# **NPST-961 Series**

## AC/DC Power Supplies 3 phase input 960W













### ■ Main Features

- High efficiency and compact size
- Overload 150%
- Constant current or hiccup mode limitation, user settable
- High operating temperature with no derating
- Low noise thermally regulated "long life" fan
- 72V output model as standard

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### **TECHNICAL DATA**

FECHNICAL DATA			-11000000000000000000000000000000000000
Model type	NPST961-24	NPST961-48	NPST961-72
OUTPUT DATA	20/1	10)/ 1	721/1
Rated voltage	24Vdc	48Vdc	72Vdc
Adj. output voltage range	2328Vdc	4555Vdc	7285Vdc
Continuous current Overload limit in constant current mode	40A 44A	20A 22A	13.3A 15A
	60A	30A	20A
Overload limit in hiccup mode (max. 5s)	60A ≤ 1%	30A ≤ 0.5	
oad regulation Ripple & Noise <sup>1</sup>	≤ 1%		76
	≤100mVpp		
Hold up time	≥15ms		
Protections	Overload, short circuit: Constant current or Hiccup mode (user settable)		
	Thermal protection     Output to a protection		
	<ul> <li>Output overvoltage</li> </ul>		
Output overvoltage protection	≥ 33Vdc	≥ 68Vdc	≥ 100Vdc
Status Signals	<ul> <li>DC OK - green LED</li> </ul>		
	OVERLOAD - red LED		
	■ DC OK - dry contact (NO, 24Vdc ,	/ 1A)	
Parallel connection <sup>2</sup>	Possible for power or redundancy (with external ORing module)		
NPUT DATA			,
		Nominal: 3 phases, 400500Vac (UL certified)	
nput AC rated voltage³		Range: 340550Vac	
requency		4763Hz	
nput DC rated voltage		520725Vdc	
·		32U/23VUL	
nput AC rated current		2.44	
/in = 400Vac	2.4A		
/in = 500Vac		2.1A	
nput DC rated current			
/in = 520Vdc		2.2A	
/in = 725Vdc	1.7A		
nrush peak current	≤ 50A		
Touch (leakage) current	≤0.1mA		
nternal protection fuse	None, external fuse must be provided		
memai protection ruse			
Recommended external protection	It is strongly recommende	Fuse 3x 10AT or 3x MCB 10A C curve	rding to local regulations
·	It is strongly recommende	Fuse 3x 10AT or 3x MCB 10A C curve ed to provide external surge arresters (SPD) acco	rding to local regulations.
GENERAL DATA		ed to provide external surge arresters (SPD) acco	
GENERAL DATA  Ifficiency	> 90.5%	ed to provide external surge arresters (SPD) acco	> 93%
GENERAL DATA  ifficiency		ed to provide external surge arresters (SPD) acco > 92.5% < 78W	
GENERAL DATA Efficiency Dissipated power	> 90.5%	> 92.5% > 92.5% < 78W - 40°C+ 70°C	> 93%
GENERAL DATA  Efficiency  Dissipated power  Operating temperature <sup>4</sup>	> 90.5%	> 92.5%  > 92.5%  < 78W  - 40°C+ 70°C  UL certified up to 45°C	> 93%
GENERAL DATA  Efficiency  Dissipated power  Operating temperature <sup>4</sup>	> 90.5%	> 92.5% > 92.5% < 78W - 40°C+ 70°C	> 93%
EFINERAL DATA  Efficiency  Dissipated power  Operating temperature <sup>4</sup> Derating	> 90.5%	> 92.5%  > 92.5%  < 78W  - 40°C+ 70°C  UL certified up to 45°C	> 93%
EFINERAL DATA  Efficiency  Dissipated power  Operating temperature  Derating  Storage temperature	> 90.5%	> 92.5%  > 92.5%  < 78W  - 40°C+ 70°C  UL certified up to 45°C  - 15W/°C over 45°C  - 40°C+ 80°C	> 93%
GENERAL DATA  Efficiency Dissipated power  Operating temperature  Derating Storage temperature  Humidity  If a time expectation	> 90.5%	> 92.5%  > 92.5%  < 78W  - 40°C+ 70°C  UL certified up to 45°C  - 15W/°C over 45°C  - 40°C+ 80°C  595% r.H. non condensing	> 93%
Derating Storage temperature  Justine time expectation	> 90.5% < 101W	> 92.5%  > 92.5%  < 78W  - 40°C+ 70°C  UL certified up to 45°C  - 15W/°C over 45°C  - 40°C+ 80°C	> 93%
Derating Storage temperature  Humidity Life time expectation  Devervoltage category	> 90.5% < 101W	> 92.5%  > 92.5%  < 78W  - 40°C+ 70°C  UL certified up to 45°C  - 15W/°C over 45°C  - 40°C+ 80°C  595% r.H. non condensing	> 93%
