

500W DC UPS / Battery Charger NSR500U Series



NSR500U Series - 500W DC UPS / Battery Charger

Following on from the tried and tested SR-series DC UPS, the NSR500U series is upgraded and re-engineered to provide robust and reliable no-break DC supply to your critical systems.

The NSR500U is one of the most robust DC UPS / Battery Chargers you can buy.

Key Features

- Separate connections for load and battery with no-break switching between charger and battery.
- Automatic temperature compensated charging voltage (programmable via RS-485 / Ethernet).
- Battery detection - regular battery presence and battery circuit integrity checks.
- Battery deep discharge protection with low voltage disconnect.
- Power loss & battery system alarms through relays and LED indications.
- Different output connector options - M8 studs or Phoenix connectors.
- Rugged design and construction for long life and challenging environments.
- Thermal reliability improved by using double fan cooling system.

Unique Features

Universal Input Voltage

- The NSR series accommodates a wide input voltage with AC input 90 ~ 264Vac.

Intuitive Web Management Interface

- Ethernet/SNMP-optional models provide access to an intuitive and comprehensive web interface for monitoring and configuration.

High Efficiency

- Up to 90% power efficiency.



NSR500UxxSx Rear Panel



NSR500UxxTx Rear Panel

500W DC UPS / Battery Charger

NSR500U Series

NSR500 Series Options

Base Model	Output Power (W)	Operation Mode	Battery Nom. Voltage	Output Terminals	Communications
NSR	100 250 500 750	U F	12 24 48	S T	(blank) C

Output Power (W)

100 - 100W
250 - 250W
500 - 500W
750 - 750W

Operation Mode

U - UPS/Charger
F - Charger Only

Battery Nom. Voltage

12 - 12Vdc (10-15Vdc)
24 - 24Vdc (20-30Vdc)
48 - 48Vdc (40-60Vdc)

