



■ Main Features

- Low cost DC-UPS with charging function of a 24Vdc battery
- Suitable for power supplies with adjustable output
- Easy connection by unique IN / OUT connector
- Instantaneous LOAD switch to BACKUP mode
- Maximum battery capacity 40Ah
- Load current: 40A Max.
- Battery protection against reverse polarity connection and overcurrent
- Battery deep discharge protection
- To be used with lead acid and lithium batteries (types compatible with lead acid batteries)

TECHNICAL DATA

TECHNICAL DATA		NUPS960-24	
Model type			
INPUT DATA			
Input DC voltage ²		24...30Vdc	
Input DC current		40A + max. 2.5A with empty battery	
Standby power		< 4.5W	
BATTERY DATA			
Rated battery voltage		24Vdc	
Battery chemistries		<ul style="list-style-type: none">Lead AcidLithium (types compatible with lead acid batteries)	
Maximum battery charge current ³		2A	
Maximum battery discharge current		40A	
Allowed battery capacity		Up to 40Ah	
Deep discharge cut-off voltage		19Vdc ± 0.5V	
Battery protections		<ul style="list-style-type: none">OvercurrentDeep dischargeReverse polarity	
Battery fuse		2x 25A / 32V - ATO blade type	
USER INTERFACE			
“DC OK” LED		<ul style="list-style-type: none">Green LED ON - DC voltage is > 22.0Vdc ± 0.5V	
“BATTERY FAIL” LED		<ul style="list-style-type: none">Red LED ON - Battery voltage < 19Vdc ± 0.5V	
“BATTERY DISCHARGE” LED ⁴		<ul style="list-style-type: none">Yellow LED ON - Battery in discharge condition	
3 dry contact relays (NO, 24Vdc / 1A)		<ul style="list-style-type: none">DC OK - Close if DC voltage is > 22.0Vdc ± 0.5VBATTERY FAIL - Close if Battery voltage < 19Vdc ± 0.5VBATTERY DISCHARGE - Close if Battery in discharge condition	
GENERAL DATA			
Efficiency at full load		> 98%	
Power loss (during backup)		< 13W	
Operating temperature ¹		- 40...+ 70°C	
Derating		- 0.5A/°C over 60°C	
Storage temperature		- 40...+ 80°C	
Humidity		5...95% r.H. non condensing	
Life time expectation		180'000h (20.5 years) at 25°C ambient full load	
MTBF		<ul style="list-style-type: none">MIL-HDBK-217F > 180'000h at 25°C ambient full load	
Overvoltage category		<ul style="list-style-type: none">EN50178	I
Pollution degree		<ul style="list-style-type: none">IEC60664-1	2
Isolation against enclosure		0.75kVdc	
Safety Standards		<ul style="list-style-type: none">UL508IEC/EN61010-1IEC/EN61010-2-201IEC/EN60950	(reference)
EMC Emission		<ul style="list-style-type: none">EN55011 (CISPR11)EN55022 (CISPR22)	Class B Class B
EMC Immunity		<ul style="list-style-type: none">EN61000-4-2EN61000-4-3EN61000-4-4EN61000-4-5	Level 3 Level 3 Level 4 Level 1
Protection degree		<ul style="list-style-type: none">EN60529	IP20
Vibration sinusoidal		<ul style="list-style-type: none">IEC 60068-2-6	(5-17.8Hz: ±1.6mm; 17.8-500Hz: 2g 2hours / axis (X,Y,Z)
Shock		<ul style="list-style-type: none">IEC 60068-2-27	(30g 6ms, 20g 11ms; 3 bumps / direction, 18 bumps total)
IN/Battery/OUT connection terminals		Up to 16mm², screw type pluggable (20...6AWG)	
Status signals connection terminals		Up to 0.5mm², fast pluggable type (20AWG)	
Case material		Aluminum	
Weight		0.45kg	
Size (W x H x D)		40.0 x 115.0 x 110.0mm	

1) Start-up type tested: - 40°C, possible at nominal voltage with load deration.

