

## User Manual

### SR250A/D/L/LP

*AC/DC power supply/charger with optional communications port  
250W*



Z367

<b>Model Codes:</b>	<b>SR250A</b>	<b>= Basic version</b>
	<b>SR250D</b>	<b>= with mains fail and dc low alarms</b>
	<b>SR250L</b>	<b>= with mains fail, dc low, dc high alarms</b>
	<b>SR250P</b>	<b>= with output diode (24V &amp; above) and “D” alarms</b>
	<b>SR250LP</b>	<b>= with output diode (24V &amp; above) and “L” alarms</b>

*Please refer to separate user manual for full SNMP instructions for **SR250L** and **SR250LP** models  
Refer to last page for customised model codes.*

## **Safety**

The user is responsible for ensuring that input and output wiring segregation complies with local standards and that in the use of the equipment, access is confined to operators and service personnel. A low resistance earth connection is essential to ensure safety and additionally, satisfactory EMI suppression (see below).

**HAZARDOUS VOLTAGES EXIST WITHIN A POWER SUPPLY ENCLOSURE AND ANY REPAIRS MUST BE CARRIED OUT BY A QUALIFIED SERVICEPERSON.**

## **Electrical Strength Tests**

Components within the power supply responsible for providing the safety barrier between input and output are constructed to provide electrical isolation as required by the relevant standard. However EMI filtering components could be damaged as result of excessively long high voltage tests between input, output and ground. Please contact our technicians for advice regarding electric strength tests.

## **Earth Leakage**

Where fitted, EMI suppression circuits cause earth leakage currents which may be to a maximum of 3.5mA.

## **Ventilation**

High operating temperature is a major cause of power supply failures, for example, a 10°C rise in the operating temperature of a component will halve its expected life. Therefore always ensure that there is adequate ventilation for the equipment. Batteries in particular suffer shortened lifetimes if subjected to high ambient temperatures.

## **Water / Dust**

Every effort must be made in the installation to minimise the risk of ingress of water or dust. Water will almost always cause instant failure. The effects of dust are slower in causing failure of electronic equipment but all electrical equipment should be cleaned free of any dust accumulation at regular intervals.

## **Electromagnetic Interference (EMI)**

Switching power supplies and converters inherently generate electrical noise. All wiring should be as short as practicable and segregated from all equipment wiring which is sensitive to EMI. Residual noise can be reduced by looping DC wiring through ferrite cores (sleeves). These are most effective as close to the power supply as possible and as many turns of the wire taken through the core (+ and - in the same direction) as the core will accommodate.

## **External fuse protection**

Fuses or circuit breakers must be used in all battery circuits to protect against short circuits. External fuses should be used for power supplies/ chargers even though they are usually internally protected.

## **Connection polarity**

It is critical to check the polarity carefully when connecting DC devices even with models which have non-destructive reverse polarity protection.

