

### ■ Main Features

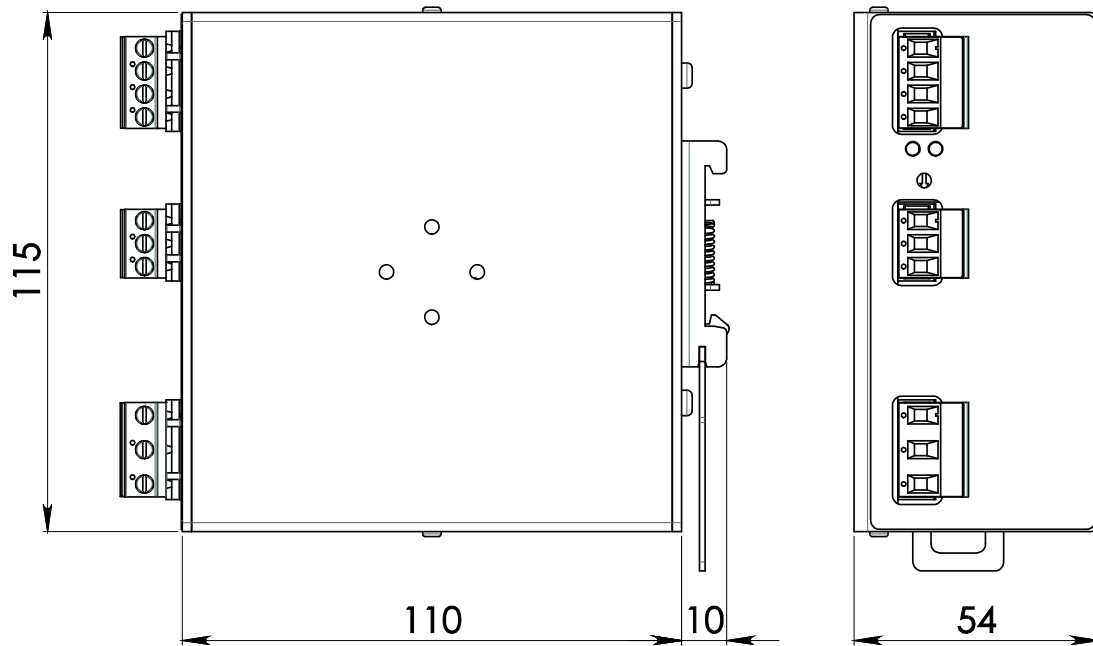
- ⌋ “All-in-one” economic solution for general purpose
- ⌋ Input: 120...240Vac
- ⌋ Output: 12 or 24Vdc – model dependent
- ⌋ To be used with lead acid and lithium batteries (compatible with lead acid batteries)
- ⌋ Instantaneous LOAD switch BACKUP mode