Derating Storage temperature  Humidity Sife time expectation  Devervoltage category  Pollution degree	> 90.5% < 101W • EN50178 III • IEC60664-1 2	> 92.5%  > 92.5%  < 78W  - 40°C+ 70°C  UL certified up to 45°C  - 15W/°C over 45°C  - 40°C+ 80°C  595% r.H. non condensing	> 93%
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Derating temperature dumidity Life time expectation Dervoltage category Protection Class Input / output isolation	> 90.5% < 101W • EN50178 III • IEC60664-1 2	> 92.5%  > 92.5%  < 78W  - 40°C+ 70°C  UL certified up to 45°C  - 15W/°C over 45°C  - 40°C+ 80°C  595% r.H. non condensing  63′200h (7.2 years) at 25°C ambient full load	> 93%
Description of the control of the co	> 90.5% < 101W • EN50178 III • IEC60664-1 2	> 92.5%  > 92.5%  < 78W  - 40°C+ 70°C  UL certified up to 45°C  - 15W/°C over 45°C  - 40°C+ 80°C  595% r.H. non condensing  63′200h (7.2 years) at 25°C ambient full load  4.2kVdc  2.2kVdc	> 93%
Description of the control of the co	> 90.5% < 101W  • EN50178 III • IEC60664-1 2 • CLASS I	> 92.5%  > 92.5%  < 78W  - 40°C+ 70°C  UL certified up to 45°C  - 15W/°C over 45°C  - 40°C+ 80°C  595% r.H. non condensing  63′200h (7.2 years) at 25°C ambient full load  4.2kVdc  2.2kVdc  0.75kVdc	> 93%
Description degree Protection Class Input / output / ground isolation Dutput / ground isolation	> 90.5% < 101W  • EN50178 III • IEC60664-1 2 • CLASS I	> 92.5%	> 93%
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GENERAL DATA  Efficiency Dissipated power  Operating temperature  Operating Storage temperature  Humidity	> 90.5%	> 92.5%  > 92.5%  < 78W  - 40°C+ 70°C  UL certified up to 45°C  - 15W/°C over 45°C  - 40°C+ 80°C  595% r.H. non condensing  63'200h (7.2 years) at 25°C ambient full load  4.2kVdc  2.2kVdc  0.75kVdc  fied E356563) rence) rence)	> 93%
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Derating temperature Derating temperature Derating storage temperature Humidity Life time expectation Dervoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Dutput / ground isolation Dutput / ground isolation Safety Standards  EMC Emission	> 90.5%	2 d to provide external surge arresters (SPD) according to provide external surge arresters (SPD) according to 992.5%  392.5%  40°C+ 70°C  UL certified up to 45°C  - 15W/°C over 45°C  - 40°C+ 80°C  595% r.H. non condensing  63'200h (7.2 years) at 25°C ambient full load  4.2kVdc  2.2kVdc  0.75kVdc  fied £356563) rence) rence) rence) A A 3 3 3 3	> 93%
Derating temperature Derating temperature Derating storage temperature Humidity Life time expectation Dervoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Dutput / ground isolation Dutput / ground isolation Safety Standards  EMC Emission	> 90.5%	2 d to provide external surge arresters (SPD) according to provide external surge arresters (SPD) according 292.5%  292.5%  278W  - 40°C+ 70°C  UL certified up to 45°C  - 15W/°C over 45°C  - 40°C+ 80°C  595% r.H. non condensing  63′200h (7.2 years) at 25°C ambient full load  4.2kVdc  2.2kVdc  0.75kVdc  fied E356563) rence) rence) rence)  A  A  3  3  3  3  4	> 93%
Derating temperature Derating temperature Derating storage temperature Humidity Life time expectation Dervoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Dutput / ground isolation Dutput / ground isolation Safety Standards  EMC Emission	> 90.5%	2 d to provide external surge arresters (SPD) according to provide external surge arresters (SPD) according 292.5%  292.5%  278W  - 40°C+ 70°C  UL certified up to 45°C  - 15W/°C over 45°C  - 40°C+ 80°C  595% r.H. non condensing  63′200h (7.2 years) at 25°C ambient full load  4.2kVdc  2.2kVdc  0.75kVdc  fied E356563) rence) rence) rence)  A  A  3  3  3  3  4	> 93%
