













■ Main Features

- High efficiency and compact size
- **Active PFC**
- Overload 140%
- Excellent long lasting overvoltage withstand (up to 550Vac)
- Usable for broad range of industrial, telecom and renewable energy applications



TECHNICAL DATA

Mile and voltage 2.2.209dc 1.2.209dc 1.2.200dc	TECHNICAL DATA	NOCALAGO DA
State or Long-	Model type	NPSM480-24
Miles		24Vdc
Continuous current	_	
Decided interest 1984 1985 19		
Short created peak current Ship Short Ship	Overload limit	
	Short circuit peak current	50A
Forestrons	Load regulation	≤1%
Control of the cont	Ripple & Noise ¹	≤ 50mVpp
Protections	Hold up time	≥ 50ms
Dispute convertings protection ≥ 339/dc	Protections	Thermal protection
Dec	Outrout overvieltage protection	
Nominal	Output overvoitage protection	
Nominal 200_2409ac (Ut certified) Nominal 200_2409ac (Ut certi	Status Signals	OVERLOAD - red LED
Nominish 20046/yac (Ut certified) Range: 187_264/yac 1.004	Parallel connection	Possible for redundancy (with external ORing module)
Page 187 - 764 Vote	INPUT DATA	
Internation	land A.C. anto diveltance	Nominal: 200240Vac (UL certified)
Input DC rated voltage 250375 Wide Input AC rated current Input AC rated current Input DC rated current Init = 200 Was Input DC rated current Init = 375 Wide Input DC rated current Init = 375 Wide Insurance Input DC rated current Init = 375 Wide Insurance In		· · · · ·
Imput AC rated current	гечаенсу	4763Hz; 400Hz
Vin = 200Vac 2.9A Input Dr. rated current 2.2A Input Dr. rated current 2.2A Vin = 35Vdc 1.5A Power factor correction Active /> 0.9 Incush peak current? /* Pt \$2.9A / 0.6LA*s Touch (leakage) current \$0.5mA Internal protection fuse None, external fuse must be provided Recommended external protection fuse Fiss 6AT or MCB 6A Courve or AA D curve Recommended external protection fuse Fiss 6AT or MCB 6A Courve or AA D curve Recommended external protection fuse Fiss 6AT or MCB 6A Courve or AA D curve Recommended external protection fuse Fiss 6AT or MCB 6A Courve or AA D curve Recommended external protection fuse It is strongly recommended to provide external surge arresters (SPD) according to local regulations. SERVERLA DATA ************************************	Input DC rated voltage	250375Vdc
Vin = 240Vare 2.5A Unit play ID C rated current vin = 250Vack 2.2A Vin = 250Vack 2.2A Vin = 350Vack Active /> 0.9 Prower factor correction Active /> 0.9 Innush peak current vin Pit 3.58A / 0.61A/s Total (leakage) current 3.55A / 0.61A/s Internal protection fuse None, external fuse must be provided Recommended external protection fuse None, external fuse must be provided Recommended external protection fuse Fuse 6AT or MCB &C curve or 4A D curve Efficiency > 931% GENERAL DATA Secondary or 100 curve Efficiency > 931% Objecting temperature ¹ UL certified up to 45°C Objecting temperature ² 100°C - 70°C Userating 100°C - 70°C Observating 100°C - 70°C Observating 100°C - 70°C Observating 100°C - 70°C Userat	Input AC rated current	
	Vin = 200Vac	2.9A
2.7A	Vin = 240Vac	2.5A
Nin	Input DC rated current	
Power factor correction	Vin = 250Vdc	
Sample S	Vin = 375Vdc	1.5A
South South So	Power factor correction	Active / > 0.9
None, external fuse must be provided Fuse 6A T or MCB 6A Curve or AA D curve It is strongly recommended external grosection It is strongly recommended to provide external surge arresters (SPD) according to local regulations.	Inrush peak current² / I²t	≤ 29A / 0.61A²s
Fuse 6AT or MCB 6A C curve or 4A D curve	Touch (leakage) current	≤ 0.5mA
RECEMBRAL DATA Efficiency	Internal protection fuse	None, external fuse must be provided
RECEMBRAL DATA Efficiency		Fuse 6AT or MCB 6A C curve or 4A D curve
Sefficiency	Recommended external protection	
Comparing temperature Comparing temperature Comparing temperature Comparing temperature Comparing temperature Comparing Comp	GENERAL DATA	
Comparing temperature Comp	Efficiency	
Operating temperature Operating temperature Operating Oper	Dissipated power	
Storage temperature	Operating temperature ³	
Humidity S95% r.H. non condensing	· • ·	· ·
Section Sect	Derating	-10W/°C over 45°C
MTBF		-10W/°C over 45°C
Pollution degree	Derating	-10W/°C over 45°C - 40°C+ 80°C
Fe EC Fotographic Fe EC Fotographic Fotograp	Derating Storage temperature	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing
Fe EC Fotographic Fe EC Fotographic Fotograp	Derating Storage temperature Humidity	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load
