

mNSP3-450P-USB

300 Watt

- PC PSU for medical applications with UPS function
- Various battery packs available
- With USB interface

The UPS PC power supply protects medical computers and PCs in surgeries against system failures due to voltage fluctuations or mains power failure. It combines the functions of a PC power supply with those of an uninterruptible power supply (UPS). The required energy is supplied by separate battery packs. The mNSP3 has been certified according to the international standards of medical engineering IEC 60601-1. For supervision and automatic shut-down a UPS Management Software monitors the power supply.



Technical data

Input voltage	85...264 V AC, active PFC
Input frequency	47...63 Hz
Input current	6 A max. (115 VAC), 3 A max. (230 VAC)
Inrush current	<31 A (100 VAC) / <75 A (240 VAC)
Efficiency	78 % typ. (240 VAC)
Power-Good-Signal	Switch on delay 100...500 ms Switch off delay 1 ms
Protection	Short circuit protection: at each output Overvoltage protection: +5 V (5.7...7.0 V) / +3.3 V (3.6...4.3 V) / +12 V (13.4...15.6 V) Switch off
Earth leakage current	<0,5 mA / 264 V AC
Safety / EMC	IEC 60601-1 3rd Edition, IEC 60950-1, UL 60601-1, UL 60950-1, CSA C22.2 No 60950-1-7, CE
Operating temperature	0...+60 °C
Derating	85...90 VAC at 90 % load / 45...60 °C 2 % / °C
MTBF	83 000 h
Storage temperature	-25...+70 °C
Operating humidity	10 % to 90 % RH, non-condensing
Dimensions (WxDxH)	150 x 140 x 86 mm ±0.5 mm
Weight (net)	1.8 kg

