

I M A R K



**Hybrid Regulators
For Wind **and** Solar**



**Shunt Regulators
For Solar**

**Efficient, High Power, High Voltage Hybrid, Solar or Wind Regulators
For Harsh Environment Remote Area Power Systems**

Got The Best Of Both Renewable Energy Resources?

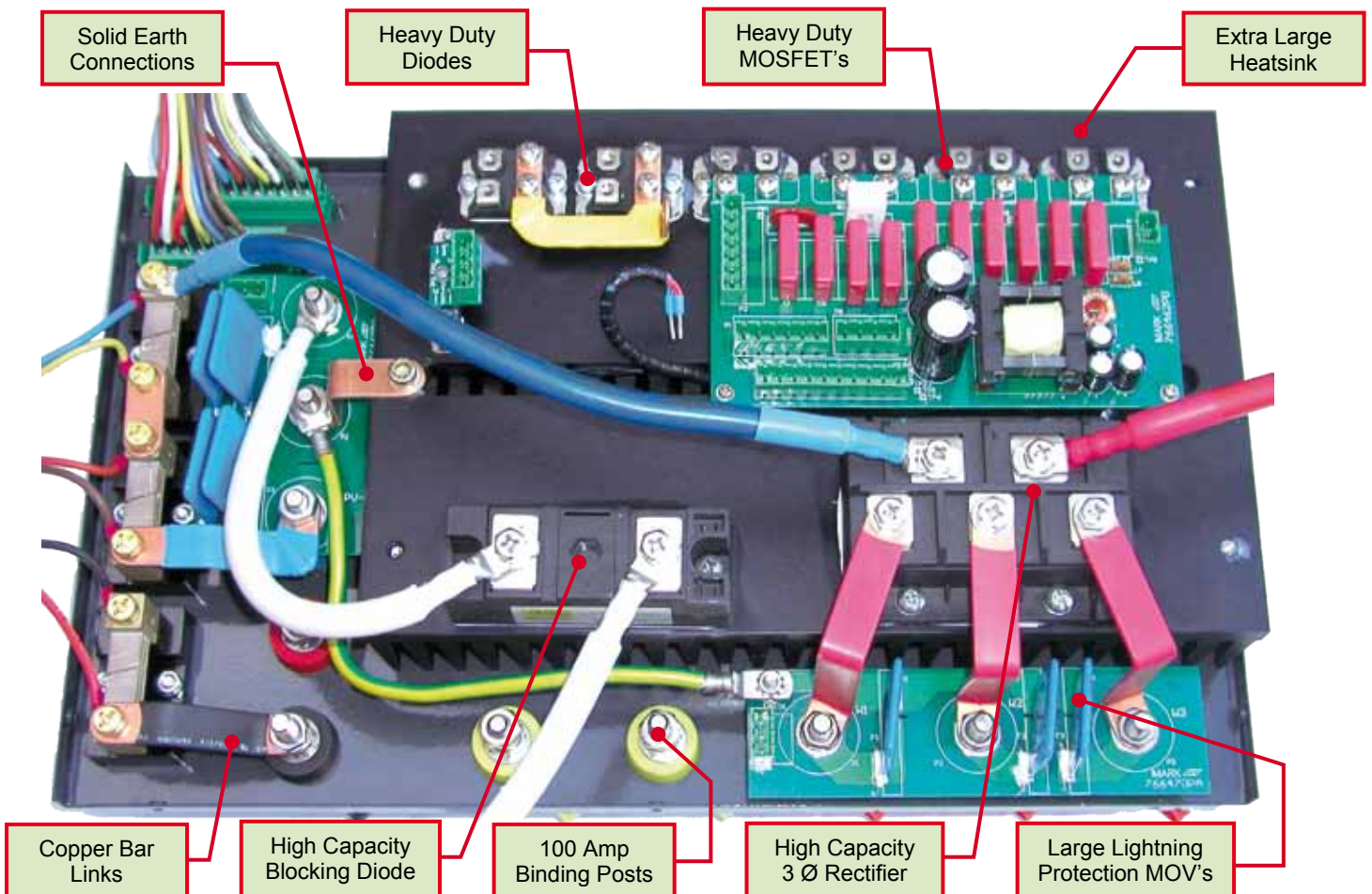
If your location has both wind and sun, you have the “best of both worlds” and the IMARK Hybrid Regulator is the ideal solution. It will accept both inputs simultaneously. No switching! No changing over! Just an efficient means of capturing both free resources!

The Hybrid Regulator includes terminals for the optional Load Dump and automatically activates the load dump contactors as and when required. It even has a terminal on the rear panel connector which can be used to activate external devices such as water pumps, air conditioning, heaters, etc to utilise the available energy to the maximum, rather than wasting the excess energy through a load dump.



