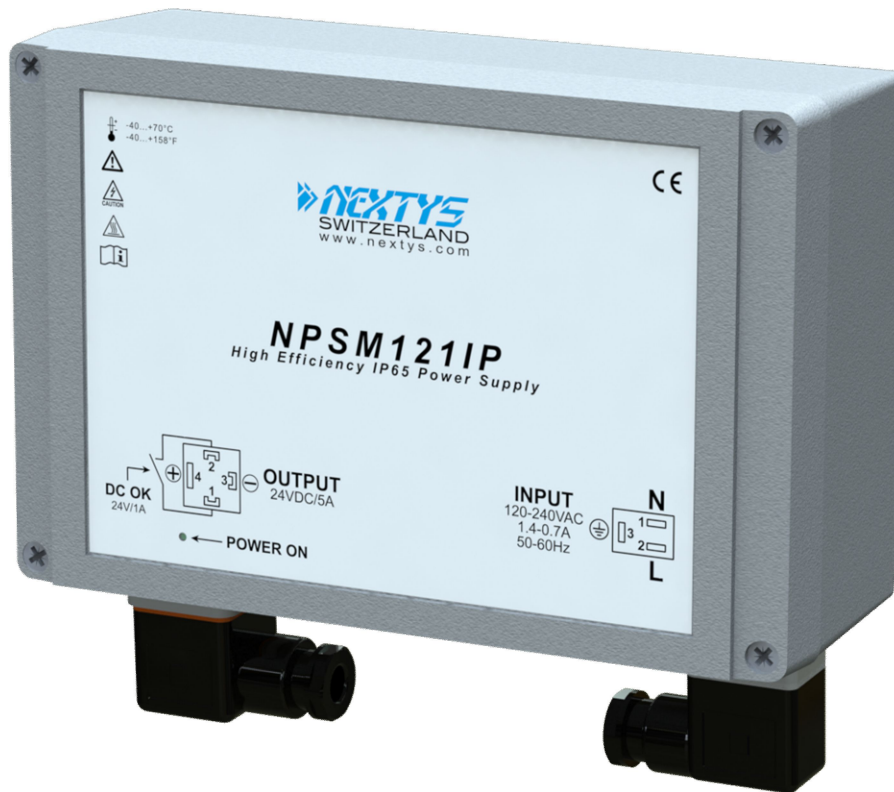


NPSM-IP SERIES

AC/DC Rugged High Efficiency Power Supply IP65



IP65



■ Main Features

-] IP65 design
-] Suitable for harsh environments
-] High efficiency and compact size
-] Active PFC
-] Overload 150%
-] High operating temperature with no derating

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TECHNICAL DATA

| Model type | NPSM121IP | NPSM241IP |
|--|---|---|
| OUTPUT DATA | | |
| Rated voltage | 24Vdc | |
| Adj. output voltage range | 24Vdc fixed | |
| Continuous current | 5A | 10A |
| Overload limit (max. 5s) | 7.5A | 15A |
| Load regulation | ≤ 1% | |
| Ripple & Noise ¹ | ≤ 60mVpp | ≤ 260mVpp |
| Hold up time | ≥ 20ms | |
| Protections | <ul style="list-style-type: none"> ▪ Overload/short circuit: Hiccup mode³ ▪ Thermal protection ▪ Input undervoltage lockout ▪ Output overvoltage | |
| Output overvoltage protection | ≥ 33Vdc | |
| Status Signals | <ul style="list-style-type: none"> ▪ Power ON - green LED ▪ DC OK - dry contact (NO, 24Vdc / 1A) | |
| Parallel connection | <ul style="list-style-type: none"> ▪ Possible for redundancy (with external ORing module) | <ul style="list-style-type: none"> ▪ Possible for redundancy ▪ Include internal ORing circuit |
| INPUT DATA | | |
| Input AC rated voltage Frequency | Nominal: 120...240Vac Range: 90...264Vac 47...63Hz | |
| Input DC rated voltage | 110...345Vdc | |
| Input AC rated current Vin = 120Vac Vin = 240Vac | 1.4A 0.7A | 2.4A 1.2A |
| Input DC rated current Vin = 110Vdc Vin = 345Vdc | 1.4A 0.5A | 2.6A 0.9A |
| Power factor correction | Active / > 0.9 | |
| Inrush peak current | ≤ 45A | ≤ 50A |
| Touch (leakage) current | ≤ 0.5mA | ≤ 0.6mA |
| Internal protection fuse | Fuse 3.15AT (not user replaceable) | Fuse 6.3AT (not user replaceable) |
| Recommended external protection | Fuse 4AT or MCB 4A C curve | Fuse 10AT or MCB 10A C curve |
| | It is strongly recommended to provide external surge arresters (SPD) according to local regulations. | |
| GENERAL DATA | | |
| Efficiency | > 90% | > 93% |
| Dissipated power | < 13.5W | < 19W |
| Operating temperature ² | - 35°C...+ 70°C | - 40°C...+ 70°C |
| Derating | No derating | - 2.4W/°C over 50°C at 120Vac - 2.4W/°C over 60°C at 240Vac |
| Storage temperature | - 40°C...+ 80°C | |
| Humidity | 5...95% r.H. non condensing | |
| Life time expectation | 74'640h (8.5 years) at 25°C ambient full load | 221'288h (25.2 years) 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 I | |
| Input / output isolation | 4.2kVdc | |
| Input / ground isolation | 2.2kVdc | |
| Output / ground isolation | 0.75kVdc | |
| Safety Standards | <ul style="list-style-type: none"> ▪ UL508 (reference) ▪ EN60950 (reference) ▪ EN50178 (reference) | |
| EMC Emission | <ul style="list-style-type: none"> ▪ EN55011 (CISPR11) Class B ▪ EN55022 (CISPR22) Class B ▪ EN61000-3-2 Class A | |
| EMC Immunity | <ul style="list-style-type: none"> ▪ EN61000-4-2 Level 3 ▪ EN61000-4-3 Level 3 ▪ EN61000-4-4 Level 4 ▪ EN61000-4-5 Level 4 ▪ EN61000-4-11 Level 2 | |
| Protection degree | <ul style="list-style-type: none"> ▪ EN60529 IP65 | |
| 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) | |

