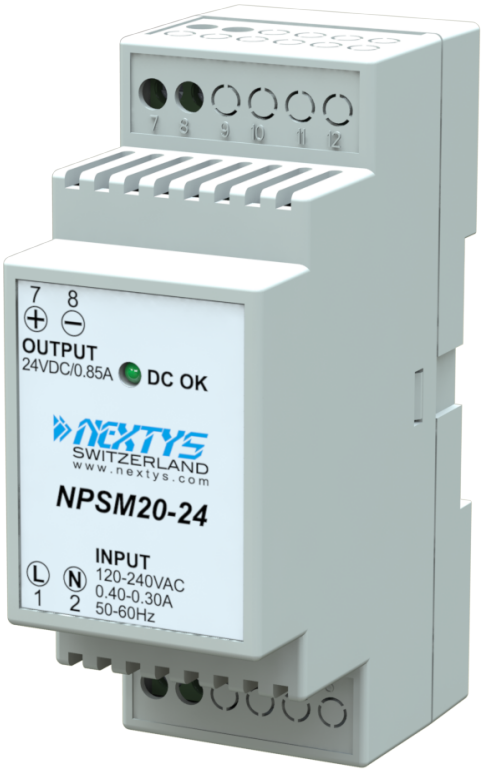


Main Features

- High efficiency and compact size
- Plastic enclosure, circuit breaker shape
- Simplified wiring (no PE connection)
- Overload up to 170%
- High operating temperature with no derating