## **Glossary of terms used in our user manuals**

**PSU** = power supply unit

**BCT** = battery condition test

**ECB** = electronic circuit breaker

**ELVD** = electronic low voltage disconnect

**RPP** = reverse polarity protection

**EMI** = electromagnetic interference

**SNMP** = Simple Network Management Protocol

**LAN** = local area network

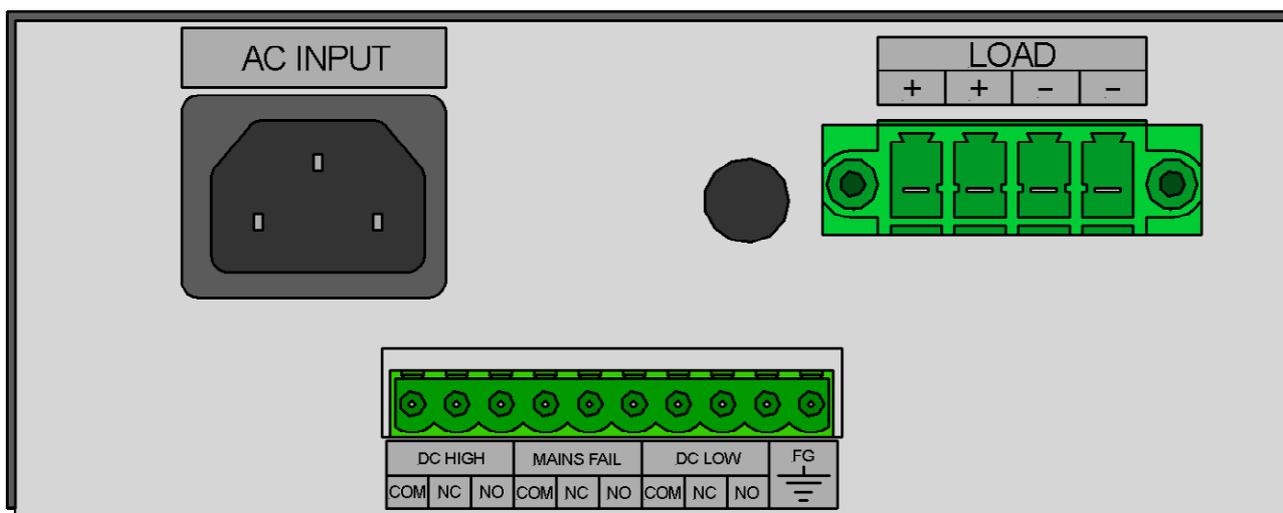
**DOD** = depth of discharge

The **SR250A/D/L/LP** is a AC/ DC power supply or can be used as a float charger for lead acid batteries.

Model codes **SR250L...** and **SR250LP...** are available with optional communication ports as follows:

Model	Type of port	Protocol
SR250L/LP....-LAN+	Ethernet	Web pages + SNMP
SR250L/LP... -LAN	Ethernet	Innovative Energies ASCII code
SR250L/LP... 232	RS232	Innovative Energies ASCII code
SR250L/LP... 485	RS485	Modbus serial or TCP/IP with external Modbus protocol converter

**TERMINAL LAYOUT (SR250L.. & SR250LP.. models shown)**



It is recommended that all four terminals (2 positive + 2 negative, as shown in the diagram above) are used when plug in/screw terminals are fitted for the 12V model)

**FG - Frame Ground**

This terminal provides a connection to the metal case for an earthing point.

## LED INDICATION CODES

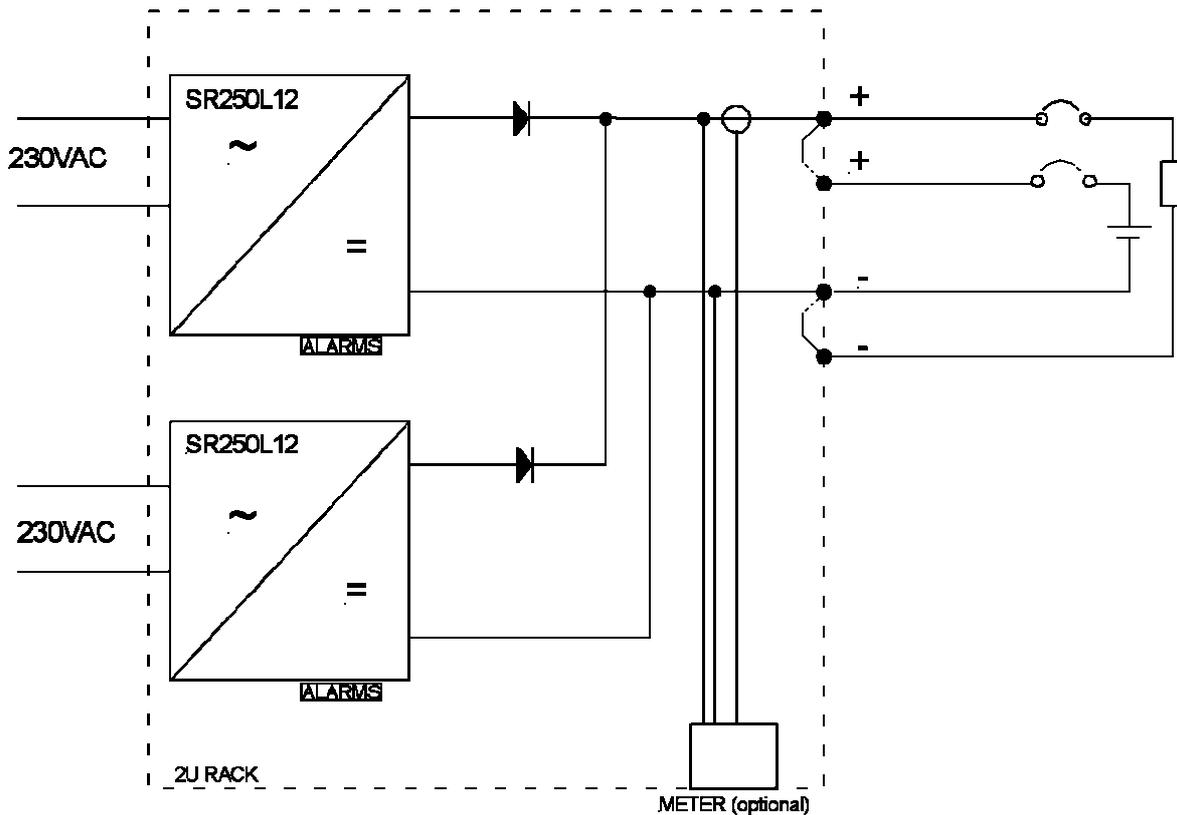
**Power OK:** On = Input power present  
Off = no input or short circuit on output