A 2 k V dc Input / ground isolation 2.2 k V dc Output / ground isolation 0.75 k V dc Output	Derating Storage temperature Humidity Life time expectation MTBF	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500'000h at 25°C ambient full load
Disput / ground isolation D.75kVdc	Derating Storage temperature Humidity Life time expectation	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500'000h at 25°C ambient full load • EN50178 III
Disput / ground isolation D.75kVdc	Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500'000h at 25°C ambient full load • EN50178 III • IEC60664-1 2
Output / ground isolation	Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500'000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I
UL508 (certified E356563) UL61010-1 (certified E356563) UL61010-2-201 (certified E356563) IEC/EN61010-1 IEC/EN61010-2-201 EMC Emission EN55011 (CISPR11) Class A 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 3 EN61000-4-8 Level 4 EN61000-4-11 Level 2 Protection degree Vibration sinuosoidal IUL6010-2-201 (certified E356563) (certified E356563)	Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500′000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I
UL61010-1 (certified E356563) UL61010-2-201 (certified E356563) UL6100-4-3 (certified E356563) UL6100-4-3 (certified E356563) UL	Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65'496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500'000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I 4.2kVdc
UL61010-2-201 (certified E356563) IEC/EN61010-1	Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500′000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I 4.2kVdc 2.2kVdc
IEC/EN61010-1	Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500′000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I 4.2kVdc - 2.2kVdc 0.75kVdc
### EN55011 (CISPR11)	Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500′000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I 4.2kVdc 2.2kVdc 0.75kVdc • UL508 (certified E356563) • UL61010-1 (certified E356563)
ENG1000-4-2 Level 3 (Air), Level 2 (Contact)	Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Output / ground isolation	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500′000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I 4.2kVdc 2.2kVdc 0.75kVdc • UL508 (certified E356563) • UL61010-1 (certified E356563) • UL61010-2-201 (certified E356563)
ENG1000-4-2 Level 3 (Air), Level 2 (Contact)	Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Output / ground isolation	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500′000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I 4.2kVdc 2.2kVdc 0.75kVdc • UL508 (certified E356563) • UL61010-1 (certified E356563) • UL61010-2-201 (certified E356563) • IEC/EN61010-1
ENG Immunity EN	Derating Storage temperature Humidity Life time expectation MTBF Overvoltage category Pollution degree Protection Class Input / output isolation Input / ground isolation Output / ground isolation	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500′000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I 4.2kVdc 2.2kVdc 0.75kVdc • UL508 (certified E356563) • UL61010-1 (certified E356563) • UL61010-2-201 (certified E356563) • IEC/EN61010-1 • IEC/EN61010-2-201
EMC Immunity EN61000-4-4 Evel 3 EN61000-4-5 Level 3 EN61000-4-6 EN61000-4-6 EN61000-4-8 EN61000-4-8 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)	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	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL+HDBK-217F > 500′000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I 4.2kVdc 2.2kVdc 0.75kVdc • UL508 (certified E356563) • UL61010-1 (certified E356563) • UL61010-2-201 (certified E356563) • IEC/EN61010-1 • IEC/EN61010-2-201 • EN55011 (CISPR11) Class A
• 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)	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	-10W/°C over 45°C -40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500′000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I 4.2kVdc 2.2kVdc 0.75kVdc • UL508 (certified E356563) • UL61010-1 (certified E356563) • UL61010-2-201 (certified E356563) • IEC/EN61010-1 • IEC/EN61010-1 • IEC/EN61010-2-201 • EN55011 (CISPR11) Class A • EN61000-4-2 Level 3 (Air), Level 2 (Contact)