Operation Mode

S - M8 Studs
T - Phoenix Terminals

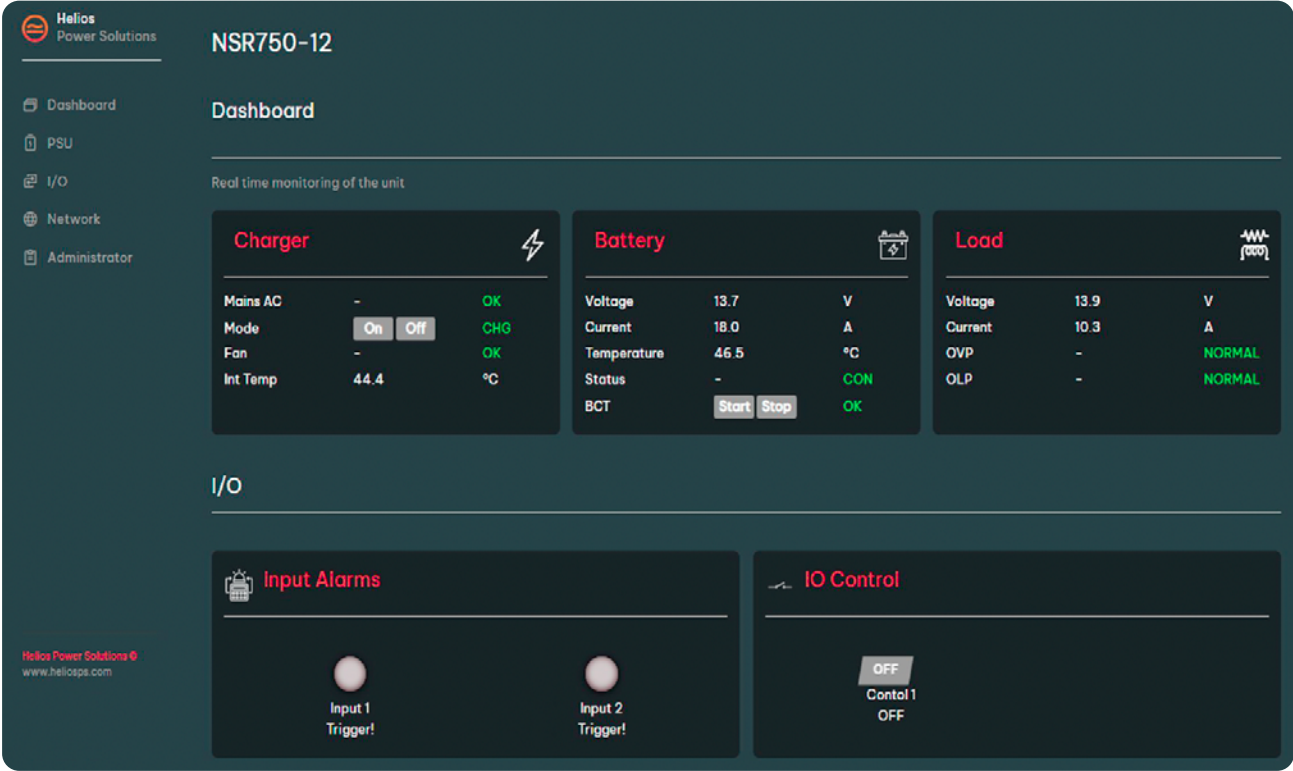
Communications

(blank) - RS-485
C - Ethernet/SNMP

Example: NSR500U12SC
500W DC UPS, 12Vdc Nominal Battery Voltage with Stud Terminals and Ethernet/SNMP

Intuitive Web Interface

On SNMP/Ethernet-optional models, the intuitive web-interface provides simple programming and monitoring of the NSR500. (Programming and monitoring via MODBUS-RTU with RS-485 is provided on all models).



Specifications

Model	NSR500U12xxxx	NSR500U24xxxx	NSR500U48xxxx
Output Voltage	13.8Vdc nominal	27.6Vdc nominal	55.2Vdc nominal
PSU Rated (A)	36A	18A	9A
Charge Limit (A) ¹	36A	18A	9A
Recommended Load (A)	30A	13A	6A
Peak Load on Power Fail	54A	27A	13.5A
Power			
Input Voltage	90-264Vac		
Frequency	47-63Hz		
Output Power (Max)	500W		
Output Voltage (Programmable)	12Vdc (10 - 15Vdc)	24Vdc (20 - 30Vdc)	48Vdc (40 - 60Vdc)
Voltage Adjustment Range (via RS-485 / Ethernet)	70 - 130% of V _{out}		
Safety			
Fusing Protection	Input fuse and varistor Battery fuse plus ECB for battery circuit		
Overcurrent Protection	Constant current limit under overload and short circuit conditions		
Isolation	I/P-O/P: 2121VDC / I/P-FG:2121VDC / O/P-FG: 707VDC		
Efficiency	Up to 90%		
Noise	<1%		
Operating Temperature	-10 ~ 50°C		
Over Voltage Protection	Programmed voltage + 7%		
Humidity	20-90% relative humidity non-condensing		
Cooling	Fan cooled (3 fans)		
LED Indication	Green: Batt OK Green: Power OK Flash code for different operating states		
Alarms Relay	Form C contacts 30VDC, 2A/110VDC, 0.3A, 125VAC, 0.5A AUX (Activated by BCT, Fan fail/stall (toggle every 5 sec)) POWER (mains fail, PSU fails) BATTERY (batt missing, batt low, BCT fail)		
Battery Charging			
Temp. Compensation	Temperature sensor on 1.7m lead with adhesive pad: -4mV/°C ±10% (customisable)		
Battery Charge Current Limit	Max rated load - load current		
Battery Circuit Protection	Electronic circuit breaker (ECB) operates under the following conditions: Low Battery Volts: Programmable (1.84V / cell default). Overload: Max load must not exceed 110% of rated current. Peak loads must be connected to B+ & B- terminals. Short circuit: <2ms, backed up by fuse.		
Options			
Communication Options	RS-485 (Modbus RTU) Default on All Models Ethernet (Modbus RTU, SNMP, Web Interface) - Optional		
Digital Inputs/Outputs	Isolated digital input (pins 1,2) / Open drain output (pin 3) / Return (pin 4)		
Battery Condition Test (BCT)	Option auto test enabled on start-up		
EMC	CISPR 32:2015, Amdt 1:2020 Class A		
Safety	AS/NZS 60335.2.29		
Dimension	225(W) x 304(D) x 70(H)mm (excluding mounting feet and terminals)		
Weight	4.0kg		
Protection	IP20		

