

LIMITED WARRANTY

The Marlec Engineering Company Limited Warranty provides free replacement cover for all defects in parts and workmanship for 24 months from the date of purchase. Marlec's obligation in this respect is limited to replacing parts which have been promptly reported to the seller and are in the seller's opinion defective and are so found by Marlec upon inspection. A valid proof of purchase is required if making a warranty claim.

Defective parts must be returned by prepaid post to the manufacturer Marlec Engineering Company Limited, Rutland House, Trevithick Road, Corby, Northamptonshire, NN17 5XY, England, or to an authorised Marlec agent.

This Warranty is void in the event of improper installation, owner neglect, misuse, damage caused by external factors. This warranty does not extend to ancillary equipment not supplied by the manufacturer.

No responsibility is assumed for incidental damage. No responsibility is assumed for consequential damage. No responsibility is assumed for damage caused by user modification to the product or the use of any unauthorised components.

Manufactured in the UK by
Marlec Engineering Co Ltd

Distributed in the UK by
Sunshine Solar Ltd
www.sunshinesolar.co.uk



Doc No: SM-351 Iss A 18.07.16

Sunshine Solar Ltd

Rutland Remote Display
-Model HRDi
Installation and Operation



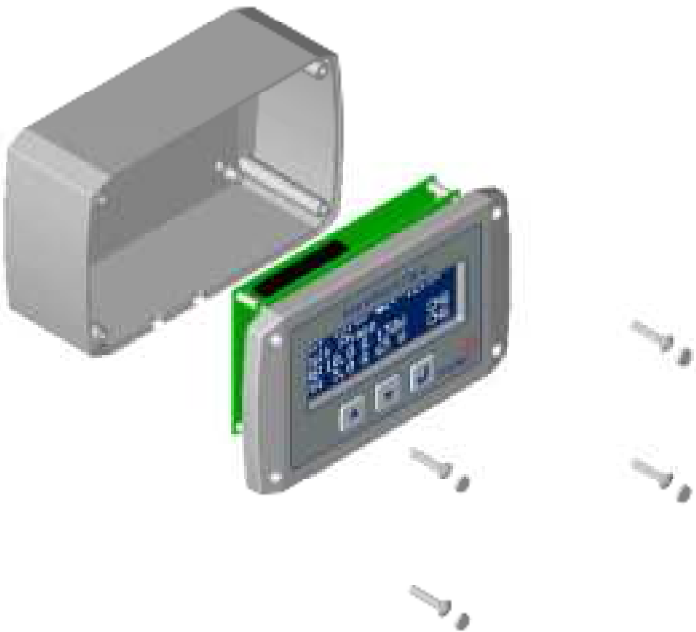
Doc No: SM-351 Iss A 18.07.16

Sunshine Solar Ltd

Introduction

The Rutland Remote 1200 Model is designed for use with the Rutland 1200 Wind Turbine. It enables convenient viewing of the wind generator and PV solar panel charge currents, power, battery Voltages, charging status and accumulated ampere hours of charge to the batteries. It connects to the Rutland 1200 Hybrid Controller via a serial cable and mounting is optional between surface and recessed.

Exploded View



Technical Specifications

Dimensions
Surface Mount: 125x75x50mm Weight: 203g
Recess Mount: 125x75x9mm Weight: 132g Recess Mount Cut Out: 100x62mm

Power Supply: via 3m serial cable supplied. Longer cables available at www.marlec.co.uk



Mounting—2 Options are Available

Surface mount using the supplied back box. Fix the back box using suitable screws and fit the display using screws supplied.
Recess mount by discarding the back box and mount directly to a panel with a 100mm x 62mm cut out, using suitable screws .
Fit the screw caps supplied to finish.

Electrical Connection

The power supply for the unit is provided from the WG1200 controller via the serial data cable supplied. Locate the RJ11 sockets on the controller and display unit to connect the 2 devices. The screen will power up. Press any button to illuminate the backlight.



