



■ Main Features

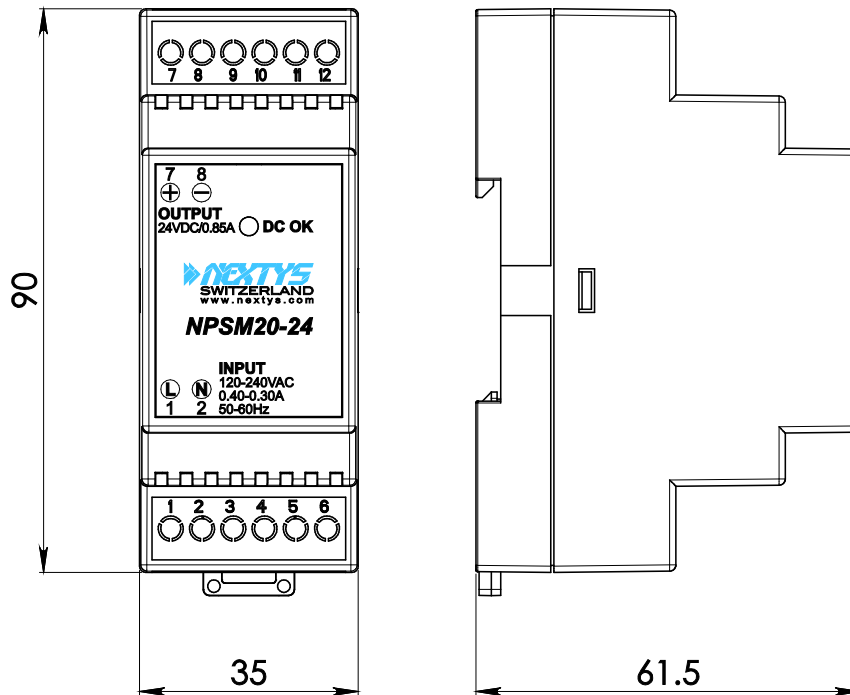
-)] High efficiency and compact size
-)] Plastic enclosure, circuit breaker shape
-)] Simplified wiring (no PE connection)
-)] Overload up to 170%
-)] High operating temperature with no derating

TECHNICAL DATA

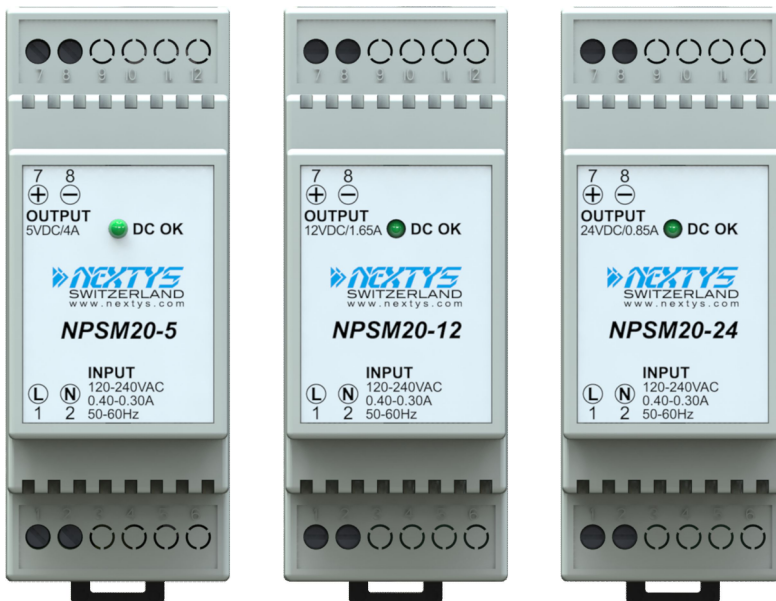
Model type	NPSM20-5	NPSM20-12	NPSM20-24
OUTPUT DATA			
Rated voltage	5Vdc	12Vdc	24Vdc
Adj. output voltage range	5Vdc Fixed	12Vdc Fixed	24Vdc Fixed
Continuous current	4.0A	1.65A	0.85A
Overload limit			
Vin = 120Vac	5.0A	2.60A	1.30A
Vin = 240Vac	5.5A	3.25A	1.70A
Short circuit peak current	10A	8.0A	4.0A
Load regulation		≤ 1%	
Ripple & Noise ¹	≤ 50mVpp		≤ 100mVpp
Hold up time	≥ 40ms		≥ 5ms
Protections	<ul style="list-style-type: none"> ▪ Overload/short circuit: Hiccup mode ▪ Thermal protection ▪ Output overvoltage 		
Status Signals	<ul style="list-style-type: none"> ▪ DC OK - green LED 		
Parallel connection	Possible for redundancy (with external ORing module)		
INPUT DATA			
Input AC rated voltage	Nominal: 120...240Vac (UL certified)		
Frequency	Range: 90...264Vac 47...63Hz		
Input DC rated voltage	110...345Vdc		
Input AC rated current			
Vin = 120Vac	0.40A		
Vin = 240Vac	0.30A		
Input DC rated current			
Vin = 110Vdc	0.30A		
Vin = 345Vdc	< 0.10A		
Inrush peak current ² / I ² t	≤ 27A / 0.32A ² s		
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	<ul style="list-style-type: none"> ▪ MIL-HDBK-217F ▪ > 500'000h at 25°C ambient full load 		
Overvoltage category	<ul style="list-style-type: none"> ▪ EN50178 III 		
Pollution degree	<ul style="list-style-type: none"> ▪ IEC60664-1 2 		
Protection Class	<ul style="list-style-type: none"> ▪ CLASS II 		
Input / output isolation	4.2kVdc		
Safety Standards	<ul style="list-style-type: none"> ▪ UL508 (certified E356563) ▪ EN60950 (reference) ▪ EN50178 (reference) 		
EMC Emission	<ul style="list-style-type: none"> ▪ 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	<ul style="list-style-type: none"> ▪ 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	<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) 		
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
<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 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.</p> <p>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.</p>	

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)