

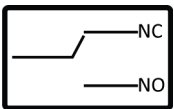


User's Manual

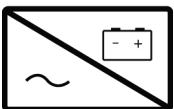
SR100HL Power Supply/ Float Charger for Lead Acid Batteries



STANDARD FEATURES



3 Relay Alarms-Form C



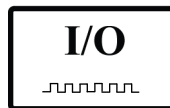
Float Charger –Lead Acid Batteries

OPTIONAL FEATURES

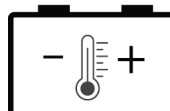


Comms:

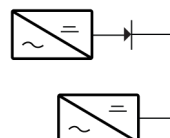
- RS232
- RS485
- Modbus
- SNMP V1 & Webpages



Customizable Digital I/O



Temperature Sensor on 1.7m lead with adhesive pad: -4mV / °C /cell ±10%



N+1 Redundancy

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1. 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, EMC 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

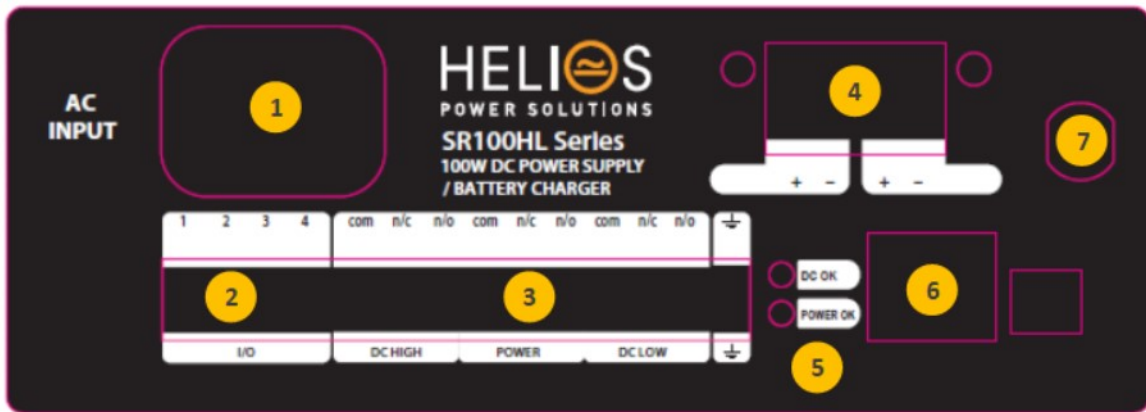
EMC = Electromagnetic compatibility

DOD = depth of discharge

2. INTRODUCTION:

The SR100HL range is designed for use as a reliable and stable AC to DC power supply, or float charger for lead acid batteries. Note that for float charging the output voltage must be set to approximately 15% above the nominal battery voltage models. This is done as the default voltage for the 12V model but must be specified at time of order for all higher voltage models.

3. FRONT PANEL LAYOUT



1. AC INPUT IEC60320 - C13 10A

2. **Digital Inputs (pins 1,2)/ Input or Output (pin 3)/ Return (pin 4)** I/O terminals are customizable and if used, the product will have a unique code.

3. **Alarms Relay Form C:** Relay contacts shown in de-energised state (ie. When there is a fault condition). Alarm relays are energised when power supply is operating normally, eg. "Power" alarm relay is energised when input voltage present.

- DC High : DC Output High
- POWER: Loss of mains input power. This alarm has 30 seconds delay before activation upon mains failure. PSU fails
- DC Low: DC Output Low or Battery voltage low if used as a charger.

4. DC Connections

5. **LED indications Code:** Mimics alarm conditions above

6. COOMS PORT

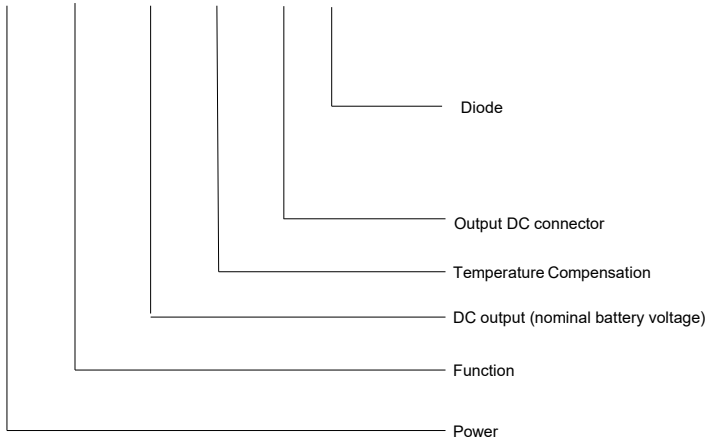
- RS232 (ASCII) <https://www.heliosps.com/sr-series-downloads/#rs232-rs485-commands-sr-series>
- RS485 (ASCII) <https://www.heliosps.com/sr-series-downloads/#rs232-rs485-commands-sr-series>
- Modbus RTU <https://www.heliosps.com/sr-series-downloads/#serial-modbus-rtu-sr-series>
- SNMP, Webpages <https://www.heliosps.com/sr-series-downloads/#snmp-sr-series>

