



Switch Mode Power Supply

Supplier: J. Schneider Elektrotechnik GmbH
 Type : **UNOTEC 2405 N**
 Art.-No. : NFPG 1311G01001



Short description

The **UNOTEC 2405N** is a switch mode power supply of the latest generation, which is characterized by its high efficiency and minimum power loss. It features Power Boost and Hyper Boost function. The **UNOTEC N** can be operated redundantly. Operation in series (2 units max.) and parallel operation (up to 5 devices) are possible. Because of modern architecture, it can work in temperatures up to 60 ° C without load reduction.

Input

Nominal voltage	100-240 VAC 100-230 VDC
Voltage range	85-265 VAC 90-250 VDC
Power distribution systeme	TN-S, TN-C, TT, IT mains
Nominal frequency	50 / 60 Hz ±6 %
Nominal current	1,18 A @ 110 V AC/DC 0,55 A @ 230 V AC/DC
Inrush current	I _{eff} / IRMS: 1,2 A I _t : 0,2 A ² s
Efficiency	94,5 % 93,8 % @ 24 VDC/3,75 A load 92,7 % @ input 110 VAC; 24 VDC/5 A load
Power losses	6,88 W 5,88 W @ 24 VDC/3,75 A load
Power factor	0,87 0,80 @ 24 VDC/3,75 A load 0,99 @ input 110 VAC; 24 VDC/5 A load
No-load power loss	≤ 1,8 W @ 12 VDC/0 A load
Start-up time	< 400 ms @ input 100-230 VAC
Recommended external fuse max	20 A (T) in building installation
Recommended circuit breaker	B6 or C4
Internal device protection	6,3 A (T)

Output

Voltage	24 VDC
Voltage adjustable	24-28 VDC / potentiometer in front plate
Factory setting	24,1 VDC □0,2 V
Residual Ripple	< 50 mV eff / rms
Spikes	< 200 mV ss / p-p
Nominal current	24 VDC / 5 A (up to 60 °C) 28 VDC / 4,25 A (up to 60 °C)

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Technical modifications possible!



Input failure bridging	≥ 30 ms @ input 100 VAC; 24 VDC/5 A load
Hold-up time	30 ms
“Power boost“ current	IN x 150% for min. 4 s without voltage variation
“Hyper boost“ current	IN x 350% for min. 20 ms @ 60°C
Short circuit current	After “power boost“ follows constant current: 5 A
Parallel connection	Max. 5 units
Serial operation	Up to 2 units in series to keep SELV at the output. If more than 2 units in series the output voltage exceeds the permissible voltage limit for SELV.

Output overload and short-circuit protected. With overload the output voltage begins to reduce. With over temperature the power supply switches off.

Connection Input/Output

Type of connection	Spring clamp, push-in
Cable diameter stable	0,75–4 mm ² / AWG 18–12
Cable diameter flexible	0,75–2,5 mm ² / AWG 18–14
flexible with ferrule, with plastic sleeve	0,75–1.5 mm ² / AWG 18–16
flexibel with ferrule, without plastic sleeve	0,75–2.5 mm ² / AWG 18–14

Connection Alarm

Type of connection	Spring clamp, push-in
Cable diameter stable	0,25–4 mm ² / AWG 24–12
Cable diameter flexible	0,25–2,5 mm ² / AWG 24–14
flexible with ferrule, with plastic sleeve	0,25–1.5 mm ² / AWG 24–16
flexibel with ferrule, without plastic sleeve	0,25–2.5 mm ² / AWG 24–14

Classification of climatic environmental conditions	Class 3K3 according to EN 60721
Relative humidity	5 ... 95%, No condensation
Environmental temperature	-25 ... +60 °C
Storage temperature	-40 ... +85 °C
MTBF according to DIN EN 61709:1999-01, SN 29500, DIN EN ISO 13849-1:2008-12	> 506 805h @ 40°C
MTTF according to DIN EN 61709:1999-01, SN 29500, DIN EN ISO 13849-1:2008-12	58 years @ 40°C

Insulation voltages

Input-output	Type test: 3000 VAC; Factory test: 2500 VAC 1s
Input-PE	Type test: 1900 VAC; Factory test: 2500 VAC 1
Output-PE	Type test: 500 VAC; Factory test: 400 VAC 1s



Approvals



CE-marking in compliance with EMC directive 2004/108/EC and low-voltage directive 2006/95/EC and Directive 2011/65/EU (RoHS Directive) of THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (recast)

Housing

Dimensions	123 x 50 x 138 mm (H x W x D)
Weight	0,66 kg
Protection class	I
Protection class of the housing	IP 20
Pollution degree	2
Fixation	DIN-rail mounting TH 35 to EN 60715. Please consider the maximum permissible load of your mounting rail according to EN 60715.
Fitting position	Vertical
Material	Metal

Standards:

EN 61204-3	
EN 55011 class B, group 1	EMI: class B; EMS: industrial environment
EN 61000-3-2	class A
EN 61000-3-3	
EN 61000-4-2 ESD	contact ± 6 kV, air ± 8 kV
EN 61000-4-3 HF-field	10 V/m
EN 61000-4-4 Burst	± 2 kV, 5/50 ns
EN 61000-4-5 Surge	AC mains input L1 \rightarrow N (DM) ± 1 kV/ ± 2 kV/ $\pm 3,4$ kV
	DC output (+) \rightarrow (-) (DM) /
	(+) v (-) \rightarrow PE (CM) $\pm 0,5$ kV / $\pm 0,5$ kV
EN 61000-4-6 HF-asymm	10 V
EN 61000-4-11	
IEC 60068-2-6 Test Fc: Vibration	Vibration sinusoidal 5 - 17.8 Hz: 1.0 mm; 17.8 – 500 Hz: 2 g 10 cycles
IEC 60068-2-27 Test Ea: Shock	Shock, 15 g sinusoidal, Shock duration 11 ms
IEC / EN 60950-1	SELV
EN 60204-1	60 V / 1 sec
SEMI F47 – 0706	proof (≥ 160 VAC)
EN 60950-1 Overvoltage category:	II
Operation up to	2000 m above NN

Reliability

SN 29500
IEC 61709

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