2) NUPS960-24 can be started up only by feeding DC +/- with a 24Vdc source (e.g. the power supply).

3) Battery charger is operational when DC voltage > Battery voltage.

4) Battery discharge information will only function if the battery is connected.

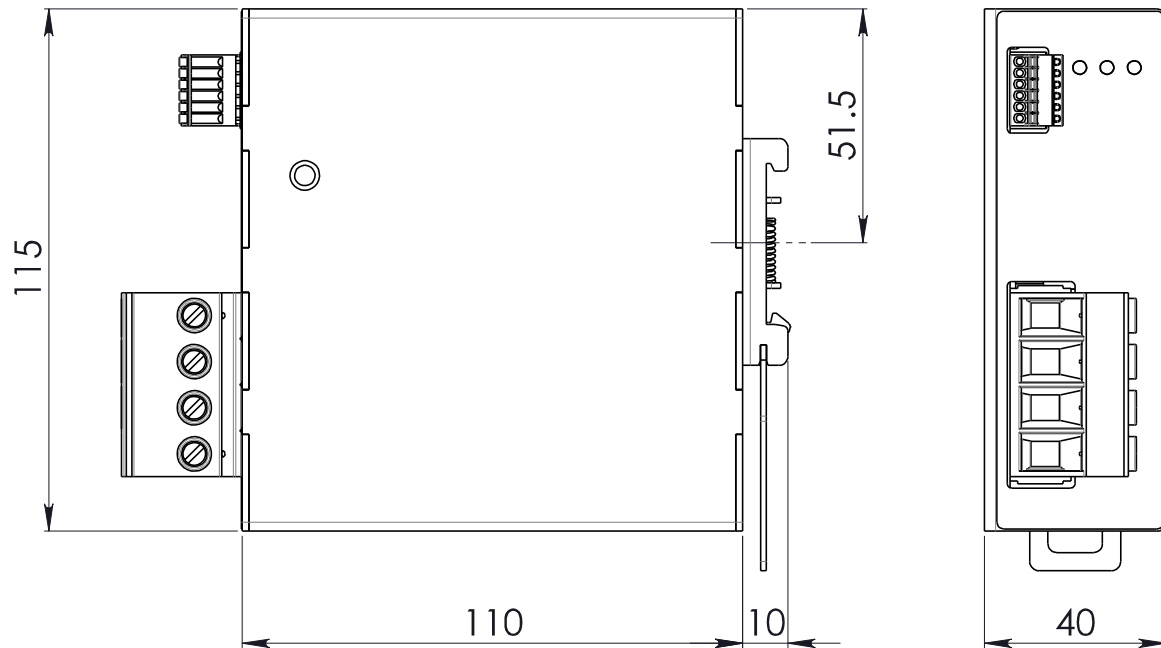
Notes:

- Technical parameters are typical, measured in laboratory environment at 25°C at nominal values, after minimum 5 minutes of operation.

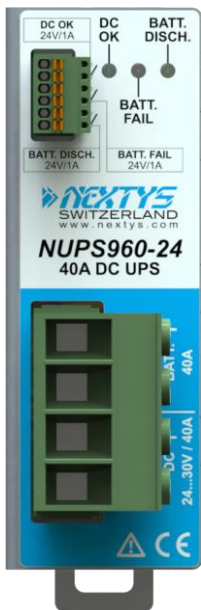
- Power rating, losses, efficiency, ripple, thermal behaviour and start-up may change outside of the nominal rated input range. Contact factory for details.

- Data may change without prior notice in order to improve the product.

DIMENSIONS



CONNECTION



IN/Battery/OUT Connections:

- BATTERY + = Positive DC (Battery)
- BATTERY - = Negative DC (Battery)
- DC + = Positive DC (Power Supply) / Positive DC (Load)
- DC - = Negative DC (Power Supply) / Negative DC (Load)

Signalling Connections:

DC OK: dry contact

- NO
- COM

BATTERY FAIL: dry contact

- NO
- COM

BATTERY DISCHARGE: dry contact

- NO
- COM