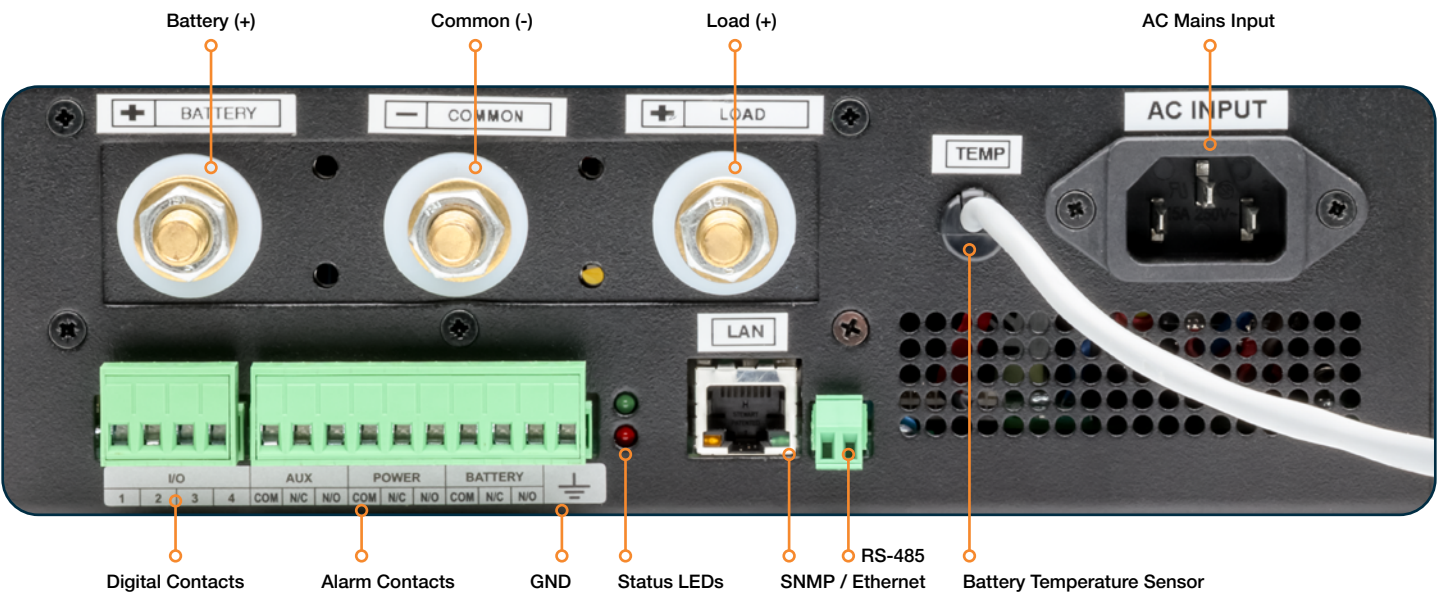
1. Default is 100% PSU rating current, can be customisable.

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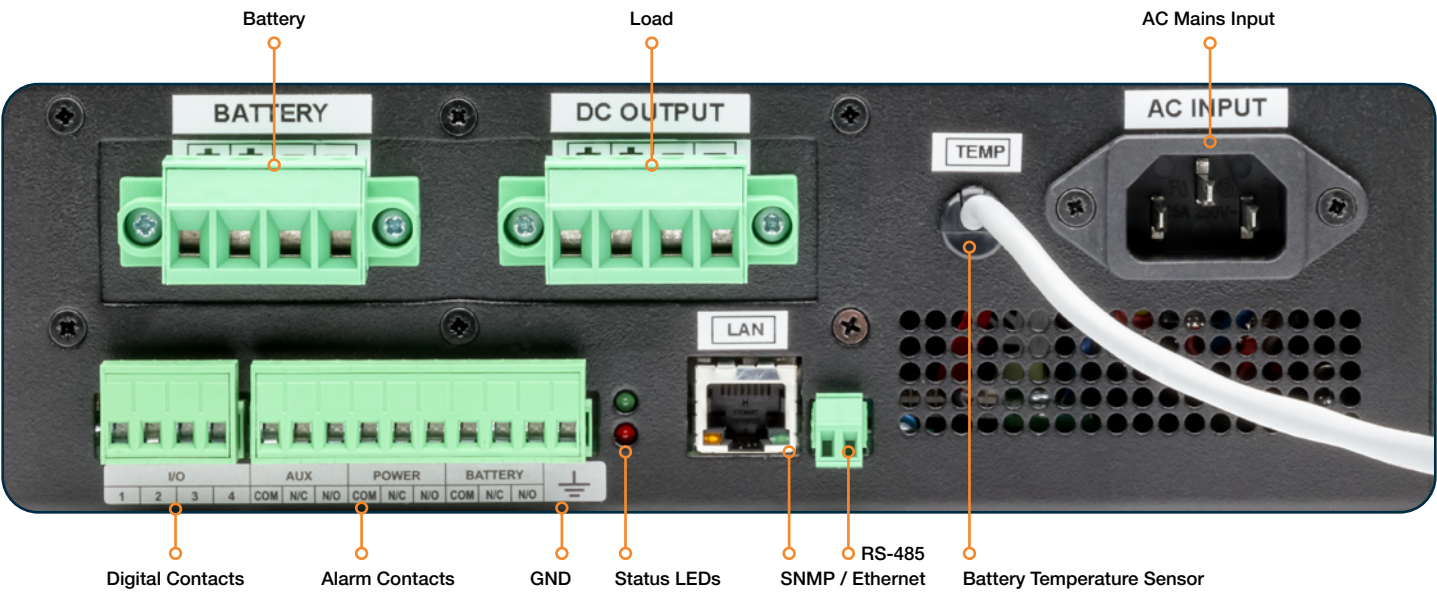
NSR500UxxS Rear Panel

