

MPPT Solar Regulators

SR SERIES

FOR YOUR HIGH VOLTAGE
SOLAR INSTALLATION



The complete family of solar regulators ideal for charging 24Vdc, 48Vdc, or 120Vdc Battery Banks for 3kW, 6kW or 15kW Solar Arrays.

Efficient, Feature Rich Regulators For Harsh Environment Remote Area Systems.



COMMUNICATIONS | AUSTRALIA

:: SR SERIES

Everything you need without the fuss

The IMARK SR series entry-level models form part of the complete range of Rugged Reliable Solar Regulators.

Simplicity while maintaining all the performance features needed to efficiently manage your solar system.

The same heavy duty heatsink, and power components as the full featured IMARK SRX models, ensures maximum solar performance and equipment reliability

Dual Independent MPPT Channels permit East and West PV Panel Orientation installations



LED's provide simple status and diagnostics information at a glance

Easy interface to solar panels and battery bank

SR Series Features:

- MPPT maximises the solar energy harvest especially in poor sunlight conditions, or if using solar panels with less than ideal voltages
- Dual Independent MPPT Channels permit East and West PV Panel Orientation installations
- Interleaved MOSFET switching reduces noise interference
- Large Heatsink & rugged construction ensure cool running and promote reliability and longevity
- Easy mounting arrangement
- All models rated for 100 Amp charging capability at battery voltage
- Models to charge nominal 48 Volt or 120 Volt battery banks
- High Input-Output Efficiency – better than 95%
- CANBus communication allows system expansion up to 4 regulators, to form a larger integrated system
- 10 Amp Load Output can be managed with conditions, when programmed from SRX LCD models
- Battery Temperature Sensor included
- Ambient Temperature Sensor optional
- Extensive protection features
- Remote Internet access available for up to 4 units when installed with one Internal LCD or a Remote LCD Unit
- LED's provide simple status and diagnostics information at a glance
- DIP switches permit easy on-site programming.

:: SRX SERIES

All the bells and whistles

The SRX series “Top of the Range” versions are packed with useful features and can be programmed to satisfy almost any customer requirement. They are complete with the **Imark Site Explorer** enabling Internet access capability for performance monitoring and providing easy setting change ability.



100 Amp charge capability for 48 volt or 120 Volt battery banks.

4 x 20 Alphanumeric back-lit STN LCD display provides better visibility in bright light conditions, and at night

Direct computer connection using your Web Browser via the Ethernet port.

SRX Series Features:

- The SRX Series include all the features of the SR models but substitutes the DIP switches for a more advanced LCD display
- CANBus communications allows system expansion of up to 4 regulators to form a larger integrated system.
- 100 Amp charge capability for 24 volt, 48 volt or 120 Volt battery banks.
- Load Output can be managed with conditions, such as Time, Battery SOC, or Temperature to control Lights, Pumps, Fans, or other equipment
- Easy Set-point Adjustments using the Keys and LCD Display – Password protected
- SR & SRX series can be “mixed & matched” to increase system size
- One SRX regulator can interact with 3 SR Series Regulators in the one system to reduce system costs.
- Signal Output Terminal to control external devices which can be managed by Battery SOC, Time of Day, and/or Temperature conditions
- Shutdown Alarm output terminal for telemetry applications
- Lifetime performance data can be stored on the optional SD Card, and can be downloaded directly to a Laptop or PC via the Internet.
- A 4 x 20 Alphanumeric back-lit STN LCD display provides better visibility in bright light conditions, and at night, while reducing power consumption
- 6 tactile key switches with audio & visual indication to navigate menus or change settings
- Screen presentations show instantaneous, daily, or lifetime information on PV Input Power, PV Input time, Load Output Power, Load Output time, battery input, battery output, output signal terminal run time, etc
- Direct computer connection using your Web Browser via the Ethernet port. No special app required!

:: MPPT REGULATORS

Easy interface for solar panels and battery bank



- All external connections in one convenient location to make installation a breeze
- All PV connections are made with MC4 type Plugs & Sockets enabling easy fast trouble free installation
- All connectors are unique to prevent miss-connection and/or damage
- Direct internal battery cable connections. Input Glands will accept large battery cables - up to 70mm
- LOAD Outputs for fans or DC Lighting up to 10 Amps at battery voltage
- Signal Outputs for control of fans, lights, air conditioning, pumps, generator, or other equipment managed by conditions when programmed from a SRX100 LCD model
- Shunt outputs (from internal shunt) for direct connection to inverters (Optional)
- Ethernet port for use at sites with Internet capability and can be used with an external wireless Modem for remote interrogation, for data downloading, or for making setting changes
- CANBus connections for the Remote LCD Display and for connection to multiple SR or SRX Regulators.