Power Up to Default Screen

Battery symbols change to show approximate level of charge 0%, 25%, 50%, 75% & 100%

Battery 2 is shown as not connected.
Bulk Phase or Float Phase is displayed
WG = Wind Generator
PV = Photovoltaic panel

Flashing empty battery	Indicates low battery warning
Flashing full battery	Indicates regulating mode
WG or PV Switched OFF	Coincides with Red illuminated button on controller

Start Monitoring

Press the WG and PV buttons on the 1200 Hybrid Controller.

Amps and Watts for each charge source are displayed. Any one of the following is also displayed:

CHG— Charging,

ON— Charge source is on but there is no voltage to start charging.

SBY— Standby, charge source is on but there is insufficient voltage to start charging.

Note: Any button press on the remote with the backlight off will switch it on and start it's countdown timer (default 30s), further button presses when the backlight is on perform functions as shown below.

Using the Remote Display

Press the DOWN and UP buttons to scroll through the available screens;

WG (Amps) - PV (Amps) - Total (Amps) - Default Screen

The screen can be left to display on any screen, the default screen is recommended.

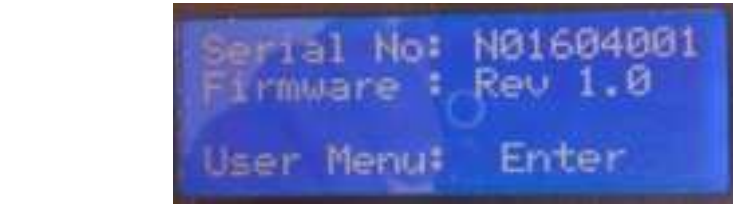
The scale and bar graph alter in response to the levels of energy to display
Accumulated Ampere hours and duration of monitoring elapsed

WG or PV or Total is displayed by scrolling through UP and DOWN

When the charge source, WG or PV, has been shutdown, either at the controller or via the Remote, SWITCHED OFF is displayed.

Settings

These are accessed via the ENTER key. The first screen displayed shows the controller serial number.



Press ENTER to view the programming menu. Use the UP and DOWN keys to scroll through and ENTER to select an option. A cursor indicates the option available to select.



Option 1: Charge Sources On/Off

ON or OFF is displayed
Use buttons below indicated by the arrows:

Toggle the UP and DOWN buttons to change between ON and OFF. Press ENTER to Exit.

Note that when switching WG to OFF the controller enters a soft stall routine, this slowly applies the stall to decelerate the turbine. During this routine, the following is displayed and when complete the display returns to the programming menu.



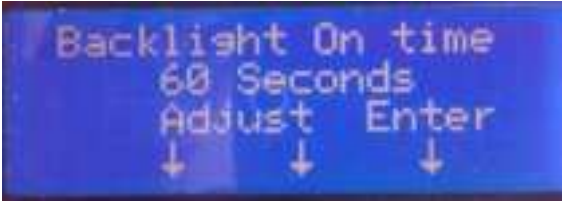
Option 2: Zero Ah Reading

This function sets to zero all accumulated Ah and elapsed time for both the WG and PV simultaneously.

To Confirm	Press ENTER
To Exit and return to the programming menu	Press UP or DOWN

Option 3: Backlight On Time

This function adjusts the length of time the backlight will remain on following a button press. The default On time duration is 30 seconds.



Adjust the seconds using the UP and DOWN buttons to the desired duration, one press adjusts one second. Press ENTER to save this time to non volatile memory and return to the programming menu.

Other Display Indications

Controller Over Temperature and Over Current

The following displays coincide with the controller LED display for these conditions. The WG or PV or both will shutdown and display according to the screen selected as follows:

1. If default screen is selected:

WG or PV or both display Over Temperature

WG or PV or both display Over Current

When the condition subsides the normal display is automatically resumed except in the case of PV over current. See below.

2. If Current screen is selected the WG and PV screens will display as follows:

Caution: PV Over Current

PV Over Current is a permanent error indicating that a PV array current exceeding the maximum possible 20A has been connected. The error indication is only removed following a controller reset. A PV array within permissible rating should be connected. Consult the Rutland 1200 installation manual for further advice.