: wire cross section

Current	5A	10A	15A	20A
Recommended wire Cross section	1.5mm²	2.5mm²	3mm²	4mm²

3.System Operation



This SDRC MT model is specifically designed for solar lighting systems requiring sectional control over light on and off. When sun light rises and strike the solar panel, the electricity generated will be stored in the battery.

After the sunset, the controller perceives the disappear of PV voltage and draw electricity from the battery to power the lamp.

This SDRC MT model has function to sectionally control the periods of light on and off for dawn and dusk. For detail configuration, please refer to configuration tale on page 10.

The LED indicators indicates the status of charging and any error status:

Indicator	Color	Status
PV Indicator	Green	Charging
Battery Indicator	Green	Normal voltage
Battery Indicator	Green flicker slowly	Full charge
Battery Indicator	Yellow	Voltage Shortage
Battery Indicator	Red	Deep discharge
Load Indicator	Yellow	Battery Feed

4. Configuration

SDHC series products introduced a one button control design. Press the red button as shown in figure 2.3.1, until the figure flashes, then adjust the figure to required by pressing the button once over once. The set is completed when the figure become static. Then repeat the operation, it automatically switches to the second timeframe setting, there is a dot with the figure for the second section. You can't set a '6' or '7' together with '1'-'5'.model.

Table 3.1

Digital Figure	Definition: T represents the hours the lamp will be on since no light received.
0/0.	T=0, Light control only
1/1.	T=4 hours
2/2.	T=6 hours
3/3.	T=8 hours
4/4.	T=10 hours
5/5.	T=12 hours
6/6.	T=0, universal model, light control and timer control off
7/7.	T=0. without output delay time

5. Trouble shooting

Status	Problems	Solutions
Indicator 1 off when light in	No charge voltage	Make sure the connections are working properly.
Indicator 1 flashes in rush	Over-voltage	Make sure tight connections to the battery; charging circuit is broken.
Indicator 3 on, no battery feed	No output	Recheck the connections of appliances.
Indicator 3 flashes in rush, no battery feed	Short circuit in output	Recheck the wires, disconnect the entire load, then press the button, the controller will recover 30 seconds later.
Indicator 3 flashes in ease , no battery feed	Over-Load	Reduce the load power, press the button, the controller will recover 30 seconds later.
Indicator 2 red, no battery feed	Deep-discharge	Charge the battery to full.

6.Specification

Model No.	SDRC(MT)-10A	SDRC(MT)-20A
Rated charge/load current	10A	20A
System voltage	24V/12V Auto Recognition	
Over-load/voltage Protection	60 seconds after 1.25 times of rated load current, or 5 seconds after 1.5 rated loads current will trigger over-load protection. Short Circuit protection starts at once at ≥3 times of rated load current	
Max. Self-consumption	≤6 mA	
Charging circuit voltage drop	≤0.26V	
Load circuit voltage drop	≤0.15V	
Over voltage protection	17V, ×2/24V;	
Ambient Temperature	-35℃ to +55℃;	
Boost charge	14.6; 2X/24V, 10min	
Main Charge	14.4V; ×2/24V, 10min	
Float charge	13.6V; ×2/24V;	
Temperature compensation	-5mv/℃/2V	
Lower voltage indicates	12.0V; ×2/24V;	
Deep discharge Protection: Cut-off voltage Reconnect voltage	 11.1V; x2/24V 12.6V; x2/24V	
Control mode	PWM charge mode; modified discharge voltage by the discharge rate	
Battery type	Lead acid (GEL, Flooded, AGM)	
Dimensions	120*100*25(mm)	
Weight	220g	
Warranty	1 year	

7. Warranty

Limited Warranty:

Beijing Remote Power Renewable Technology Co., Ltd warrants that the solar charge controller are free from defects in material and workmanship under normal conditions of use, installation, operation and maintenance, within a period of one(1) year as from the date of delivery.

If a solar charge controller is found defective in material and /or workmanship, RemotePower will, at its sole discretion, repair or replace the solar charge controller within the above specified period.

Repair and replacement are the only and exclusive performances guaranteed under the Product Warranty which is limited to the above specified period.

Warranty Exclusions:

The above Limited Warranties are not applicable, should Remote Power determine , at its sole discretion, that the solar charge controller has been incorrectly operated, or inappropriately used, or exposed to accidents, or damaged by misuse, by modification, by unsuitable installation or use, by negligence with storage, transport or handling, or repaired or modified –in whatever manner-by anyone other than RemotePower or it's authorized third party.

Further exclusions of the limited warranties include defects:
Caused by outer impacts, e.g. defective equipment parts, appliances, system components like connecting cables, invertors, or the like, which have been coupled with the solar charge.

controller by anyone other than RemotePower , or caused by defective system design, configuration, or installation planning.

Caused by faulty wiring or installation, or faulty handling duringthese work;

Caused by operation in inappropriate environment or with inappropriate methods, which deviates from the instructions in product specification, and/or operational manual and/or label;

Caused by force of nature, force majeure, or other unforeseeable circumstances outside of the range of the influence of RemotePower, for instance, earthquake, typhoon, whirlwind, volcanic eruption, flood, lightening, snow damage, etc.

The Limited Warranties do not cover any cost associated with installation, removal or

Returns:

Products returned to RemotePower must be pre authorized by RemotePower or one of its agents authorized for this purpose. The original purchaser must send with the product proof of purchase. The product shall be sent prepaid insured and packaged for safe shipment by the original purchaser all costs for this are to be born by the original purchaser.

Accepting the Warranty:

This document accompanies a warranty card which gives the original purchaser the details for claims by fax, email, post . The original purchaser accepts and agrees that the original purchaser shall have accepted this warranty.

Contact:

Beijing Remote Power Renewable Energy Technology Co., Ltd

Add : Lixiang Building 5325,Zhichun Road 111#,Haidian District,Beijing ,China

Tel:86-10-51796573
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Warranty Card

Before a claim to be made, please full fill below form and fax back to our company at: +86-10-51796571, thanks!

Name:	
Address:	
Postcode:	
Country:	
Telephone:	
Products information	
Product Model:	
Quantity:	
Problem:	
Purchased from:	
Signature:	
Date:	
Suggestions:	