**DC OK :** Steady on = DC output OK  
Slow flash = DC output low or battery low (eg. 11, 22, 33, 44V)  
Fast flash = DC high (1.2xVnom for PSU, 2.5V/cell for charger)

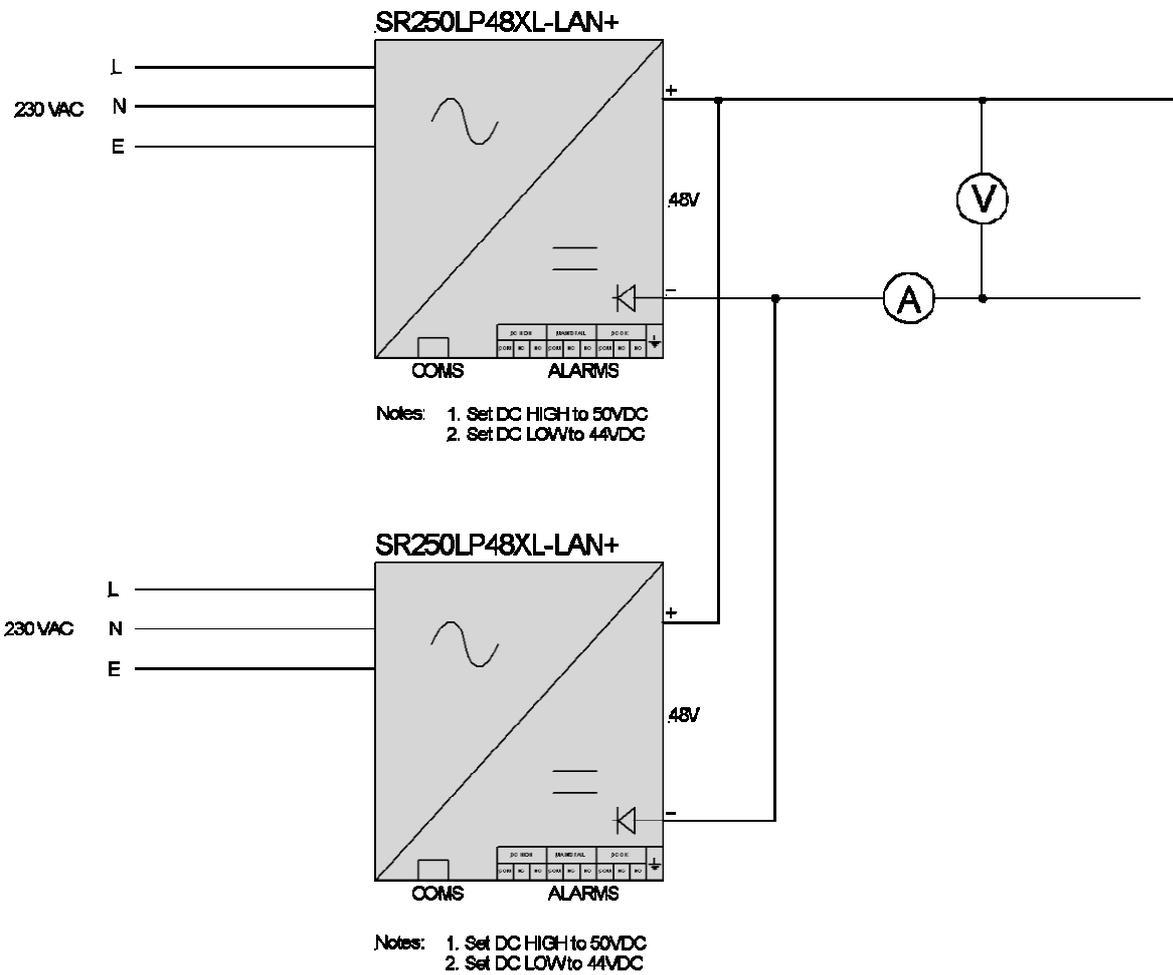
## PARALLEL CONNECTION

Two or more **SR250L** power supplies may be connected in parallel, with or without diodes for increased power, or with output diodes for N+1 redundancy.

Although batteries are not essential it is recommended that they be used so that the communications continue working in the event of an input power / internal converter failure.



**Built in output diodes for 24V and higher models  
(optional communication port shown)**





SR250L/LP shown



Z367

◆ 24 Month Warranty

- Isolated input to output
- LED indication and standby (off) button
- Optional communication port
- Option of RS232, RS485, Ethernet
- Option of ASCII, Modbus, SNMP
- Three relay alarm outputs
- Industrial quality AC/DC power supply
- Suitable for float charging of lead acid batteries
- Constant current limit
- Precise voltage control
- Temperature compensated output (optional)
- Suitable for parallel operation
- ISO9001 design management system

**SPECIFICATIONS** All specifications are typical at nominal input, full load and at 20°C unless otherwise stated.

#### ELECTRICAL

<b>Input - standard</b>	180-264 or 88-132V, 45-65Hz (internal link select)
<b>- option</b>	88 - 135VDC
<b>Fusing</b>	Input fuse