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Description of the control of the co	> 90.5%	2 d to provide external surge arresters (SPD) according to provide external surge arresters (SPD) according 292.5%  - 40°C+ 70°C  UL certified up to 45°C  - 15W/°C over 45°C  - 40°C+ 80°C  595% r.H. non condensing  63′200h (7.2 years) at 25°C ambient full load  4.2kVdc  2.2kVdc  0.75kVdc  fied E356563) rence) rence) A A 3 3 3 4 2 2 .8Hz: ±1.6mm; 17.8-500Hz: 2g 2hours / axis (X,Y,	> 93% < 73W
Description of the content of the co	> 90.5%	2 d to provide external surge arresters (SPD) according to provide external surge arresters (SPD) according \$\ 992.5\% \\ \$\ \ \ \ 78\W \\ \$\ \ \ \ \ 40^{\circ}\C\tau \ 70^{\circ}\C. \\ \$\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	> 93% < 73W
Description of the control of the co	> 90.5%	2 d to provide external surge arresters (SPD) according to provide external surge arresters (SPD) according 292.5%  2 40°C+ 70°C  UL certified up to 45°C  - 15W/°C over 45°C  - 40°C+ 80°C  595% r.H. non condensing  63′200h (7.2 years) at 25°C ambient full load  4.2kVdc  2.2kVdc  0.75kVdc  fied E356563) rence) rence)  A A A 3 3 3 4 2 2  .8Hz: ±1.6mm; 17.8-500Hz: 2g 2hours / axis (X,Y,6ms, 20g 11ms; 3 bumps / direction, 18 bumps to 1.56mm², screw type header (1610AWG)	> 93% < 73W
GENERAL DATA  Efficiency Dissipated power  Operating temperature  Derating Storage temperature  Humidity Life time expectation Divervoltage category Pollution degree  Protection Class Input / output isolation Input / ground isolation Dutput / ground isolation  EMC Emission  EMC Immunity  Protection degree  Vibration sinuosoidal Shock Connection terminals	> 90.5%	2 d to provide external surge arresters (SPD) according to provide external surge arresters (SPD) according to \$92.5%  \$\times 92.5\%\$ \$\times 78\W\$  \$\times 40^{\times C}\times 45^{\times C}\$  \$\times 15\W/^{\times C}\times 40^{\times C}\times 4	> 93% < 73W
GENERAL DATA  Efficiency Dissipated power  Derating temperature  Derating Storage temperature  Humidity Life time expectation Dervoltage category Pollution degree  Protection Class Input / output isolation Input / ground isolation Dutput / ground isolation  Dutput / ground isolation  EMC Emission  EMC Immunity  Protection degree  Vibration sinuosoidal  Shock	> 90.5%	2 d to provide external surge arresters (SPD) according to provide external surge arresters (SPD) according 292.5%  2 40°C+ 70°C  UL certified up to 45°C  - 15W/°C over 45°C  - 40°C+ 80°C  595% r.H. non condensing  63′200h (7.2 years) at 25°C ambient full load  4.2kVdc  2.2kVdc  0.75kVdc  fied E356563) rence) rence)  A A A 3 3 3 4 2 2  .8Hz: ±1.6mm; 17.8-500Hz: 2g 2hours / axis (X,Y,6ms, 20g 11ms; 3 bumps / direction, 18 bumps to 1.56mm², screw type header (1610AWG)	> 93% < 73W
GENERAL DATA  Efficiency Dissipated power  Operating temperature  Operating Storage temperature  Humidity  Use time expectation Overvoltage category Collution degree Orotection Class Input / output isolation Input / ground isolation Output / ground isolation Output / ground isolation  EMC Emission  EMC Immunity  Orotection degree  Vibration sinuosoidal Shock Connection terminals	> 90.5%	2 d to provide external surge arresters (SPD) according to provide external surge arresters (SPD) according to \$92.5%  \$\times 92.5\%\$ \$\times 78\W\$  \$\times 40^{\times C}\times 45^{\times C}\$  \$\times 15\W/^{\times C}\times 40^{\times C}\times 4	> 93% < 73W

