











■ Main Features

-) High efficiency and compact size
- J Overload 150%
-) Constant current or hiccup mode limitation, user settable
- *J* Easy parallelable for power increase
- J Natural convection cooling
- J 72V output model as standard

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TECHNICAL DATA

Model type	NPST501-12	NPST501-24	NPST501-48	NPST501-72
OUTPUT DATA	NF31301-12	NF31301-24	NF31301-46	NF31301-72
Rated voltage	12Vdc	24Vdc	48Vdc	72Vdc
Adj. output voltage range	1215Vdc	2328Vdc	4555Vdc	7285Vdc
Continuous current	40A	20A	10A	6.7A
Overload limit in constant current mode	44A	22A	11A	7.5A
Overload limit in hiccup mode (max. 5s)	60A	30A	15A	10A
Load regulation	≤ 2.5%	≤ 1%	≤ 0	.5%
Ripple & Noise ¹	≤ 150mVpp		≤ 100mVpp	
Hold up time		≥ 20	Oms	
Protections	 Overload, short circuit: Constant current or Hiccup mode (user settable) Thermal protection Output overvoltage 			
Output overvoltage protection	≥ 18Vdc	≥ 33Vdc	≥ 68Vdc	≥ 100Vdc
Status Signals	DC OK - green LED OVERLOAD - red LED DC OK - dry contact (NO, 24Vdc / 1A)			
Parallel connection ²		Possible for power or redundan	cy (with external ORing module)	
INPUT DATA		·	,,	
		Nominal: 3 phases, 400)500Vac (UL certified)	
Input AC rated voltage ³	Nominal: 3 phases, 400500Vac (UL certified) Range: 340550Vac 4763Hz			
Frequency				
Input DC rated voltage			725Vdc	
Input AC rated current	+	5207		
Input AC rated current Vin = 400Vac		1	3A	
Vin = 500Vac			3A 1A	
	-	1.	±11.	
Input DC rated current Vin = 520Vdc		1	2A	
Vin = 725Vdc			9A	
Inrush peak current				
Touch (leakage) current		≤ 0.1	.5mA	
Internal protection fuse		None, external fus	e must be provided	
Internal protection fuse Recommended external protection	It is strongly reco	Fuse 3x 10AT or 3x	e must be provided K MCB 10A C curve urge arresters (SPD) according to lo	ocal regulations.
Recommended external protection		Fuse 3x 10AT or 33 ommended to provide external su	MCB 10A C curve lirge arresters (SPD) according to lo	
Recommended external protection GENERAL DATA Efficiency	> 89%	Fuse 3x 10AT or 3: ommended to provide external su > 93	k MCB 10A C curve arge arresters (SPD) according to k	> 94%
Recommended external protection GENERAL DATA Efficiency		Fuse 3x 10AT or 33 ommended to provide external su > 93 < 3	k MCB 10A C curve arge arresters (SPD) according to k 3.5% 4W	
·	> 89%	Fuse 3x 10AT or 33 ommended to provide external su > 93 < 3 - 40°C.	k MCB 10A C curve arge arresters (SPD) according to k 3.5% 4W + 70°C	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴	> 89%	Fuse 3x 10AT or 3; ommended to provide external su > 93 < 3 - 40°C. UL certified	k MCB 10A C curve arge arresters (SPD) according to k 3.5% 4W + 70°C d up to 50°C	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power	> 89%	Fuse 3x 10AT or 3: commended to provide external su > 93 < 3 - 40°C. UL certifier - 4.5W/°C	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C over 50°C	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴	> 89%	Fuse 3x 10AT or 3: commended to provide external su > 93 < 3 - 40°C. UL certifier - 4.5W/°C	k MCB 10A C curve arge arresters (SPD) according to k 3.5% 4W + 70°C d up to 50°C	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature	> 89%	Fuse 3x 10AT or 3: commended to provide external su > 93 < 3 - 40°C. Fuse 3x 10AT or 3: - 40°C. - 40AT or 3: - 40AT or 3:	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C over 50°C	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity	> 89%	Fuse 3x 10AT or 3: commended to provide external su > 93 < 3 - 40°C. - 40°C. 595% r.H. n.	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation	> 89%	Fuse 3x 10AT or 3: commended to provide external su > 93 < 3 - 40°C. UL certifier - 4.5W/°C. 595% r.H. n 63'200h (7.2 years) at	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C on condensing 25°C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF	> 89% < 59W	Fuse 3x 10AT or 3: parameter of the provide external substitution of the provided external substitution of the p	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C over 50°C+ 80°C on condensing	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category	> 89% < 59W	Fuse 3x 10AT or 3: parameter of the provide external succession of the provided external succession of the	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C on condensing 25°C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree	> 89% < 59W - MIL-HDBK-217F - EN50178 - IEC60664-1	Fuse 3x 10AT or 3: parameter of the provide external substitution of the provided external substitution of the p	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C on condensing 25°C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class	> 89% < 59W	Fuse 3x 10AT or 3: parmended to provide external substitution of the provided external substitution of the prov	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C over 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation	> 89% < 59W - MIL-HDBK-217F - EN50178 - IEC60664-1	Fuse 3x 10AT or 3: parameter of the provide external substantial s	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation	> 89% < 59W - MIL-HDBK-217F - EN50178 - IEC60664-1	Fuse 3x 10AT or 3: parameter of the provide external substantial s	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C over 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity	> 89% < 59W - MIL-HDBK-217F - EN50178 - IEC60664-1	Fuse 3x 10AT or 3: parameter of the provide external substitution of the provided external substitution of the p	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation	> 89% < 59W - MIL-HDBK-217F - EN50178 - IEC60664-1	Fuse 3x 10AT or 3: parameter of the provide external substitution of the provided external