Options to satisfy any installation requirements



- External power supply is NOT required for remote extensions up to 50 metres
- Includes all features and functions described for the internal LCD display
- Ideal for monitoring system performance from the office or home
- SD Card Slot (SD Card devices optional)
- Ethernet port for access from anywhere using your web browser and the Internet
- 4RU Rack Mounting configurations are available using any model combination
- Rack mounting models include the same features as the wall mounting models, and can be installed as a system with up to 4 regulators
- Cooling fans included on Rack Mounting models to enhance cooling when installed in congested rack installations.
- Optional Remote Control Unit connects directly to regulators via CANBus
- Can be up to 100 metres from SR/SRX Regulators

MPPT Solar Regulators SR SERIES

Internet Connectivity without any fuss using Imark Site Explorer

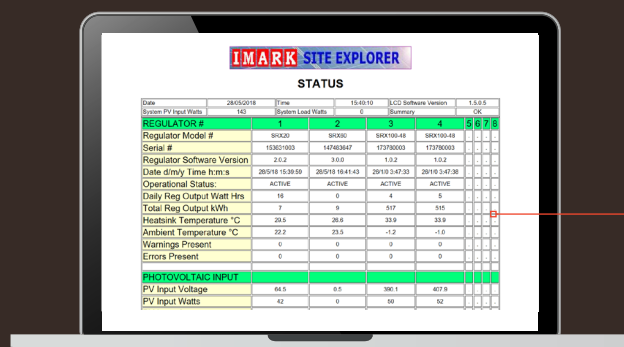
The Imark Site Explorer easily enables changes to installation settings, or just the ability to monitor your system performance using your standard web browser. Only one SRX regulator with the LCD Display needs to be installed to monitor and interrogate up to four regulators when connected correctly.

Any SR and SRX model in a system can be interrogated from one LCD display, or by direct connection to the LCD using a PC or laptop computer.

With Internet access on site, Imark Site Explorer lets you can do the lot (monitor, download data, or change settings) from your desk, your smart phone or your tablet, anywhere in the world.

Everything works the same either directly connected or using the Internet!

Remote access



IMARK SITE EXPLORER

STATUS

Date	28/05/2018	Time	15:40:10	LCD Software Version	1.0.0.5
System PV Input Watts	127	System Load Watts	0	Summary	OK
REGULATOR #	1	2	3	4	5 6 7 8
Regulator Model #	SRX20	SRX30	SRX100-48	SRX100-48	
Serial #	132021003	147483047	172378003	172378003	
Regulator Software Version	2.0.2	3.0.0	1.0.2	1.0.2	
Date dim'y Time h:m:s	28/05/18 15:39:59	28/05/18 16:41:43	28/05/18 2:47:33	28/05/18 2:47:38	
Operational Status:	ACTIVE	ACTIVE	ACTIVE	ACTIVE	
Daily Reg Output Watt hrs	16	0	4	5	
Total Reg Output kWh	7	9	507	555	
HeatSink Temperature °C	29.5	28.6	33.9	33.9	
Ambient Temperature °C	22.2	23.5	-1.2	-1.6	
Warnings Present	0	0	0	0	
Errors Present	0	0	0	0	
PHOTOVOLTAIC INPUT					
PV Input Voltage	44.5	0.5	396.1	407.9	
PV Input Watts	42	0	59	52	

Monitor your system operation from anywhere using the Internet, or directly using a laptop, or PC. Regulator performance is updated at 15 second intervals thus providing up to date performance data. Data can be down-loaded on a daily, weekly, monthly, annual, or lifetime basis directly into MS Excel for easy graphical monitoring.

The Imark Site Explorer enables setting changes (password protected) to be done instantly. The Settings screen displays the settings for up to four regulators in columns enabling easy settings comparisons or changes.

Alarm Messages, if present, can be viewed and acted upon immediately.

can be accessed and data reported immediately.

A smartphone screen showing the 'IMARK SITE EXPLORER' LCD Mimic interface. It displays real-time data: 3.0 HL BATTERY, FLT, State of Charge 100%, Present Volts 54.1V, and Temperature 18.8°C. Below the data is a battery status bar with 10 segments, 9 of which are green. At the bottom, there is a 'Send Data Back Message' input field.

A tablet screen showing the 'IMARK SITE EXPLORER' MESSAGES screen. It displays a list of messages with columns for Time, Message, and Status. The messages are color-coded: green for 'OK', yellow for 'Warning', and red for 'Error'. The bottom of the screen has a 'Go To Main Menu' button.