- Heavy Duty Circuit Breaker
- Illuminated Meters
- Battery Temp, Battery Volts, Charge Current
- Wind Input Current, Solar Input Current
- Compact 6RU 19" Rack Mounting Cabinet
- Protective Handles make handling easy
- Built-In Lightning Protection MOV's for Wind & Solar

- Fan-Forced Cooling if Heatsink exceeds 60°C
- Easy Interfacing with External Devices
- Easy Access to Heavy Duty Cable Terminals
- Battery Temperature Sensor included
- Can be Rack Mounted or Wall Mounted
- Easy Front Access to Set-point Adjustments
- 98% Efficiency



Got An Abundance Of Sun?

For solar applications, the Imark Solar Regulator is the ideal unit for your installation!

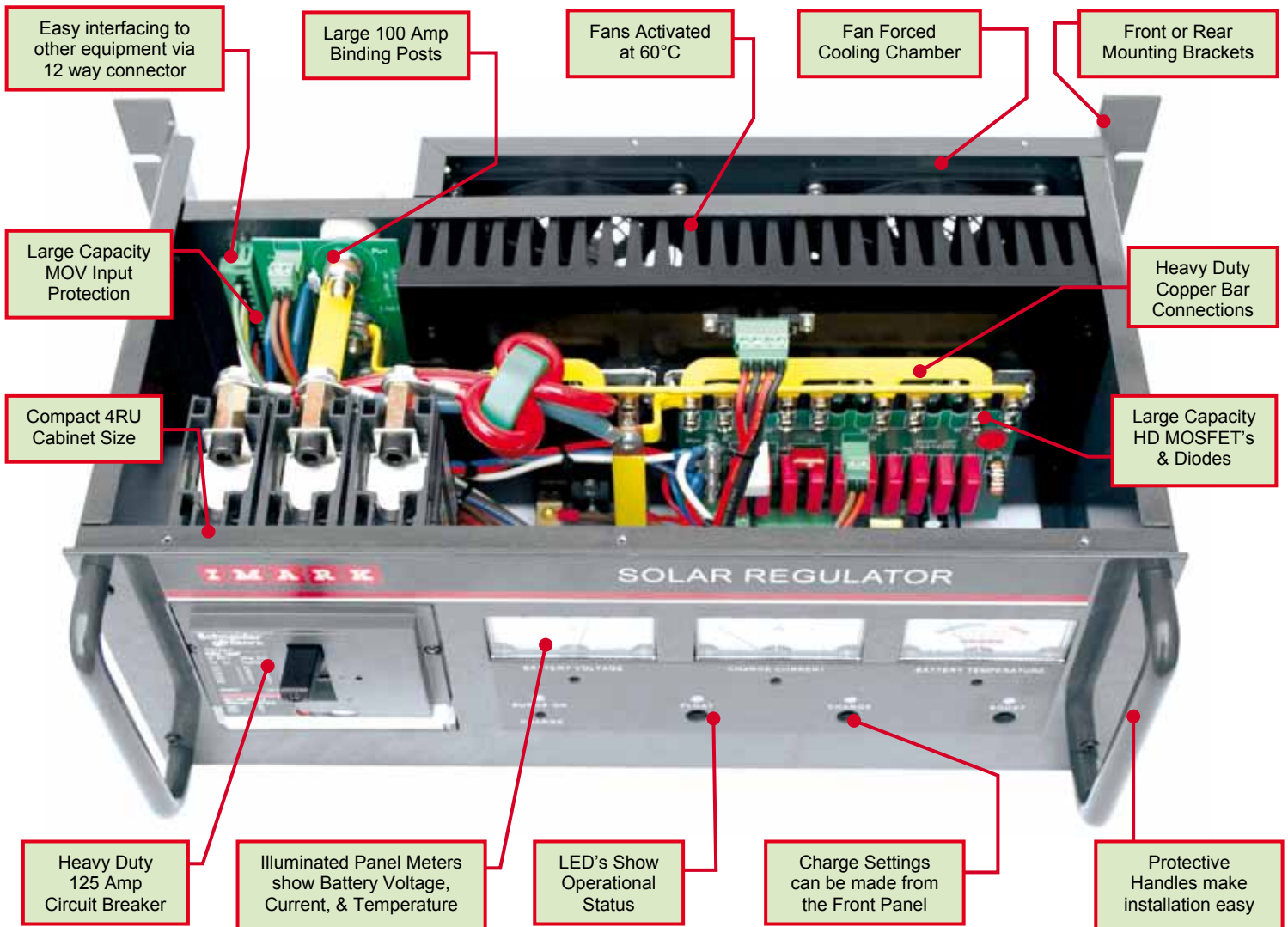
When your location has an abundance of solar energy, and little wind, the IMARK SR range of Solar Regulators are ideal to capture the free solar energy, charge your battery bank and power your needs.

Packed full of features and heavy duty components the Imark Solar Regulators are built in Australia and designed to withstand our tough environment.

