



Switch Mode Power Supply

NFPG 1311G02001

(UNOTEC 2410 N)

1 Short Description

The **UNOTEC 2410N** 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.

2 Norms and 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	

Technical Datasheet

UNOTEC 2410 N



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3 Technical Data

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 \pm 6 %
Nominal current	2,35 A @ 110 V AC/DC 1,11 A @ 230 V AC/DC
Inrush current	I_{eff} / IRMS: 1,8 A I^2t : 0,5 A ² s
Efficiency	94,3 % 93,8 % @ 24 VDC/7,5 A Load 92,8 % @ input 110 VAC; 24 VDC/10 A load
Power losses	14,45 W 11,80 W @ 24 VDC/7,5 A Load 18,54 W @ Eingang / Input 110 VAC; 24 VDC/10 A Load
Power factor	0,95 0,94 @ 24 VDC/7,5 A load 0,99 @ input 110 VAC; 24 VDC/10 A loades
No-load power lossos	\leq 1,7W @ 24 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 \pm 0,2 V
Residual Ripple	< 50 mV eff / rms
Spikes	< 200 mV ss / p-p
Nominal current	24 VDC / 10 A (up to +60 °C) 28 VDC / 8 A (up to +60 °C)
Input failure bridging	\geq 30 ms @ input 100 VAC; 24 VDC/10 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 450% for min. 20 ms @ 60°C
Short circuit current	After "power boost" follows constant current: 10 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 unit turns off.	

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Connection Input/Output	
Type of connection	Spring clamp, push-in
Cable diameter stable	1,0–10 mm ² / AWG 17–8
Cable diameter flexible	1,0–6 mm ² / AWG 17–10
flexible with ferrule, with plastic sleeve	1,0–4 mm ² / AWG 17–12
flexibel with ferrule, without plastic sleeve	1,0–6 mm ² / AWG 17–10
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	
	<i>Class 3K3 according to EN 60721</i>
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	> 485 410 h @ 40°C
MTTF according to DIN EN 61709:1999-01, SN 29500, DIN EN ISO 13849-1:2008-12	55 years @ 40°C
Insulation voltages	
Input-output	Type test: 3000 VAC; Factory test: 2500 VAC 1s
Input-PE	Type test: 1900 VAC; Factory test: 1900 VAC 1
Output-PE	Type test: 500 VAC; Factory test: 400 VAC 1s
Approvals	
	   UL-pending
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 (re-cast).	
Housing	
Dimensions	123 x 65 x 138 mm (H x W x D)
Weight	0,85 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