A desktop monitor displaying the 'IMARK SITE EXPLORER' SETTINGS screen. The screen is divided into two main sections: 'SETTINGS' and a table of regulator and battery parameters. The 'SETTINGS' section includes fields for Date, Time, System PV Input, System Load, Enter Password, Access Level, Regulators in System, Summary, Local IP Address, and a numeric keypad. The table below lists parameters for 7 regulators and various battery settings, with values for each.

Mimic Screen enables you to see and monitor field changes as they happen without leaving your desk.

MPPT Solar Regulators SPECIFICATIONS

Model #	SR100-24	SRX100-24	SR100-48	SRX100-48	SR100-120	SRX100-120
PV Input Voltage Range	60 – 300Voc dc (Max)		120 - 500Voc dc (Max)		300 - 500Voc dc (Max)	
Nominal DC Battery Voltages	24 Volts dc (nominal)		48 Volts dc (nominal)		120 Volts dc (nominal)	
Regulator Operating Modes	OFF, Standby, Bulk, Absorbtion, Float, & Equalise					
Charging Modes	Standby (Night), Bulk, Absorb, Float, & Equalise					
Maximum Charge Current	50 Amps per MPPT Powerboard 100 Amps Total					
Maximum Load Current	10 Amps on LOAD Terminals					
Load Voltages	Same as Battery Voltages					
Load Disconnect Voltages	Based on the settings for each regulator					
DC Load Voltage Regulation	Battery Voltage ±50 mVdc					
Status Display Method	6 x LED's	6 x LED's + 4x20 LCD	6 x LED's	6 x LED's + 4x20 LCD	6 x LED's	6 x LED's + 4x20 LCD
Historical Data Storage	N/A	SD Card	N/A	SD Card	N/A	SD Card
Efficiency	Approx 95%					
Operating Temperature Range	0°C to 50 °C					
Storage Temperature Range	-30°C – +70 °C					
Pollution Degree	2					
Ingress Protection	IP20					
Maximum Altitude Rating	2000 Metres					
Humidity	95% non-condensing					
Low Battery Load Release	0–65 Vdc adjustable		0–65 Vdc adjustable		0 – 163 Vdc adjustable	
Low Battery Load Re-Connect	0–65 Vdc adjustable		0–65 Vdc adjustable		0 – 163 Vdc Adjustable	
Battery Drain in Standby Mode	3.5W maximum on DIP Switch Models or 10W maximum on LCD Models					
Dimensions (excluding protrusions) and Weight	325W x 315L x 185H mm 18.5 Kgs (approx.)		375W x 320L x 170H mm 20 Kgs (approx.)		375W x 430L x 170H mm 23 Kgs (approx.)	
Safety Standards	IEC 62109:1, AS5033					
PV Input Rating (Isc)	25A per PV Input					
Compliance Markings	per IEC62109 Pt1					

STANDARD FEATURES

Battery Protection	Load Output Disconnect Re-Connect, & PV Charge Stop based on setup settings
Battery Temperature Sensor	Included as standard with 5M Cable and bootlace terminals - Optional Amb
Battery Charger	Five stage battery charging regime (Night, Bulk, Absorption, Float, & Equalise)
Remote Output Signal	Automatic selection based on S.O.C., Time, Temperature, & Period conditions
Remote Output Signal	Voltage Free signal terminal to activate external equipment (OPEN/CLOSE) with 100mA max sink current x 2
Cooling	Convection (internal DC Fans included on 19" Rack Mounting models)
Temperature De-rating	Output current is progressively reduced to 0 Amps from 60°C to 80°C.

OPTIONS

Remote Control Unit (Optional)	In-built 4x20 back-lit alphanumeric liquid crystal display with 6 LED Status indicators, 6 keys, CANBus, & Ethernet connectors.
SC Card (Optional)	Different capacity SD Storage Cards
Inputs/Outputs	PV Inputs x 2 or 4, Battery + & Battery -, Load Output x 2 pairs, 16 way for external terminals, CANBus x 2, USB, Ethernet, SD-Card, Keys x 6

REMOTE LCD UNIT SPECIFICATIONS

Imark Stock #	804870
Size	160mm (W) x 130mm (H) x 55mm (D) or 19" (W) x 53/16" (H) x 2 1/4" (D) (excluding protrusions)
Weight	1.3 Kgs (2.9 Lbs)
Shipping Dimensions	180 x 170 x 80mm 1.4 Kgs



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.



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