HELIOS
POWER SOLUTIONS

Telarc. Registered
Quality
ISO 9001

User Manual

SR250A/D/L/LP

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

Z367

Model Codes:	**SR250A**	**= Basic version**
	SR250D	**= with mains fail and dc low alarms**
	SR250L	**= with mains fail, dc low, dc high alarms**
	SR250P	**= with output diode (24V & above) and "D" alarms**
	SR250LP	**= with output diode (24V & above) and "L" alarms**

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

02/10/2017

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

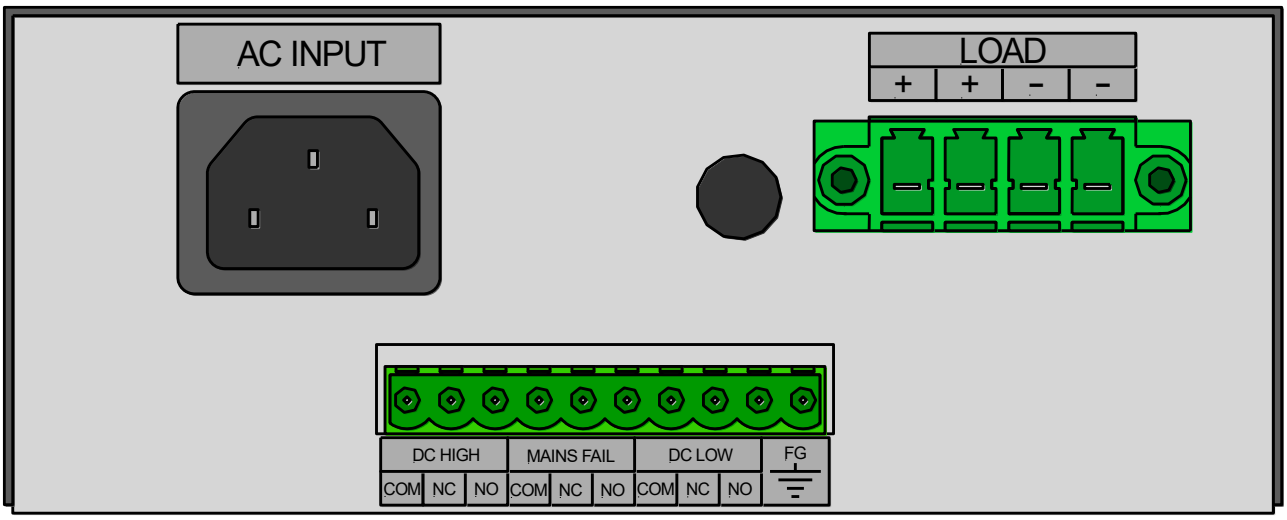
DOD = depth of discharge

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

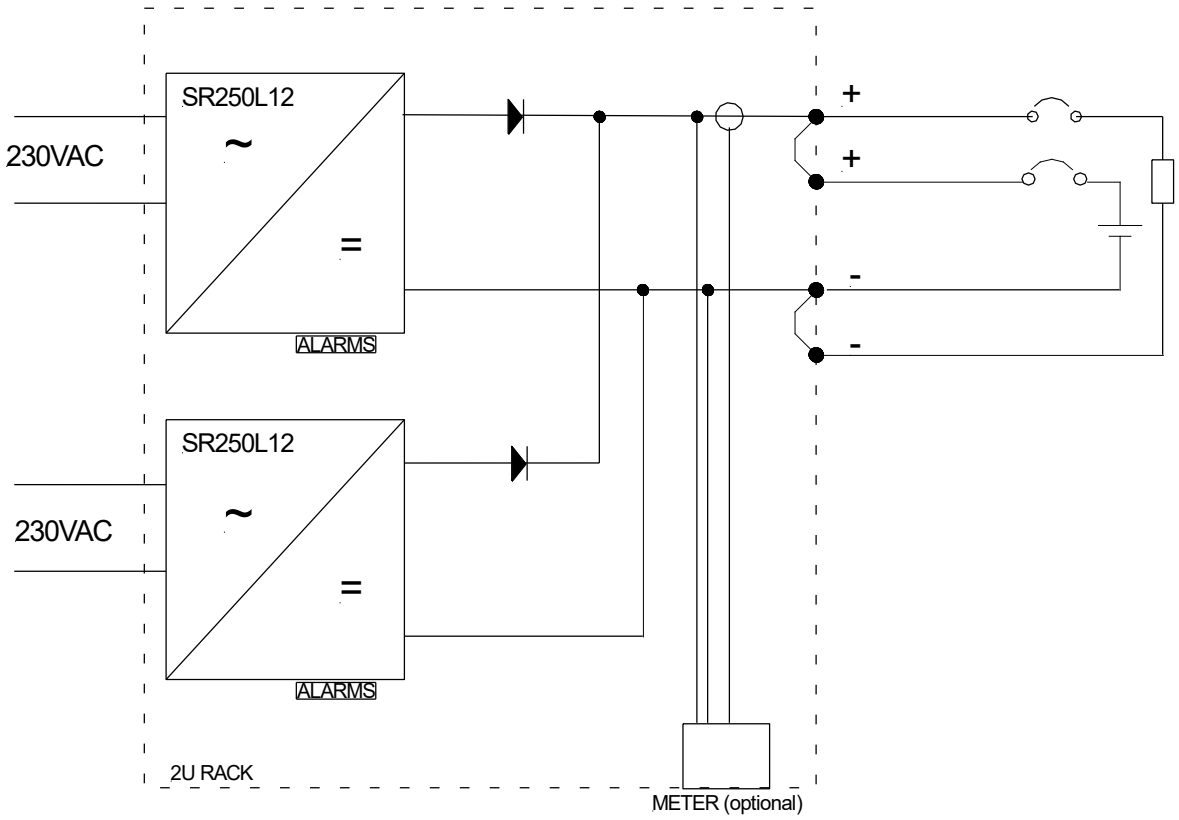
Power OK: On = Input power present
Off = no input or short circuit on output

