

More power from the sun when you need it most.

Maximum Power Point Tracking (MPPT) regulators were once only used rarely... but the cost-effectiveness and ease of use offered by the PowerStar changes all that.

The greatest demands on solar powered systems occur in winter. A time of shorter days and colder temperatures, winter conditions used to dictate the ultimate size requirements - and therefore expense - of the solar cells and batteries.

The PowerStar can increase the power yield from your solar cells by up to 30% in cold and overcast conditions, giving a critical edge, reducing cost and the environmental footprint.

Minimisation of solar cell size is also an advantage for high-wind area installations.



REDARC

THE POWER CONVERSION SPECIALISTS

Maximum power extraction

PowerStar extracts the maximum possible power from your solar panels. Available in power ratings of 250, 500 and 1000W, PowerStar will always be able to supply your batteries with more current at the most needed time... during cool and cloudy periods.

How does PowerStar work?

PowerStar (Switch Technology Advanced Regulator) works by ensuring that the battery charging voltage is maintained at the optimum level under all operating conditions.

The system incorporates advanced switch mode concepts and microprocessor technology to monitor operating parameters and adjust the system to maintain peak performance at all times.

Conventional regulators are only able to extract the power out of the panel corresponding to the battery voltage, which ranges from about 12V to 14V.

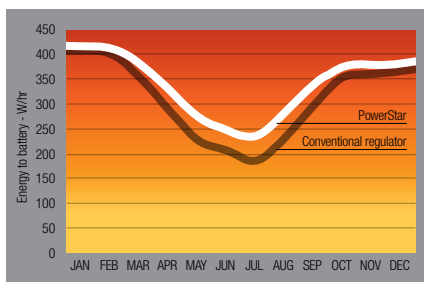
PowerStar finds the optimal operating point for the system according to environmental conditions, and using high efficiency DC - DC conversion, maximising power transfer to the battery.

Up to 30% more power

Solar installations are designed around the worst case scenario.

The number of panels required in a system are dependent on the average peak sun-hours for the month with the lowest solar radiation levels.

PowerStar is able to extract maximum power out of your solar array by use of high efficiency DC-DC



conversion. Conventional regulators aren't able to put out as much power out when the panel is cool. At a cell temperature below 25°C, PowerStar can transfer up to 30% more power.

Easy setup interface

PowerStar is easy to set up using a computer. The computer communicates with PowerStar via a RS-232 link, allowing operating parameters to be easily entered and verified. PowerStar can also be supplied preconfigured.

The computer also manages the download of up to 400 days operational data from the PowerStar data logger.



Innovative technology

PowerStar incorporates a number of innovative design features including:

- Closed-loop control maximum power point tracking technology
- Microcomputer control
- Advanced tracking algorithms
- Flexible programmable modes
- Lighting timer control
- Automatic battery management
- RS-232 Serial communications link
- Extensive diagnostics
- Tapered charge facility
- Battery equalise function
- User configuration of all battery charge and load control settings

- Temperature compensation
- Normal load control, night light control and load timer control
- Three stage charging with automatic equalisation
- Able to find the true maximum power point of any PV array in any condition

- Lightning protection
- Reverse polarity protection on both battery and solar sides
- Data logging up to 400 days
- Environmentally sealed packaging

Look at the benefits...

PowerStar is no more expensive than most conventional regulators, yet it:

- Saves you money
- Facilitates fine tuning
- Increases system life
- Makes maintenance faster and easier
- Improves flexibility
- Helps you to help the environment

Tailored for recreational vehicles

The PowerStar model PS-2024 has been designed specifically to address the recreational vehicle market.

The unit provides up to 500W (24 volts at 20A) which is more than enough for most RV installations.

Contact Redarc for all your solar power requirements including solar regulators, solar panels and other components to complete your solar system.

Part No.	SR05	SR20-12	SR20	SR20-48
Battery voltages	12/24V	12V	12/24V	24/48V
PV voltages	12/24V ¹	12V	12/24V ¹	24/48V ¹
Max battery current	5A	20A	20A	20A
Max load current	5A	10A	10A	10A
Quiescent current draw	5mA	8mA	5mA	5mA
Operational current draw	10mA	70mA	10mA	10mA
Operational temperature range	-40°C to +60°C ²	-40°C to +40°C	-40°C to +60°C ²	-40°C to +60°C ²
Efficiency	94%-99% ³	94%-99% ³	95%-99% ³	95%-99% ³
Certification	CE	CE	CE	CE
Dimensions	196 x 92 x 42mm	112 x 107 x 36mm	196 x 92 x 68mm	192 x 92 x 68mm

1. Panel voltage must be equal to or greater than battery voltage. 2. As ambient temperature rises above 50C, the current throughput is automatically decreased preventing damage to components. 3. The worst-case efficiency only occurs when there is a maximal difference between solar panel voltage and battery voltage, e.g. if the solar voltage was 17V and battery voltage was 12V the extra power collected compared with a conventional regulator may be 30%. The extra power transferred to a battery compared with 100% efficient conventional regulator is 23%.

See PowerStar at your nearest Redarc stockist or contact Redarc for further information



Quality Endorsed Company
GEC5378
ISO 9001:2000

Redarc Electronics

ABN 77 136 785 092

23 Brodie Road North
Lonsdale South Australia 5160

Local

Phone (08) 8322 4848
Fax (08) 8387 2889

International

Phone +618 8322 4848
Fax +618 8387 2889



THE POWER CONVERSION SPECIALISTS