<b>Overcurrent protection</b>	Constant current limit under overload and short circuit conditions
<b>OVP</b>	Over-voltage protection on output at ~ 130% of nominal output voltage
<b>Thermal protection</b>	Yes, self resetting
<b>Isolation</b>	1KV DC input - output / earth
<b>Efficiency</b>	≥ 85%
<b>Inrush current</b>	Soft start circuit
<b>Output power</b>	250W
<b>Output voltages</b>	Refer to model table
<b>Voltage adj. range</b>	85 - 115% of Vout
<b>Line regulation</b>	<0.2% over input range
<b>Load regulation</b>	<0.4% open circuit to 100% load
<b>Noise</b>	<1%
<b>Drift</b>	0.03% / °C
<b>Hold-up time</b>	15 - 20 ms without battery

#### PHYSICAL

<b>AC input connector</b>	IEC320 socket
<b>DC Connections</b>	M6 brass studs or plug-in socket with screw terminals
<b>Enclosure</b>	Zinc plated steel /powder coated lid
<b>Dimensions</b>	150W x 61H x 242D (excl. terminals)
<b>Weight</b>	1.7 Kg
<b>Indication LEDs</b>	<b>Standard:</b> Power OK, Standby <b>With alarms:</b> DC OK, Power OK, Standby
<b>Alarm relay contacts</b>	C - NO - NC changeover rated 1A /50V DC, 32VAC
<b>Standby Mode</b>	Turns off DC output of PSU

#### ENVIRONMENTAL

<b>Operating temperature</b>	0 - 50 °C ambient at full load De-rate linearly >50 °C to no load @ 70 °C
<b>Storage temperature</b>	-10 to 85 °C ambient
<b>Humidity</b>	0 - 95% relative humidity non-condensing
<b>Cooling</b>	<b>24V &amp; above:</b> convection <b>12V:</b> fan cooled