TECHNICAL DATA

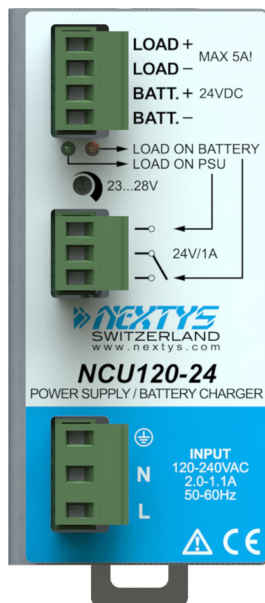
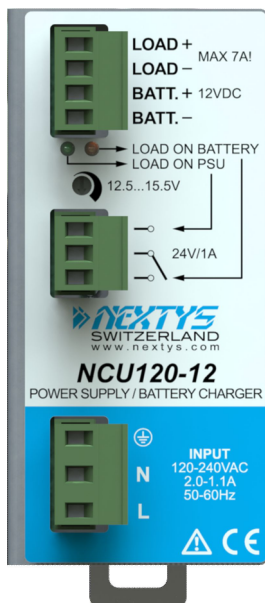
Model type	NCU120-12	NCU120-24
<b>OUTPUT DATA</b>		
Rated voltage	12Vdc	24Vdc
Adj. output voltage range	12.5...15.5Vdc (to be set at 14Vdc for correct battery charging)	23...28Vdc (to be set at 27Vdc for correct battery charging)
Continuous current	7.0A	5.0A
Overload limit	11.5A	6.5A
Short circuit peak current	> 20A for 40ms	> 16A for 80ms
Load regulation	≤ 1%	
Ripple & Noise <sup>1</sup>	≤ 100mVpp	
Hold up time Vin = 120Vac Vin = 240Vac	≥ 10ms ≥ 80ms	≥ 10ms ≥ 55ms
Protections	<ul style="list-style-type: none"> <li>Overload/short circuit: Hiccup mode</li> <li>Thermal protection</li> <li>Output overvoltage</li> </ul>	
Output overvoltage protection (active)	≥ 18Vdc	≥ 33Vdc
Battery protections	<ul style="list-style-type: none"> <li>Against short-circuit with resettable fuse (9A)</li> <li>Against reverse polarity connection</li> <li>Against deep discharge</li> </ul>	
Deep discharge cut-off voltage	10.5Vdc ± 0.5V	20.5Vdc ± 0.5V
Status Signals	<ul style="list-style-type: none"> <li>LOAD ON PSU - green LED</li> <li>LOAD ON BATTERY - red LED</li> <li>Dry contact (SPDT, 24Vdc / 1A)</li> </ul>	
Parallel connection	Not recommended	
<b>BATTERY INFO</b>		
Rated voltage	12...14.4Vdc	24...28.8Vdc
Charging current	0.8A max.	
<b>INPUT DATA</b>		
Input AC rated voltage Frequency	Nominal: 120...240Vac Range: 100...264Vac 47...63Hz	
Input DC rated voltage	110...345Vdc	
Input AC rated current Vin = 120Vac Vin = 240Vac	2.0A 1.1A	
Input DC rated current Vin = 110Vdc Vin = 345Vdc	1.4A 0.5A	
Inrush peak current <sup>2</sup> / I <sup>2</sup> t	≤ 24A / 0.50A <sup>2</sup> s	
Touch (leakage) current	≤ 0.6mA	
Internal protection fuse	Fuse 3.15AT (not user replaceable)	
Recommended external protection <sup>3</sup>	Fuse 4AT or MCB 4A C curve / Cartridge fuse Class CC 4AT 250Vac It is strongly recommended to provide external surge arresters (SPD) according to local regulations.	
<b>GENERAL DATA</b>		
Efficiency	> 83.5%	> 86%
Dissipated power	< 21W	< 20W
Operating temperature <sup>4</sup>	- 40°C...+ 70°C UL certified up to 50°C	
Derating	- 0.75W/°C over 50°C	- 1.2W/°C over 50°C
Storage temperature	- 40°C...+ 80°C	
Humidity	5...95% r.H. non condensing	
Life time expectation	167'953h (19.1 years) at 25°C ambient full load	
MTBF	<ul style="list-style-type: none"> <li>MIL-HDBK-217F &gt; 600'000h at 25°C ambient full load</li> </ul>	
Overvoltage category	<ul style="list-style-type: none"> <li>EN50178 III</li> </ul>	
Pollution degree	<ul style="list-style-type: none"> <li>IEC60664-1 2</li> </ul>	
Protection Class	<ul style="list-style-type: none"> <li>Class I</li> </ul>	
Input / output isolation	4.2kVdc	
Input / ground isolation	2.2kVdc	
Output / ground isolation	0.75kVdc	
Safety Standards	<ul style="list-style-type: none"> <li>UL508 (certified E356563)</li> <li>EN60950 (reference)</li> <li>EN50178 (reference)</li> </ul>	
EMC Emission	<ul style="list-style-type: none"> <li>EN55011 (CISPR11) Class A</li> <li>EN55022 (CISPR22) Class A</li> </ul>	
EMC Immunity	<ul style="list-style-type: none"> <li>EN61000-4-2 Level 3</li> <li>EN61000-4-3 Level 2</li> <li>EN61000-4-4 Level 2</li> <li>EN61000-4-5 Level 3</li> <li>EN61000-4-11 Level 2</li> </ul>	
Protection degree	<ul style="list-style-type: none"> <li>EN60529 IP20</li> </ul>	
Vibration sinusoidal	<ul style="list-style-type: none"> <li>IEC 60068-2-6 (5-17.8Hz: ±1.6mm; 17.8-500Hz: 2g 2hours / axis (X,Y,Z)</li> </ul>	
Shock	<ul style="list-style-type: none"> <li>IEC 60068-2-27 (30g 6ms, 20g 11ms; 3 bumps / direction, 18 bumps total)</li> </ul>	
Connection terminals	2.5mm <sup>2</sup> , screw type pluggable (24...12AWG)	

Case material	Aluminum
Weight	0.50kg
Size (W x H x D)	54.0 x 115.0 x 110.0mm
<p>1) Ripple and Noise are measured with 20MHz bandwidth, probe terminated with a 0.1µF MKP parallel capacitor.                  2) Peak current measured after 0.2ms from main connection; 240Vac/50Hz; Ambient temperature at 25°C; Cold Start.                  3) In order to be UL compliant use Listed Cartridge nonrenewable (JDDZ) fuse Class CC 4AT 250Vac.                  4) Start-up type tested: - 40°C, possible at nominal voltage with load deration.</p> <p><b>Notes:</b>                  - Technical parameters are typical, measured in laboratory environment at 25°C and 240Vac / 50Hz, 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.</p>	

**DIMENSIONS**



**CONNECTION**



**Input Connection:**

Single phase:

- L = Line
- N = Neutral
- I = Earth ground

DC:

- L = + Positive DC
- N = - Negative DC
- I = Earth ground

**Output Connection:**

- LOAD + = Positive DC
- LOAD - = Negative DC
- BATT + = Positive DC Battery
- BATT - = Negative DC Battery

Signalling:

- SPDT dry contact
- NO
- NC
- COM