■ 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)	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	-10W/°C over 45°C -40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL+HDBK-217F > 500′000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I 4.2kVdc 2.2kVdc 0.75kVdc • UL508 (certified E356563) • UL61010-1 (certified E356563) • UL61010-2-201 (certified E356563) • IEC/EN61010-1 • IEC/EN61010-2-201 • EN55011 (CISPR11) Class A • EN61000-4-2 Level 3 (Air), Level 2 (Contact) • EN61000-4-3 Level 3 (80-1000MHz), Level 2 (1.4-6GHz)
■ 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)	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	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500′000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I 4.2kVdc 2.2kVdc 0.75kVdc • UL508 (certified E356563) • UL61010-1 (certified E356563) • UL61010-2-201 (certified E356563) • IEC/EN61010-1 • IEC/EN61010-1 • IEC/EN61010-2-201 • EN55011 (CISPR11) Class A • EN61000-4-2 Level 3 (80-1000MHz), Level 2 (1.4-6GHz) • EN61000-4-3 Level 3 • EN61000-4-5 Level 3
Protection degree ■ EN60529 IP20 Vibration sinuosoidal ■ IEC 60068-2-6 (5-17.8Hz: ±1.6mm; 17.8-500Hz: 2g 2hours / axis (X,Y,Z)	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	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500′000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I - CLASS I - UL508 (certified E356563) • UL61010-1 (certified E356563) • UL61010-2-201 (certified E356563) • IEC/EN61010-1 • IEC/EN61010-2-201 • EN55011 (CISPR11) Class A • EN61000-4-2 Level 3 (Air), Level 2 (Contact) • EN61000-4-3 Level 3 (80-1000MHz), Level 2 (1.4-6GHz) • EN61000-4-5 Level 3 • EN61000-4-6 Level 3
Vibration sinuosoidal ■ IEC 60068-2-6 (5-17.8Hz: ±1.6mm; 17.8-500Hz: 2g 2hours / axis (X,Y,Z)	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	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500′000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I 4.2kVdc 2.2kVdc 0.75kVdc • UL508 (certified E356563) • UL61010-1 (certified E356563) • UL61010-2-201 (certified E356563) • IEC/EN61010-1 • IEC/EN61010-2-201 (certified E356563) • IEC/EN61010-4-2 (certified E356563) • EN5011 (CISPR11) Class A • EN61000-4-2 (certified E366563) • EN61000-4-2 (certified E366563) • EN61000-4-3 (certified E366563) • EN61000-4-4 (certified E366563) • EN61000-4-5 (certified E366563)
• • • • • • • • • • • • • • • • • • • •	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	-10W/°C over 45°C -40°C+80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • Mil-HDBK-217F > 500′000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I 4.2kVdc 2.2kVdc 0.75kVdc • UL508 (certified £356563) • UL61010-1 (certified £356563) • UL61010-2-201 (certified £356563) • IEC/EN61010-1 • IEC/EN61010-1 • IEC/EN61010-2-201 • EN55011 (CISPR11) Class A • EN61000-4-2 Level 3 (Air), Level 2 (Contact) • EN61000-4-3 Level 3 (80-1000MHz), Level 2 (1.4-6GHz) • EN61000-4-5 Level 3 • EN61000-4-6 Level 3 • EN61000-4-8 Level 4 • EN61000-4-8 Level 4 • EN61000-4-8 Level 4 • EN61000-4-11 Level 2
Shock IEC 60068-2-27 (30g 6ms, 20g 11ms; 3 bumps / direction, 18 bumps total)	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	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500′000h at 25°C ambient full load • EN50178 III • IEC60664-1 2 • CLASS I - LAZEVIDE - LA
<u> </u>	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	-10W/°C over 45°C - 40°C+ 80°C 595% r.H. non condensing 65′496h (7.4 years) at 25°C ambient full load • MIL-HDBK-217F > 500′000h at 25°C ambient full load • ENSO178 III • IEC60664-1 2 • CLASS I - CLASS I - UL508 (certified E356563) • UL61010-1 (certified E356563) • UL61010-2-201 (certified E356563) • IEC/EN61010-1 • IEC/EN61010-1 • IEC/EN61010-2-201 • ENS5011 (CISPR11) Class A • EN61000-4-2 Level 3 (80-1000MHz), Level 2 (1.4-6GHz) • EN61000-4-4 Level 3 • EN61000-4-5 Level 3 • EN61000-4-8 Level 3 • EN61000-4-8 Level 4 • EN61000-4-1 Level 2 • EN60529 IP20 • IEC 60068-2-6 (5-17.8Hz: ±1.6mm; 17.8-500Hz: 2g 2hours / axis (X,Y,Z)



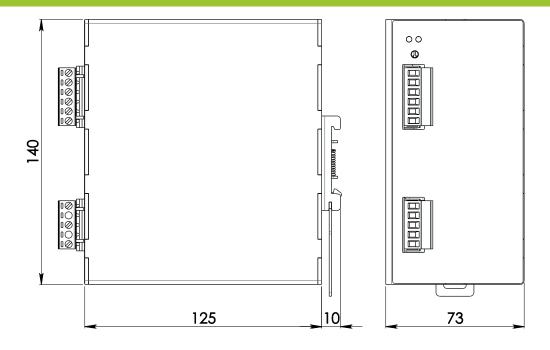
Connection terminals	2.5mm², screw type pluggable (2412AWG)
Case material	Aluminum
Weight	1.0kg
Size (W x H x D)	73.0 x 140.0 x 125.0mm

- 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) 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 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