#### STANDARDS

<b>EMI</b>	To CISPR 22 / EN55022 class A
<b>Safety</b>	To IEC950 / EN60950 / AS/NZS3260

#### ACCESSORIES SUPPLIED

Mounting feet together with screws  
AC power cord 1.5m with IEC320 socket and NZ/Aust plug  
Mating screw-terminal plug for alarm outputs  
Crimp lugs for stud terminal versions  
DC screw terminal plug-in connector for 'X' version

# 250 Watt AC/DC Stand Alone Power Supply/Float Charger

# SR250A

STANDARD MODEL TABLE					
MODELS	Power Supply		Battery Charger		Adjustable range (V)
	Output Volts (factory default)	Output Current (A) (continuous)	Output Volts* (Charging)	Output Current (A) (Charging)	
SR250A7.5	7.5	20	6.9	20 (140W)	6.8-8
SR250A12	13.8	18.1	13.8	18.1	11-14
SR250A24	24	10.4	27.6	9.0	22-28
SR250A30	30	8.3	34.5	7.2	28-36
SR250A36	36	6.9	41.4	6.0	34-43
SR250A48	48	5.2	55.2	4.5	45-57
SR250A60	60	4.1	69.0	3.6	54-69

\* Please specify on ordering if the unit is to be used for float charging (except for 12V model which is set at 13.8V by default).

OPTIONS	
Temperature compensated charging	-4mV / °C / cell , sensor lead length 1.7m Order Code: <b>+TEMPCO</b>
Alarms:	<ul style="list-style-type: none"> <li>• <b>Mains fail</b> (or PSU in standby mode)</li> <li>• <b>DC low</b> (Battery low or PSU low) - set at 92% of nominal voltage. Special version available: Battery low alarm operates when mains power is on, order code: <b>SFMCCT-OA v1.1</b></li> <li>• <b>DC high</b></li> </ul>
Alarm Relay Contacts	C - NO - NC full changeover rated 1A /50V DC, 32VAC
Internal output diode (SR250LP..)	Incl. alarms & output diode for N+1 redundancy, <b>internal</b> diode not available for 12V models.
Earth Fault Alarm	Using an external alarm card (see separate data sheet)

OPTIONS (cont.)	
Communication port	Choice of RS485, RS232, Ethernet Note: Requires external battery for communications to continue working when there is a loss of input power.
Protocols	<ul style="list-style-type: none"> <li>• <b>SNMP v1</b></li> <li>• <b>Modbus</b> (external converter) Serial: <b>+PROTOCONMB</b> TCP &amp; HTTP: <b>+PROTOCONMB-OE</b></li> </ul>
Digital V/I meter	May be fitted with SR250 in 19" rack, add: <b>SR-METER</b> or <b>SR-METERV2/SHUNT</b>
19"rack mount	Single charger add: <b>SR-RM2U</b> Dual charger (front removable) add: <b>SR-RM2U-DUALV2</b>
Wall Mount Enclosure	Charger may be fitted into enclosure with MCBs and terminals. Code: <b>SEC-SR</b>

## MODEL IDENTIFICATION CODES

**SR250L12 T F S L-485**

Optional communication port: **485** = RS485, **LAN +** = Ethernet (SNMP), **232** = RS232, **LAN** = Ethernet (ASCII)

Input voltage and front panel standby switch: L = 230V AC + switch, U = 110V AC + switch, H = 110V DC + switch; Blank = 230V AC no switch, G = 110V AC no switch, J = 110V DC no switch

Output DC Connector type: S = Stud, X = Plug in /screw terminal block

Fan cooled: F = Fan, Blank = No fan

Temperature Compensation: T = Yes, Blank = No

DC output: Nominal voltage: 12, 24, 30, 36, 48, 60

Function: A = Basic version, D = with mains fail and dc low alarms, L = with mains fail, dc low, dc high alarms, P = with output diode (24V & above) and "D" alarms, LP = with output diode (24V & above) and "L" alarms

Power: 250W

