Rutland 1200 MPPT Controller

Reprogramming Request for Special Battery Systems

Purpose

Where specialist battery types require charging Voltage parameters to be other than the factory default settings these can be programmed at the Marlec factory or by using the Marlec Interface Cable and Rutland 1200 Settings Adjustment App.

We recommend that users consult with their battery supplier or manufacturer to provide the following information for reprogramming. Marlec does not assume any responsibility for the suitability of the customer provided specifications for the operation, condition or lifetime effects on batteries.

Reprogramming is possible on Rutland 1200 MPPT Controllers from serial number NO1802024 and some earlier controllers that may have been factory upgraded, contact Marlec quoting the controller serial number to confirm the suitability for reprogramming.

Factory Default Settings & Your Required Settings

The standard operating Voltage settings for the Rutland 1200 MPPT Controller are based on Sealed, Flooded and Gel batteries shown here in the table. Read the guidance notes on each parameter on the next page to assist in determining your settings and enter them in the shaded box:

Parameter:	12V Operation	24V Operation	48V Operation	User Required Level
Bulk Charge Phase Maximum Set Point	14.4V	28.8V		
Float Phase Maximum Set Point	13.8V	27.6V		
Return to Bulk Voltage level	12.5V	25V		
Low Battery Voltage Warning Level	11.0V	22.0V		
System Voltage Detection	Auto 12/24V			
Temperature Compensation	Enabled when plugged in			
Low temperature Shutdown	Disabled			

The reference temperature for the above Voltage levels is 25°C.

Note that special programming of the controller is a chargeable service.
Please return the form to your contact at Marlec or sales@marlec.co.uk quoting any sales order number that has been issued to you.

Guidance notes for providing the above information:

The following are parameters of the 1200 Controller that can be adjusted to provide compatibility with battery systems other than the standard lead acid.

Bulk Charge Phase Voltage levels:
Bulk phase is when the battery receives most of its charge. The 'Max level' is the limit that the battery should not be charged beyond.

Float Charge Phase Voltage levels:
Float phase is maintaining the battery at full charge after a bulk phase. The 'Max level' is the limit the battery should not be charged beyond to maximise its life.

Return to Bulk Voltage level:
If the battery voltage drops below this level, the battery is considered to be sufficiently discharged to trigger another Bulk phase. The controller will change the regulation voltage levels back to the Bulk levels & the cycle begins again.

Low Battery Voltage Warning Level:
If the battery voltage falls below this level the battery LED will flash red as a warning that the battery is seriously discharged & loads should be switched off until the battery recovers.

System Voltage Detection:
If set to Auto 12/24v the controller will automatically detect the voltage of the system battery & configure itself when battery 1 is first connected. In unusual cases when a 24v system is used & the battery is discharged to an extremely low level where there is insufficient voltage to power the electronics, (This would occur at an extremely low voltage which should be avoided since it can cause battery failure), if the voltage is then allowed to slowly rise, the voltage will first pass through 12v & therefore the controller will incorrectly configure itself for a 12v system. To prevent this, the controller can be configured for fixed 24v.
Note: All the regulation voltage levels above are nominal at 25°C.

Temperature Compensation:
For lead acid battery systems, the battery voltage regulation levels should be adjusted for the battery temperature to ensure complete charging & to maximise battery life. If this is enabled, temperature compensation will be automatically applied to all the regulation levels based on the temperature detected by the remote temperature sensor. If the sensor is not connected, temperature compensation is disabled.

Low temperature Shutdown:
Some battery chemistries require that charging is prevented below a certain low temperature. This feature can be enabled & a temperature level set which will shut down the charge sources when the temperature sensed by the remote sensor falls below this level. The charge sources will be automatically re-started when the temperature rises 1°C above this level. The remote temperature sensor MUST be connected for this to operate.