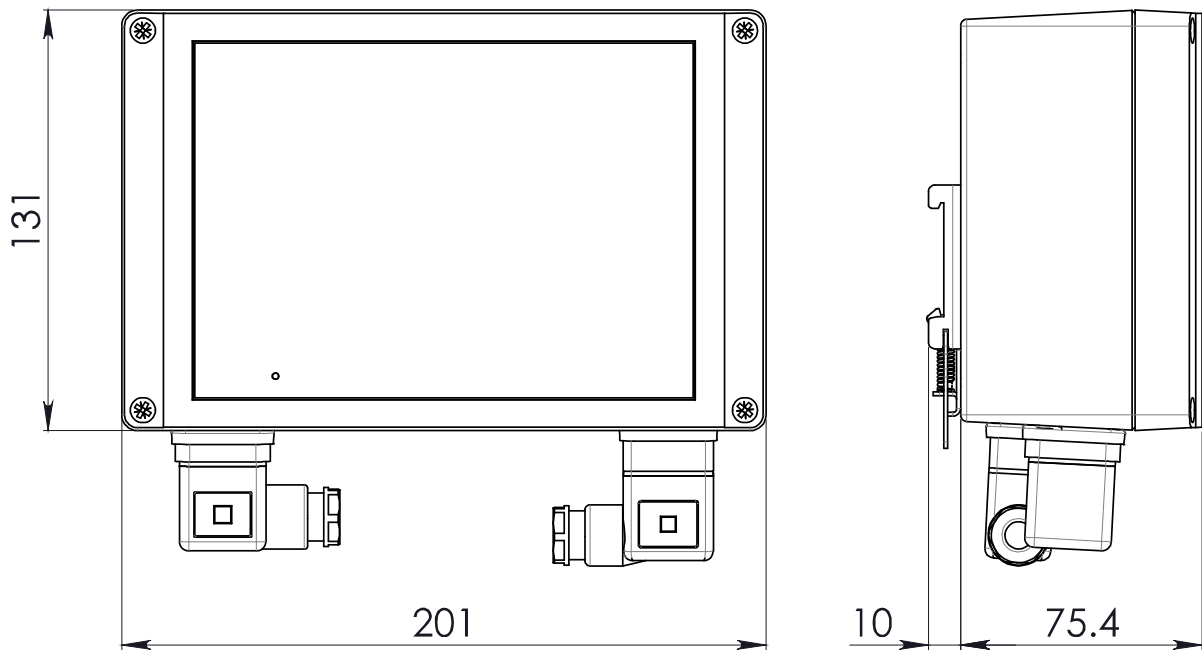
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| | | |
|--|--|--------|
| Connection terminals | 1.5mm ² , screw type pluggable (22...16AWG) | |
| Case material | Aluminum | |
| Weight | 1.45kg | 1.75kg |
| Size (W x H x D) | 201.0 x 131.0 x 75.4mm | |
| <p>1) Ripple and Noise are measured with 20MHz bandwidth, probe terminated with a 0.1µF MKP parallel capacitor. 2) Start-up type tested: - 40°C, possible at nominal voltage with load deration. 3) For Constant Current mode contact the factory.</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 (2)
- N = Neutral (1)
- | = Earth ground (3)

DC:

- L = + Positive DC (2)
- N = - Negative DC (1)
- | = Earth ground (3)

Output Connection:

- + = Positive DC (4)
- - = Negative DC (3)

Signalling:

- DC OK: dry contact
- NO (2)
- COM (1)