substitution of the p	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Output / ground isolation	> 89% < 59W - MIL-HDBK-217F - EN50178 - IEC60664-1 - CLASS	Fuse 3x 10AT or 3: parameter of the provide external substitution of the provided external substitution of the p	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Output / ground isolation	> 89% < 59W - MIL-HDBK-217F - EN50178 - IEC60664-1 - CLASS	Fuse 3x 10AT or 3: parameter of the provide external substitution of the provided extend external substitution of the provided external substitution of	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Output / ground isolation Output / ground isolation Safety Standards	> 89% < 59W - MIL-HDBK-217F - EN50178 - IEC60664-1 - CLASS - UL508 - EN60950	Fuse 3x 10AT or 3: parameter of the provide external substitution of the provided external substitution of the p	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Output / ground isolation Output / ground isolation Safety Standards	> 89% < 59W - MIL-HDBK-217F - EN50178 - IEC60664-1 - CLASS - UL508 - EN60950 - EN50178	Fuse 3x 10AT or 3: parameter of the provide external substitution of the provided external substitution of the p	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Output / ground isolation Output / ground isolation Safety Standards	> 89% < 59W - MIL-HDBK-217F - EN50178 - IEC60664-1 - CLASS - UL508 - EN60950 - EN50178 - EN55011 (CISPR11)	Fuse 3x 10AT or 3: parameter of the provide external substitution of the provided external substitution of the p	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Output / ground isolation Output / ground isolation Safety Standards	> 89% < 59W - MIL-HDBK-217F - EN50178 - IEC60664-1 - CLASS - UL508 - EN60950 - EN50178 - EN55017 (CISPR11) - EN55022 (CISPR22)	Fuse 3x 10AT or 3: parameter of the provide external substitution of the provided external substitution of the p	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Output / ground isolation Output / ground isolation Safety Standards EMC Emission	> 89%	Fuse 3x 10AT or 3: parameter of the provide external substitution of the provide exte	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation	> 89%	Fuse 3x 10AT or 3: primended to provide external substitution of the control of t	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Output / ground isolation Output / ground isolation Safety Standards EMC Emission	> 89%	Fuse 3x 10AT or 3: primended to provide external substitution of the provided external substitution of the prov	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Output / ground isolation Safety Standards EMC Emission EMC Immunity	> 89% < 59W I MIL-HDBK-217F EN50178 IEC60664-1 I CLASS UL508 EN60950 EN50178 EN55011 (CISPR11) EN55022 (CISPR22) EN61000-4-2 EN61000-4-3 EN61000-4-3 EN61000-4-5 EN61000-4-11	Fuse 3x 10AT or 3: parameterial substitution of the provide external substitution of the provided external substi	k MCB 10A C curve urge arresters (SPD) according to lo 3.5% 4W+ 70°C d up to 50°C .over 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Output / ground isolation Safety Standards EMC Emission EMC Immunity Protection degree	> 89% < 59W I MIL-HDBK-217F EN50178 IEC60664-1 I CLASS UL508 EN60950 EN50178 EN50178 EN5021 (CISPR11) EN55022 (CISPR22) EN61000-4-2 EN61000-4-3 EN61000-4-3 EN61000-4-5 EN61000-4-11 EN60529	Fuse 3x 10AT or 3: parameterial substitution of the provide external substitution of the provided external subst	k MCB 10A C curve large arresters (SPD) according to la 3.5% 4W+ 70°C d up to 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Output / ground isolation Safety Standards EMC Emission EMC Immunity Protection degree Vibration sinuosoidal	> 89% < 59W I MIL-HDBK-217F I EN50178 I EC60664-1 I CLASS UL508 I EN60950 EN50178 EN50178 EN5021 (CISPR11) EN55022 (CISPR22) EN61000-4-2 EN61000-4-3 EN61000-4-4 EN61000-4-5 EN61000-4-5 I EN60529 I EC 60068-2-6	Fuse 3x 10AT or 3: primended to provide external substitution of the provided external substitution of the provid	k MCB 10A C curve large arresters (SPD) according to la 3.5% 4W+ 70°C d up to 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load «C Ambient full load «C Ambient full load «C Ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature ⁴ Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Output / ground isolation Safety Standards EMC Emission EMC Immunity Protection degree	> 89% < 59W I MIL-HDBK-217F EN50178 IEC60664-1 I CLASS UL508 EN60950 EN50178 EN50178 EN5021 (CISPR11) EN55022 (CISPR22) EN61000-4-2 EN61000-4-3 EN61000-4-3 EN61000-4-5 EN61000-4-11 EN60529	Fuse 3x 10AT or 3: primended to provide external substitution of the provided external substitution of the provid	k MCB 10A C curve large arresters (SPD) according to la 3.5% 4W+ 70°C d up to 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load «C Ambient full load «C Ambient full load «C Ambient full load «C Ambient full load	> 94%
Recommended external protection GENERAL DATA Efficiency Dissipated power Operating temperature Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Output / ground isolation Safety Standards EMC Emission EMC Immunity Protection degree Vibration sinuosoidal	> 89% < 59W I MIL-HDBK-217F I EN50178 I EC60664-1 I CLASS UL508 I EN60950 EN50178 EN50178 EN5021 (CISPR11) EN55022 (CISPR22) EN61000-4-2 EN61000-4-3 EN61000-4-4 EN61000-4-5 EN61000-4-5 I EN60529 I EC 60068-2-6	Fuse 3x 10AT or 3: primended to provide external substitution of the provided external substitution of the provid	k MCB 10A C curve large arresters (SPD) according to la 3.5% 4W+ 70°C d up to 50°C+ 80°C on condensing 25°C ambient full load °C ambient full load «C Ambient full load «C Ambient full load «C Ambient full load	> 94%