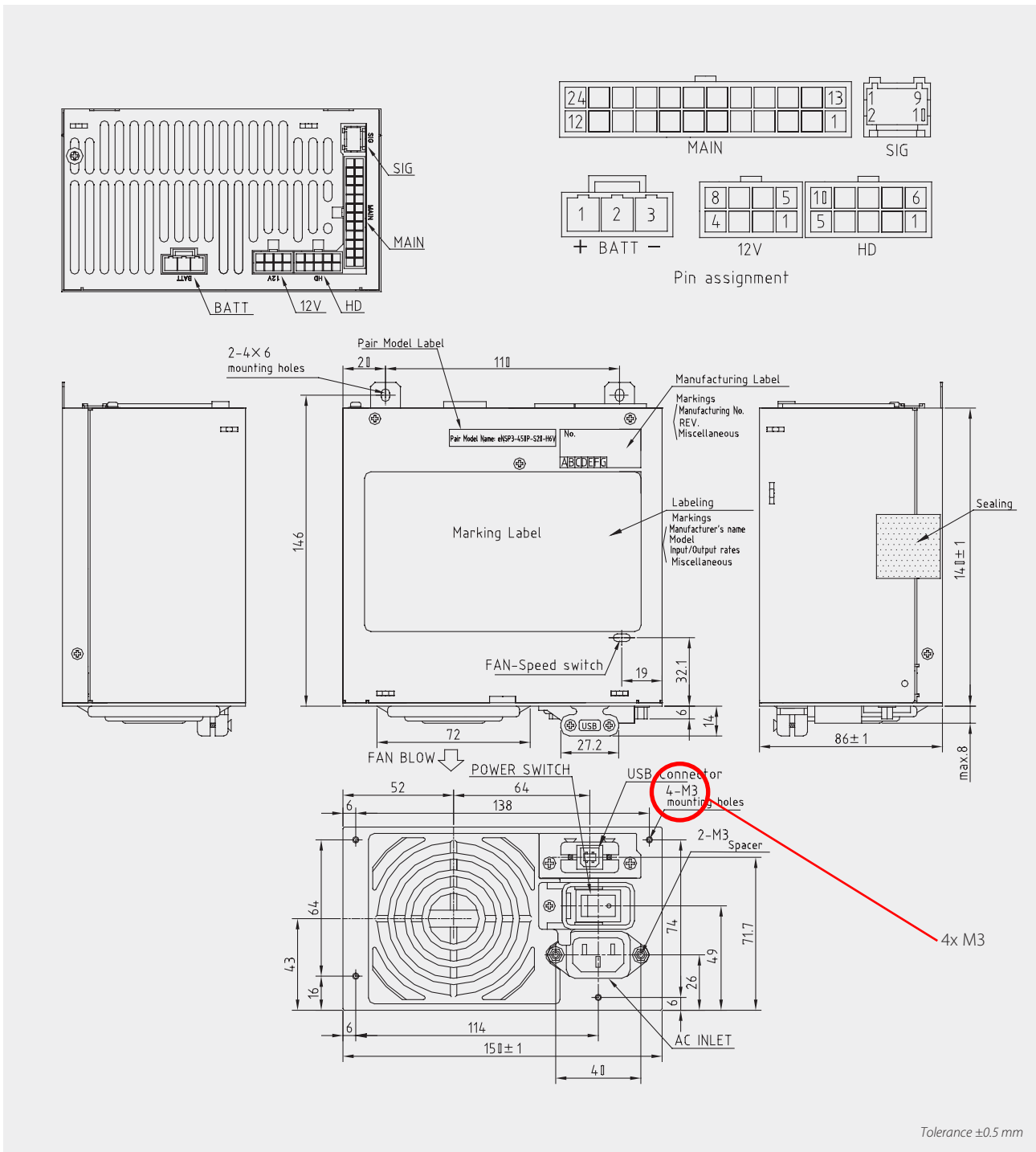
Product specific data

Battery types	BP-2423N: (2 x 12 V / 2.3 Ah), maintenance-free lead batteries RBS02A-P24/2.3L: (2 x 12 V / 2.3 Ah), maintenance-free lead batteries in clip-on frame BS10A-H24/2.0L: NiMH-battery with integrated charger BP-2425N: (6 x 2 V / 2.5 Ah), maintenance-free lead batteries
Back-up time	BP-2423N: app. 2 min. at 100 % load, app. 6 min. at 50 % load RBS02A-P24/2.3L: app. 2 min. at 100 % load, app. 6 min. at 50 % load BS10A-H24/2.0L: app. 3.5 min. at 100 % load, app. 11 min. at 50 % load BP-2425N: app. 2.5 min. at 100 % load, app. 7 min. at 50 % load
Battery charge current	0.5 A max., battery is also charged when the PC is switched off
Battery charger	27.3 V, with temperature compensation
Battery monitoring	19 V ±0.5 V „Battery low“ switching point 17 V ±0.5 V „Shut down“ switching point
Power failure	Change-over point 75 VAC
Fan switch	HIGH: always full speed LOW: temperature controlled speed

Article No.	Output voltage	Output current			Load regulation	Ripple & Noise
		min	max	peak		
mNSP3-450P-USB	+3.3 V	0 A	20 A	30 A	±4 %	50 mV
	+5 V	0 A	22 A	33 A	±4 %	50 mV
	+12 V	0 A	22 A	30 A	±5 %	120 mV
	-12 V	0 A	0.5 A	0.5 A	±5 %	120 mV
	+5 V _{sb}	0 A	2 A	2.5 A	±5 %	100 mV

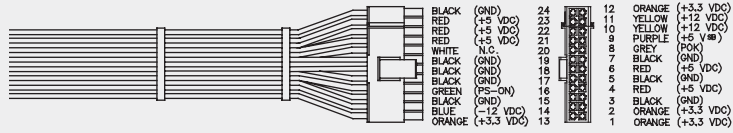
Max. output on +3.3 V and +5 V combined must not exceed 160 W (200 W peak). Max output on +3.3 V, +5 V and 12 V combined must not exceed 285 W (430 W peak). Peak output can be 450 W for up to 5 seconds. Ripple and Noise was measured by a 20 MHz bandwidth limited oscilloscope with connected 10 µF electrolytic capacitor and 0.1 µF ceramic capacitor at each output. As a power component this PSU is for assembly purposes only and must not be operated in unassembled condition. The final assembly has to comply with the valid EMC and safety standards.