4. FG - Frame Ground

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

5. MODEL CODING AND OPTIONS

SR100HL 12 T X P - 485+



Optional Interface Port

485 = RS485 232 = RS232 LAN+=SNMP-Webpages 485+=Modbus RTU

P= Internal output diode Blank = no diode

X = Pluggable connector

T = Yes Blank = No

12, 24, 30, 36, 48V

HL = DC PSU/charger - 2 terminal output

Hi = **No-Break™** DC UPS - 3 terminal output (separate battery output)

100W

6. N+1 REDUNDANCY

Two or more SRxxx series power supplies may be connected in parallel for increased power (with or without diodes). It is essential that the wiring from each unit to the load is kept identical for equal power sharing particularly when diodes are not used.

7. CONNECTION NOTES

- Two outputs connected in parallel internally are provided.
- If used as a battery charger ensure that the battery polarity matches the power supply output.
- Alarms can be tested by using an external variable voltage supply.

8. COMMUNICATIONS

Refer to separate additional user manual for information on the communications options.

Comms Port (if installed) , for models with communications please refer to

- RS232 (ASCII) <https://www.heliosps.com/sr-series-downloads/#rs232-rs485-commands-sr-series>
- RS485 (ASCII) <https://www.heliosps.com/sr-series-downloads/#rs232-rs485-commands-sr-series>
- Modbus RTU <https://www.heliosps.com/sr-series-downloads/#serial-modbus-rtu-sr-series>
- SNMP, Webpages <https://www.heliosps.com/sr-series-downloads/#snmp-sr-series>

9. TECHNICAL SPECIFICATIONS

Output power	100W (0-50°C)
Input Voltage	180V - 264VAC & 88V-132VAC 45-65Hz
Output Voltages	13.8V, 24V, 30V, 36V, 48 VDC Other voltages by request
Voltage Adj. Range	85% - 120% of Vnominal
Overcurrent protection	Constant current limit under overload and short circuit conditions
Isolation	Input – earth – 2.5KVdc Output – earth - 500Vdc
Efficiency	> 85%
Inrush Current	< 30A , 1.8ms
Operating temperature	-20 to 50 °C ambient at full load
Humidity	0 - 95% relative humidity non - condensing
Cooling	Natural convection
LED Indication	Green: DC OK Green: Power OK
Alarm Relays	Form C contacts changeover, rated 30VDC,2A/110VDC,0.3A/125VAC,0.5A DC High (1.2 x Vnom for PSU, 2.5V/cell for charger) POWER (mains fail, PSU fail) DC Low (0.92 x Vnom)
Line Regulation	<0.04% over input range
Load Regulation	<0.5% open circuit to 100% load
Noise	<0.3%
Transient response	200mV over/undershoot, Load step 20-100%, 400us settling time
Hold-up time	15-20 ms (nom-max. Vin) without battery

10. PHYSICAL

AC input connector	IEC60320— C13 10A input socket (similar to PCs etc)
DC Connections	Plug-in style socket & mating screw terminal block: (max. wire 2.5mm ² / way)
Alarm connections	Plug in screw terminal block
Enclosure	Zinc plated & powder coated steel
Dimensions	147W x 177D x 62H (±1mm)
Weight	0.95 Kg

11. STANDARDS

EMC	To CISPR 22 / EN55022 Class A
Safety	To IEC950 / EN60950 / AS/NZS3260



12. CUSTOMISED MODELS

Model code	BASE MODEL	SPECIAL FEATURES
CSR181	SR100HL24TX	4m tempco, Vlow - 22.0V, Vhigh - 28.5V

13. TERMS OF WARRANTY

Helios Power Solutions warrants this product for 24 months from date of shipment against material and workmanship 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.