

Spectra Solar Regulators

for solar power management

.....from a company with a vast wealth of experience in renewable energy.



spectra
from Marlec

Solar power systems have a variety of valuable uses in modern living, from battery charging on boats and caravans to professional applications at isolated sites whose operations are critical.

Solar energy can open up many new options for you to use electrical appliances and equipment away from the grid supply. When choosing the solar panels to suit your application a solar regulator is a key element to ensuring that the batteries don't become overcharged.



Spectra Solar Regulators offer more than simple voltage regulation:

- A LCD display provides essential information about the operating status of the solar system
- The 10A and 20A models conveniently include 2 USB charging points for small devices such as mobile phones.
- Built in temperature compensation adjusts the maximum charging point automatically according to the temperature at the installation. This is important in ensuring that batteries are fully charged wherever you are in the world.
- A connection for devices that will run from the battery is built in up to a maximum power rating. When connected these devices will automatically switch off when the battery reaches a critically low level and reconnect when the battery recovers. See the specification data for details.
- A dusk to dawn switching feature can be activated which is especially useful for small lighting systems.



Leisure



Professional



Public Sector

Spectra Solar Regulators combine modern technology and build quality.

These intelligent regulators use Pulse Width Modulation electronic control to multi-stage charge, delivering bulk charge followed by **absorption** and **float** charging regime to ensure that battery capacities are fully reached and maintained. An additional feature is an **equalised** charging cycle which maintains batteries in good condition over the long term so that your investment in batteries is maximised.

2 year product warranty
Manufactured in ISO9001:2015 facility

Setting up and operating Spectra Solar Regulators is intuitive and easy with:

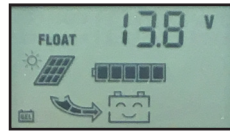
- Automatic voltage detection for 12V or 24V operation
- Push buttons for scrolling screens and settings
- Reverse discharge protection prevents discharge from the solar panels in darkness
- Automatic cut off when devices drawing too high current levels are connected to prevent damage to the unit
- User adjustable voltage settings for those special applications

Display Screens

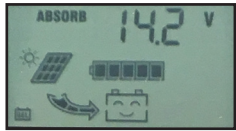
The built in display keeps the system user informed about the current operating mode and condition of the battery. It is also used to programme voltage settings and set up of the lighting function. A few examples are:



Indicates the battery voltage levels and the night light function is on



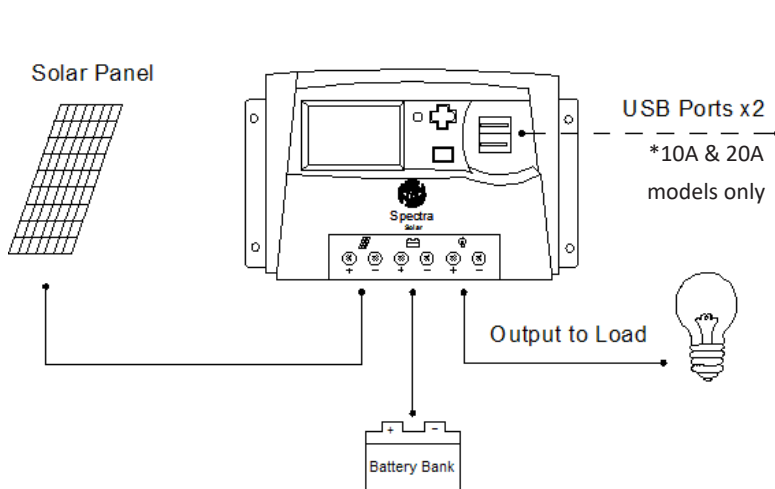
Indicates that the battery is fully charged and receiving solar energy to float charge to maintain it. No load is connected.



Indicates that solar energy is charging in the Absorption phase. No load is connected.



Indicates that the battery is in a critically low state of charge and the Low Voltage Disconnect has shut down the load. No solar energy is being generated at this time.



Simple to Connect Spectra Regulators

The large terminals accept cables up to 10mm² (16mm² for the 30A model).

Auto Detection Voltage Setting

Connect the battery first for the regulator to auto-detect your intended operating voltage to 12V or 24V.

About Marlec

Here at Marlec we have specialised in renewable energy since 1978. Our range of wind turbines, Rutland Windchargers, are used worldwide in some of the harshest working environments on land and sea. We introduced solar panels into our portfolio in 1989 and we have built up extensive and unrivalled experience in the application of solar panels. We work with our customers to provide them with successful solutions that enable them to experience the independence and benefits of "off-grid" energy. Visit our website for all up to date information or call our sales advisors today.



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Spectra Regulator Range Specifications

Model	10	20	30
Input			
Maximum PV Input Voltage	≤50V		
Rated Solar Charge Current	10A	20A	30A
Output			
System Voltage	12V / 24V Auto Detection		
Battery Over-Voltage Protection Level	16V @12V		32V@ 24V
Rated Discharge Current	10A	20A	30A
Self-Consumption	10.5 mA - 13mA (12V) 12.5 mA - 16 mA (24V)		
Charge Loop Voltage Drop	≤0.3V	≤0.21V	≤0.17V
Discharge Loop Voltage Drop	≤0.18V	≤0.1V	≤0.10V
Charging Mode	4 Stage PWM (Bulk, Absorption, Float, Equalized)		
Float Charge Voltage	12V: 13.8V (13V - 15V) 24V: 27.6V (26V - 30V)		
Absorption Charge Voltage	12V: 14.4V (13V - 15V) 24V: 28.8V (26V - 30V)		
Duration of Absorption	2hrs		
Voltage of Equalized Charging	12V: 14.6V (13V - 15.5V) 24V: 29.2 (26V - 31V)		
Duration of Equalized Charging	2hrs		
Low Voltage Disconnection	12V: 10.8V (10V - 14V) 24V: 21.6V (20V - 28V)		12V: 10.7V (10V - 14V) 24V: 21.4V (20V - 28V)
Low Voltage Reconnection	12V: 12.6V (10V - 14V) 24V: 25.2 (20V - 28)		
Lighting Control Modes	Regulator control mode, light control with switch-off point at night and switch on point before dawn, Light control mode		Self-timing switch on/off mode
Light Control Voltage	12V: 5V (1V - 10V) 24V: 10V (2V - 28V)		
Battery Type	Gel, Sealed and Flooded. Programmable for other types.		
USB Connection Points	2 x 5V 1A		N/A
Other			
Interface	LCD, 2 buttons		LCD, 3 Buttons
Wiring	Terminals, ≤10mm ²		Terminals, ≤16mm ²
No Load Losses	≤13mA		
Working Temp	-20 - +55°C		
Working Humidity	10% - 90%, no condensation		
Dimensions	160 x 88 x 42.5mm	178 x 101.5 x 45.5mm	196 x 111 x 54mm
Weight	290g	310g	400g
IP Rating	IP30		