TECHNICAL DATA

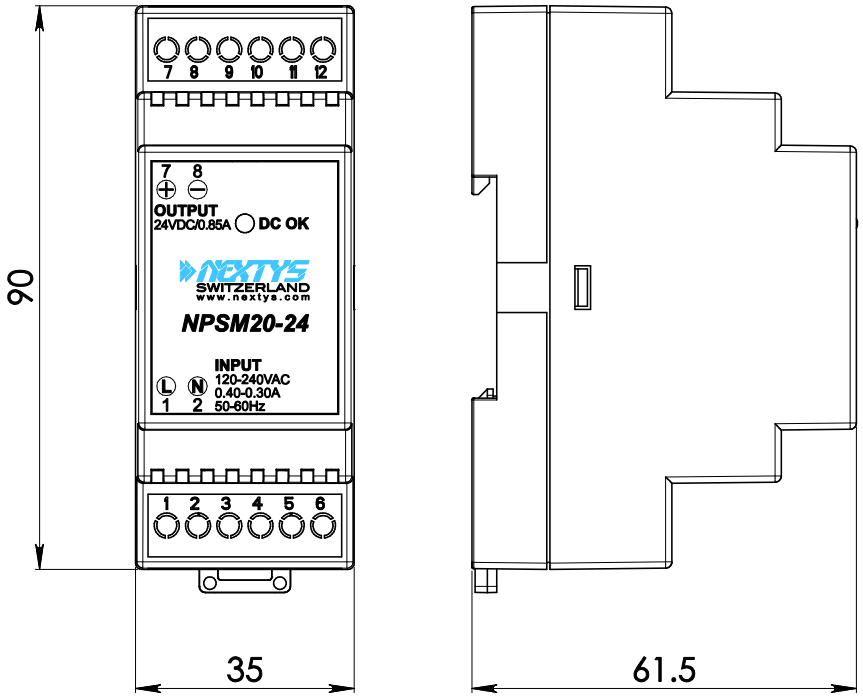
Model type	NPSM20-5	NPSM20-12	NPSM20-24
OUTPUT DATA			
Rated voltage	5Vdc	12Vdc	24Vdc
Adj. output voltage range	5Vdc Fixed	12Vdc Fixed	24Vdc Fixed
Continuous current	4.0A	1.65A	0.85A
Overload limit Vin = 120Vac Vin = 240Vac	 5.0A 5.5A	 2.60A 3.25A	 1.30A 1.70A
Short circuit peak current	10A	8.0A	4.0A
Load regulation	≤ 1%		
Ripple & Noise[1]	≤ 50mVpp	≤ 100mVpp	
Hold up time	≥ 40ms	≥ 5ms	
Protections	▪ Overload/short circuit: Hiccup mode ▪ Thermal protection ▪ Output overvoltage		
Status Signals	▪ **DC OK** - green LED		
Parallel connection	Possible for redundancy (with external ORing module)		
INPUT DATA			
Input AC rated voltage Frequency	Nominal: 120…240Vac (UL certified) Range: 90…264Vac 47...63Hz		
Input DC rated voltage	110...345Vdc		
Input AC rated current Vin = 120Vac Vin = 240Vac	 0.40A 0.30A		
Input DC rated current Vin = 110Vdc Vin = 345Vdc	 0.30A < 0.10A		
Inrush peak current[2] / I^2t	≤ 27A / 0.32A^2s		
Touch (leakage) current	≤ 0.2mA		
Internal protection fuse	Fuse 2AT (not user replaceable)	Fuse 1AT (not user replaceable)	
Recommended external protection[3]	MCB 6A C curve / Cartridge fuse Class CC 4AT 250Vac It is strongly recommended to provide external surge arresters (SPD) according to local regulations.		
GENERAL DATA			
Efficiency	> 81%	> 80%	
Dissipated power	< 5W	< 6W	
Operating temperature[4]	- 40°C...+ 70°C		
	UL certified up to 70°C	UL certified up to 50°C	
Derating	No derating	- 0.5W/°C over 50°C	
Storage temperature	- 40°C...+ 80°C		
Humidity	5…95% r.H. non condensing		
Life time expectation	58'629h (6.6 years) at 25°C ambient full load		
MTBF	▪ MIL-HDBK-217F	> 500'000h at 25°C ambient full load	
Overvoltage category Pollution degree	▪ EN50178 III ▪ IEC60664-1 2		
Protection Class	▪ CLASS II		
Input / output isolation	4.2kVdc		
Safety Standards	▪ UL508 (certified E356563) ▪ IEC/EN61010-1 ▪ IEC/EN61010-2-201 ▪ IEC/EN60950		
EMC Emission	▪ EN55011 (CISPR11) Class A (for NPSM20-12/-24) ▪ EN55011 (CISPR11) Class B (for NPSM20-5) ▪ EN55022 (CISPR22) Class A (for NPSM20-12/-24) ▪ EN55022 (CISPR22) Class B (for NPSM20-5)		
EMC Immunity	▪ EN61000-4-2 Level 3 ▪ EN61000-4-3 Level 3 ▪ EN61000-4-4 Level 3 (for NPSM20-12/-24) ▪ EN61000-4-4 Level 4 (for NPSM20-5) ▪ EN61000-4-5 Level 3 (for NPSM20-12/-24) ▪ EN61000-4-5 Level 4 (for NPSM20-5) ▪ EN61000-4-11 Level 2		
Protection degree	▪ EN60529 IP20		
Vibration sinuosoidal	▪ IEC 60068-2-6 (5-17.8Hz: ±1.6mm; 17.8-500Hz: 2g 2hours / axis (X,Y,Z)		
Shock	▪ IEC 60068-2-27 (30g 6ms, 20g 11ms; 3 bumps / direction, 18 bumps total)		
Connection terminals	2.5mm^2, screw type header (24...12AWG)		

Case material	Plastic, Flame retardant UL94 V-0
Weight	0.1kg
Size (W x H x D)	35.0 x 90.0 x 61.5mm

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 only for NPSM20-5 Listed Cartridge nonrenewable (JDDZ) fuse Class CC 4AT 250Vac.
4) Start-up type tested: - 40°C, possible at nominal voltage with load deration.

Notes:
- 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.

DIMENSIONS



CONNECTION

Input Connection:

Single phase:
- L = Line (1)
- N = Neutral (2)

DC:
- L = + Positive DC (1)
- N = - Negative DC (2)

Output Connection:

- + = Positive DC (7)
- - = Negative DC (8)