Drawing mNSP3-450P-USB

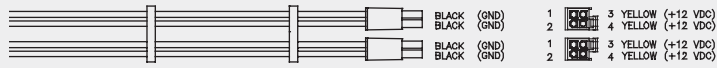


Cable harness mNSP3-450P-USB (Included in delivery)

CB-ENSP3-20+4, 500 mm

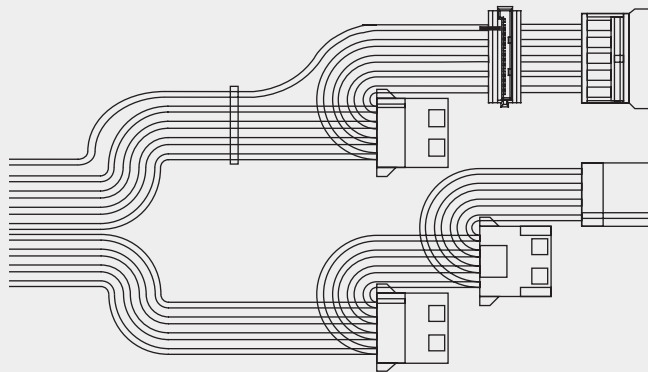


CB-ENSP3-4+4, 550 mm



CB-ENSP3-HSF

- HD, 460 mm
- SATA, 150 mm
- SATA, 200 mm
- HD, 400 mm
- HD, 150 mm
- FDD, 150 mm



CB-USB01, 500 mm



Tolerance ±15 mm

Pin assignment of backside connector

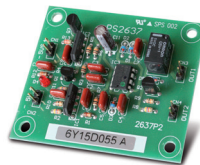
MAIN PIN No.	Function	HD PIN No.	Function	SIG PIN No.	Function	12 V PIN No.	Function
1	+3.3 V Sense	1	+3.3 V	1	AC fail	1	COM
2	+3.3 V	2	+5 V	2	Shut down	2	COM
3	COM	3	COM	3	Batt low	3	COM
4	+5 V	4	COM	4	N.C.	4	COM
5	COM	5	+12 V	5	Fan M	5	+12 V
6	+5 V	6	+3.3 V	6	PS_ON	6	+12 V
7	COM	7	+5 V	7	COM	7	+12 V
8	PWR_OK	8	COM	8	+3.3 V Sense	8	+12 V
9	+5 V _{sb}	9	COM	9	N.C.		
10	+12 V	10	+12 V	10	+5 V _{sb}		
11	+12 V						
12	+3.3 V						
13	+3.3 V						
14	-12 V						
15	COM						
16	PS_ON						
17	COM						
18	COM						
19	COM						
20	N.C.						
21	+5 V						
22	+5 V						
23	+5 V						
24	COM						

USB PIN No.	Function	BATT PIN No.	Function
1	V BUS	1	Batt +
2	D-	2	Charge Cont.
3	D+	3	Batt -
4	COM		

With Microsoft operating systems from Windows® 2000 onwards the UPS switch-off is possible via APM function, which has to be activated in the PC-BIOS.

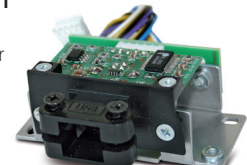
ENSP3-REBOOT

Automatic start and reboot board



ENSP3-USB-INT

Internal USB interface holder



Optional accessory ▷▷▷ For detailed information please visit our website www.bicker.de and refer to the article number.

Article No.	Description
BP-2423N	Battery pack with maintenance-free lead-batteries 24 V / 2.3 Ah
RBS02A-P24/2.3L	Battery pack with maintenance-free lead-batteries, removable, in clip-on frame
BS10A-H24/2.0L	Battery pack with NiMH-batteries 24 V / 2.0 Ah
BP-2425N	Battery pack with CYCLON cells, 24 V / 2.5 Ah / 5 1/4" format
RUPS 2000-B1	UPS-Management-Software (CD-ROM)
ENSP3-USB-INT	Internal USB interface holder
ENSP3-REBOOT	Automatic startup PC board

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Specification is subject to change without notice. Errors excepted. Status as at: 16.12.2011