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)

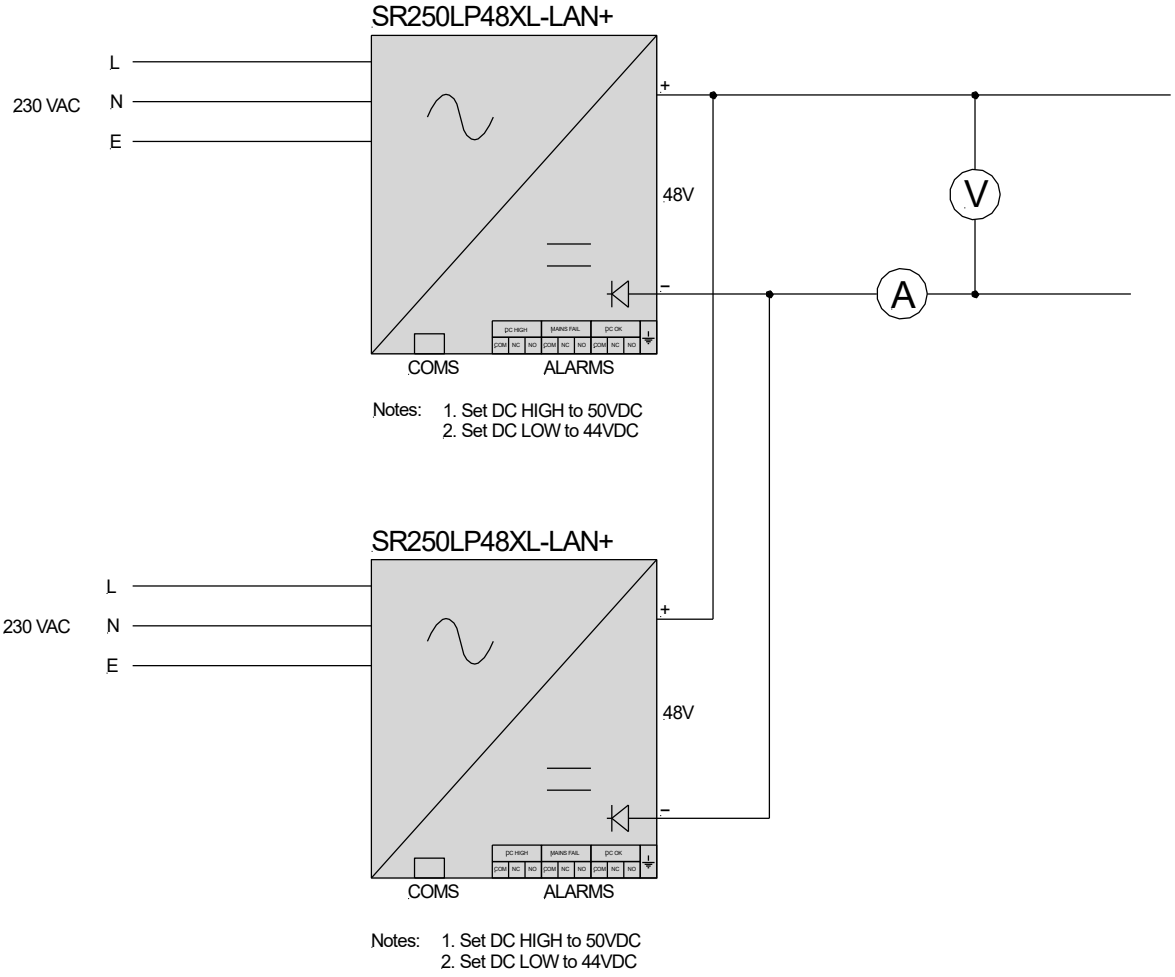
PARALLEL CONNECTION

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)



HELIOS
POWER SOLUTIONS

SR250A

AC/DC power supply with 3 alarm relays and optional communication port

SR250L/LP shown

Z367

- **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**

♦ 24 Month Warranty

SPECIFICATIONS

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

ELECTRICAL

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

PHYSICAL

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

ENVIRONMENTAL

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

STANDARDS

EMI	To CISPR 22 / EN55022 class A
Safety	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: **+TEMPCO**

Alarms:
- **Mains fail** (or PSU in standby mode)
- **DC low** (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: **SFMCT-OA v1.1**
- **DC high**

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, ***internal*** 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
- **SNMP v1**
- **Modbus** (external converter)
  Serial: **+PROTOCONMB**
  TCP & HTTP: **+PROTOCONMB-OE**

Digital V/I meter
May be fitted with SR250 in 19" rack, add: **SR-METER** or **SR-METERV2/SHUNT**

19"rack mount
Single charger add: **SR-RM2U**
Dual charger (front removable) add: **SR-RM2U-DUALV2**

Wall Mount Enclosure
Charger may be fitted into enclosure with MCBs and terminals. **Code: SEC-SR**

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**		

CUSTOMISED VERSIONS OF SR250...

Model code	BASE MODEL	SPECIAL FEATURES
CSR112	SR250L24TXL-LAN+	5m tempco lead
CSR142	SR250A48XL	Front voltage adjustment pot.
CSR151	SR250L24TXL	10m tempco lead

TERMS OF WARRANTY

Helios Power Solutions Ltd warrants this product for 24 months from date of shipment against material and work-manship defects. Liability under this warranty is limited to the replacement or repair of the defective product as long as the product has not been damaged through misapplication, negligence, or unauthorized modification or repair.