- 1) Ripple and Noise are measured with 20MHz bandwidth, probe terminated with a 0.1µF MKP parallel capacitor.
  2) Pay attention, set the current limitation mode jumper on C.C. mode when connecting more units in parallel.
- 3) In case of 2 phases operation, reduce the output load to 50% of the nominal value.
  4) Start-up type tested: 40°C, possible at nominal voltage with load deration.

- Technical parameters are typical, measured in laboratory environment at 25°C and 400Vac / 50Hz, at nominal values, after minimum 5 minutes of operation.

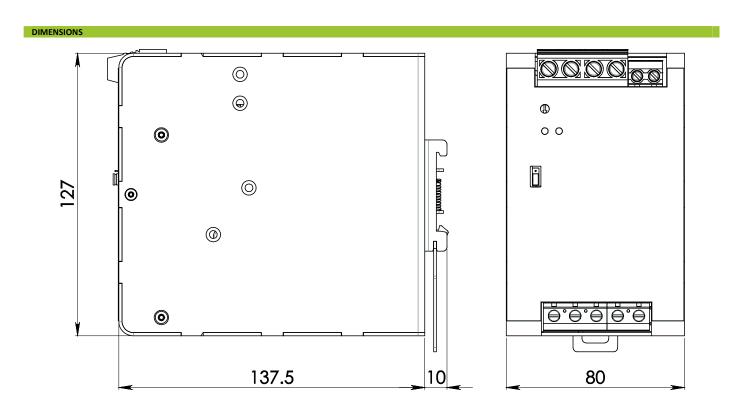
  -Power rating, losses, efficiency, ripple, thermal behaviour and start-up may change outside of the nominal rated input range. Contact factory for details.

   Data may change without prior notice in order to improve the product.

# **NPST-961 Series**

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#### CONNECTION Input Connection: **Output Connection:** 3 phases: ■ + = Positive DC + + DC OK 4RVDC/20A 24V/1A OUTPUT DC OK OUTPUT DC OK 72VDC/13.3A 24V/1A ■ L1 = phase 1 ■ - = Negative DC ■ L2 = phase 2 ⚠ ⚠ ■ L3 = phase 3 Signalling: ■ I = Earth ground DC OK: dry contact SWITZERLAND » NEXTYS SWITZERLAND SWITZERLAND ■ NO ■ COM ■ L1 = + Positive DC NPST961-48 NPST961-72 ■ L2 = - Negative DC NPST961-24 ■ L3 = do not connect $\blacksquare$ I = Earth ground INPUT INPUT INPUT L1 L2 L3 ⊕ ⊕ L1 L2 L3 ⊕ ⊕ L1 L2 L3 ⊕ ⊕