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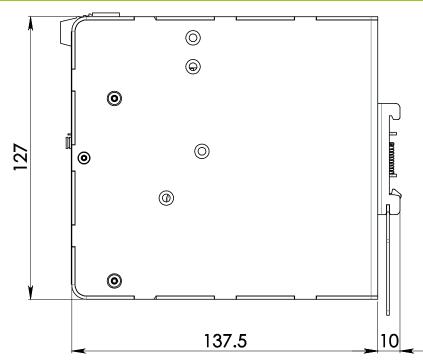


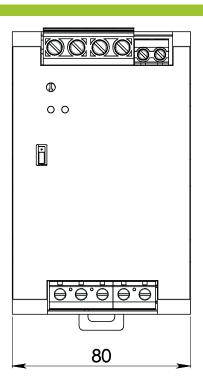
Case material	Aluminum	
Weight	1.3kg	
Size (W x H x D)	80.0 x 127.0 x 137.5mm	

- 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.

DIMENSIONS





CONNECTION







Input Connection:

3 phases:

- L1 = phase 1
- L2 = phase 2
- L3 = phase 3
- \blacksquare I = Earth ground

DC:

- L1 = + Positive DC
- L2 = Negative DC
- L3 = do not connect
- I = Earth ground

Output Connection:

- + = Positive DC
- - = Negative DC

Signalling:

DC OK: dry contact

- NO
- COM

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