Main Features

- High efficiency and extremely compact size
- Only 56mm width aluminum enclosure
- Active PFC
- Overload 150%
- Constant current or hiccup mode limitation, user settable
- Wide range of output voltage
- Easy parallelable for power increase
- Up to 60°C operating temperature with no derating

TECHNICAL DATA

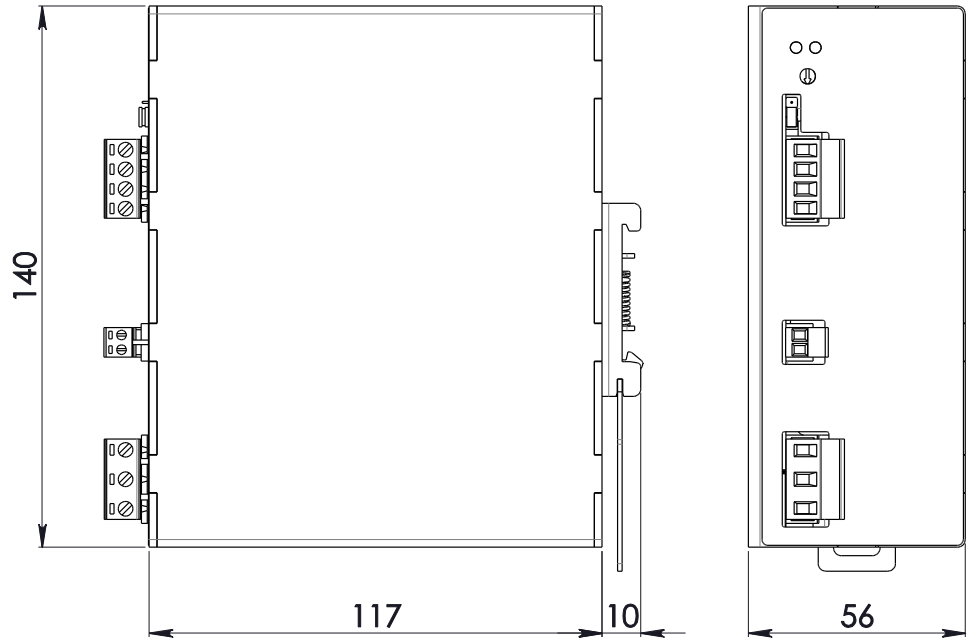
Model type	NPSM481-24 (P)	NPSM481-48 (P)	NPSM481-72 (P)
OUTPUT DATA			
Rated voltage	24Vdc	48Vdc	72Vdc
Adj. output voltage range	22…29Vdc	45…55Vdc	70…85Vdc
Continuous current[1]	20A	10A	6.7A
Overload limit in constant current mode	21A	12A	7.0A
Overload limit in hiccup mode (max. 5s)	30A	17A	12A
Load regulation	≤ 1.5%	≤ 0.5%	
Ripple & Noise[2]	≤ 150mVpp	≤ 200mVpp	≤ 350mVpp
Hold up time	≥ 25ms		
Protections	▪ Overload, short circuit: Constant current or Hiccup mode (user settable) ▪ Thermal protection ▪ Input undervoltage lockout ▪ Output overvoltage		
Output overvoltage protection	≥ 33Vdc	≥ 68Vdc	≥ 100Vdc
Status Signals	▪ **DC OK** - green LED ▪ **OVERLOAD** - red LED ▪ **DC OK** - dry contact (NO, 24Vdc / 1A) -> Not present in models NPSM481-72 and NPSM481-72P		
Parallel connection[3]	▪ Possible for redundancy (with external ORing module) ▪ **P** (models) - include internal ORing circuit		
INPUT DATA			
Input AC rated voltage Frequency	Nominal: 100Vac or 120…240Vac (UL certified) Range: 90…264Vac 47…63Hz		
Input DC rated voltage	110...345Vdc		
Input AC rated current Vin = 100Vac Vin = 120Vac Vin = 240Vac	 5.6A 4.8A 2.4A		
Input DC rated current Vin = 110Vdc Vin = 345Vdc	 4.9A 1.7A		
Power factor correction	Active / > 0.9		
Inrush peak current[4] / I^2t	≤ 23A / 0.56A^2s		
Touch (leakage) current	≤ 0.9mA		
Internal protection fuse	Fuse 8AT (not user replaceable)		
Recommended external protection	Fuse 10AT or MCB 10A C curve It is strongly recommended to provide external surge arresters (SPD) according to local regulations.		
GENERAL DATA			
Efficiency	> 93%	> 94%	
Dissipated power	< 36.5W	< 31W	
Operating temperature[5]	- 40°C…+ 70°C UL certified up to 50°C at 100Vac and 120Vac or up to 60°C at 240Vac		
Derating	- 10W/°C over 50°C at 100Vac - 7.6W/°C over 50°C at 120Vac - 7.2W/°C over 60°C at 240Vac		
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	▪ MIL-HDBK-217F	> 600'000h at 25°C ambient full load	
Overvoltage category Pollution degree	▪ EN50178 III ▪ IEC60664-1 2		
Protection Class	▪ CLASS I		
Input / output isolation	4.2kVdc		
Input / ground isolation	2.2kVdc		
Output / ground isolation	0.75kVdc		
Safety Standards	▪ UL508 (certified E356563) ▪ UL61010-1 (certified E356563) ▪ UL61010-2-201 (certified E356563) ▪ IEC/EN61010-1 ▪ IEC/EN61010-2-201		
EMC Emission	▪ EN55011 (CISPR11) Class B ▪ EN61000-3-2 Class A ▪ EN61000-3-3		
EMC Immunity	▪ EN61000-4-2 Level 3 (Air), Level 2 (Contact) ▪ EN61000-4-3 Level 3 (80-1000MHz), Level 2 (1.4-6GHz) ▪ EN61000-4-4 Level 3 ▪ EN61000-4-5 Level 3 ▪ EN61000-4-6 Level 3 ▪ EN61000-4-8 Level 4 ▪ 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 pluggable (24...12AWG)		

Case material	Aluminum
Weight	1.1kg
Size (W x H x D)	56.0 x 140.0 x 117.0mm

1) Derate to 87.5% load if connected to single phase AC lines with Vin 100Vac.
2) Ripple and Noise are measured with 20MHz bandwidth, probe terminated with a 0.1µF MKP parallel capacitor.
3) Pay attention, set the current limitation mode jumper on C.C. mode when connecting more units in parallel.
4) Peak current measured after 0.2ms from main connection; 240Vac/50Hz; Ambient temperature at 25°C; Cold Start.
5) 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
- N = Neutral
- ⏚ = Earth ground

DC:
- L = + Positive DC
- N = - Negative DC
- ⏚ = Earth ground

Output Connection:

- + = Positive DC
- - = Negative DC

Signalling:
DC OK: dry contact
- NO
- COM