with M8 Studs



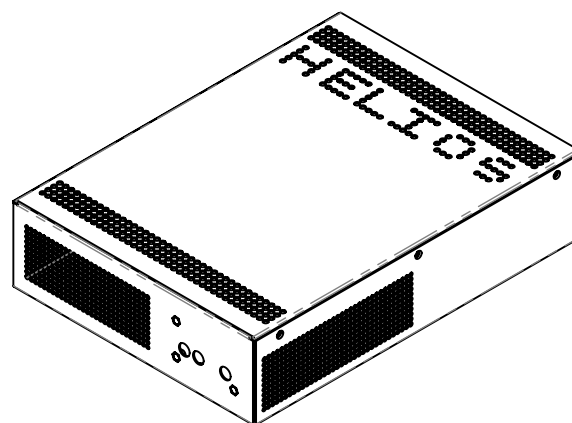
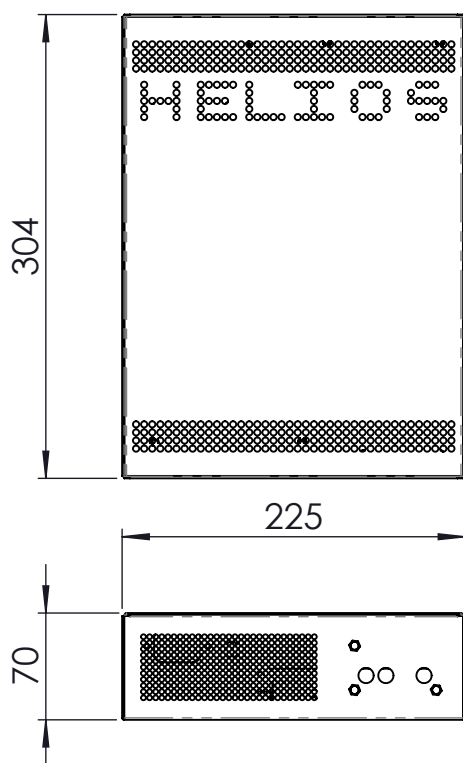
NSR500UxxT Rear Panel

with Phoenix Terminals



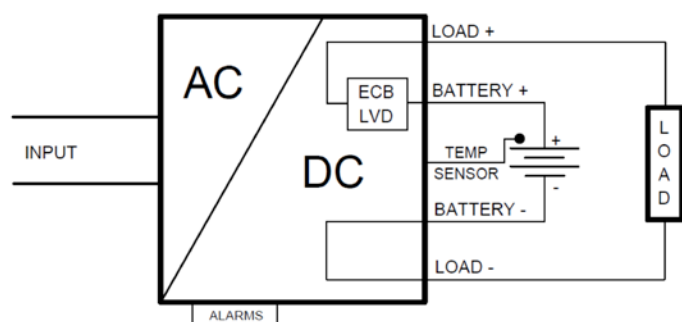
Technical Drawings

Units shown in millimetres (mm)



ISOMETRIC
(NTS)

Circuit Block Diagram



N+1 Redundancy with 2 x NSR Units