If you have an abundance of wind, then order the IMARK Wind Regulator for your installation. These Imark shunt regulators all have similar features, but with some specific differences. Accordingly, models can be tailored to suit any application.



- Heavy Duty Circuit Breaker
- Illuminated Meters for Battery Voltage, Battery Current, & Battery Temperature
- LED's show operating status at a glance
- Protective Handles make handling easy
- Compact 4RU 19" Rack Mounting Cabinet
- Built-In Lightning Protection MOV's
- Fan-Forced Cooling if over 60°C
- Easy Interfacing with External Devices
- Easy Access to Heavy Duty Cable Terminals
- Battery Temperature Sensor included
- Can be Rack Mounted or Wall Mounted
- Easy Front Access to Set-point Adjustments
- >98% Efficiency



Rugged and Reliable

These IMARK Regulators are high power, high voltage units designed for harsh Remote Area Power Systems where they can be expected to perform efficiently & reliably irrespective of temperature and without any regular maintenance or user intervention. Models are available for solar, or wind, or both inputs.

Shunt Regulation is used to provide you with maximum energy from the free renewable source.

Your batteries will be charged efficiently in a manner that prolongs battery life. The meters provide easily read operating status. These IMARK Renewable Regulators can be installed in parallel configurations to satisfy the needs of higher power installations.

Imark is a wholly Australian owned company and we are proud to design and manufacture our own products in Australia. This gives us the flexibility to customise our products to suit the individual needs of the end user. Accordingly, we back our products with great technical support and a wide range of spare parts.



TECHNICAL DESCRIPTION

The IMARK HR & SR regulators utilise high power low $R_{DS(on)}$ MOSFET's for switching. These are shunt regulators that only regulate when the battery is fully charged, thus providing maximum efficiency while minimising heat generation. Both regulator models are housed in metal cabinets that can be either wall or 19" rack mounted. 12-way (& 10-Way) interface connectors on the rear panel enables easy interfacing to external devices or popular inverters. Large capacity MOV's are fitted internally for lightning protection on both PV and wind inputs. 100 Amp binding posts for battery, PV, Wind, & Earth connections are fitted on the rear panel. LED's are used to indicate the battery charging modes, & the Surge Protection conditions, while illuminated panel meters show Battery Voltage, Battery Charge Current, Battery Temperature, PV Input Current, & Wind Input Current. Easy to read meters provide non-technical people with easily understood information that can be very helpful for remote diagnosis of system performance.

The IMARK HR regulator includes a high capacity 3-phase Bridge rectifier thus allowing 3-phase AC input from the wind turbine. A high capacity blocking diode on the PV input, and 100 Amp continuous duty contactors before the load dump terminals are also included, thus minimising connection of external devices, and cutting installation time. Battery Charging parameters can be set from the front panel again saving installation time.

SPECIFICATIONS

MODELS	SR48V5K	SR120V12K	SR240V16K	HR48V6K WR48V5K	HR120V12K WR120V12K	HR240V16K WR240V16K
IMARK Stock #	804834	804832	804833	804872 804882	804873 804883	804874 804884
Battery Voltage (nominal)	48Vdc	120 Vdc	240Vdc	48 Vdc	120 Vdc	240 Vdc
Input Voltage (Maximum)	150Vdc	250 Vdc	400Vdc	150 Volts	250 Volts	400 Volts
Input Power (maximum)	5kW	12kW	16kW	6kW	12kW	16kW
Renewable Input	Direct Current			3 Phase Alternating Current (Wind) Direct Current (PV or Wind)		
Regulation Method	Shunt, Pulse Width Modulation					
Efficiency	Greater than 98% when battery charging					
Charge Setpoints	Float, Charge, & Boost					
Charge Setpoint Adjustment	Set by Rotary Switch on PCB, calibrated in cell voltage					
Battery Conditioning	Batteries held at Charge voltage for 2 hours each day, followed by Float Charging					
Voltage Setpoint Range	2.225V to 2.600V per cell					
Temperature Compensation	None, or External Sensor, set by link, 6mV/°C/cell					
Fans Operating Range	ON at 60°C, OFF at 55°C					
Over Temperature Protection	Over Temperature sensor trips circuit breaker on high (90°C) heatsink temperature					
Over Voltage Protection	Independent Battery Over Voltage Protection circuit trips circuit breaker after 2 minute delay					
Cabinet Size	19" 4RU			19" 6RU		
Unit Size & Weight	250(L) x 483(W) x 176(H) mm 14 Kilograms			260(L) x 483(W) x 264(H) mm 22 Kilograms		
Shipping Size & Weight	575(L) x 540(W) x 305(H) mm 15.5 Kilograms			575(L) x 540(W) x 305(H) mm 23.5 Kilograms		
Inclusions	Regulator, Manual (on CD), Battery Temperature Sensor, Mounting Brackets, Screws, & Nuts					
Design & Construction	Australian designed and manufactured					



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