

# eNSP3-450P-RS

350 Watt

- Temperature range 0...+60 °C
- RS232 communication interface to PC
- No minimum load required

The eNSP3-450P-RS combines UPS functions with PC power supply. The UPS shows a conventional PS/2 form factor and can replace all standard PC power supplies. In case of an interruption of the source, the UPS functions will set up instantaneously and feed the load with energy taken from its external 5.25" battery-pack. Via an interface cable, which is part of the delivery, the power supply can communicate with an optional UPS management software.



UPS function

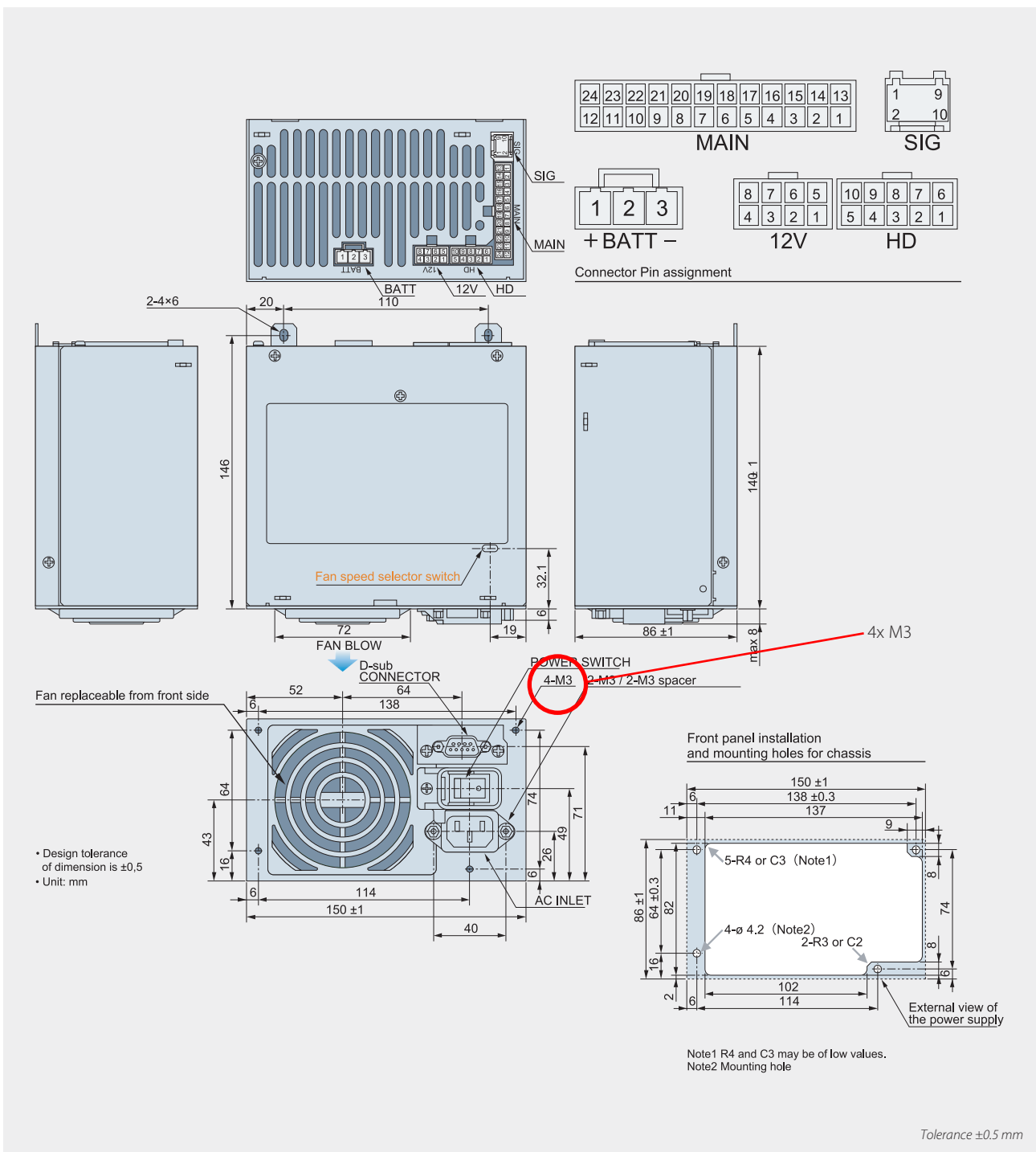
Technical data	
Input voltage	85...264 V AC, active PFC
Input frequency	47...63 Hz
Input current	6 A max. (115 V AC) / 3 A max. (230 V AC)
Inrush current	<31 A (100 V AC) / <75 A (240 V AC)
Efficiency	77 % typ. (240 V AC)
Power-Good-Signal	Switch on delay 100...500 ms Switch off delay 1 ms
Protection	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	<1 mA / 200 V AC
Safety / EMC	EN 60950-1, IEC 60950-1, UL 60950-1, CE
Operating temperature	0...+60 °C
Derating	85...90 V AC at 90 % load / 45...60 °C 2 % / °C
MTBF	83 000 h
Storage temperature	-25...+70 °C
Operating humidity	5 % 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 % charge, app. 6 Min. at 50 % charge RBS02A-P24/2.3L: app. 2 Min. at 100 % charge, app. 6 Min. at 50 % charge BS10A-H24/2.0L: app. 3.5 Min. at 100 % charge, app. 11 Min. at 50 % charge BP-2425N: app. 2.5 Min. at 100 % charge, app. 7 Min. at 50 % charge
Battery charge current	0.5 A max., battery is also charged when the PC is switched off
Battery charger	27.3 V, temperature compensated
Battery control	22 V ±0.7 V „Batterie low“ triggering 17 V ±0.5 V „Shut down“ triggering
Fan switch	HIGH: always full speed LOW: temperature controlled speed

Article No.	Output voltage	Output current			Voltage regulation	Ripple & Noise
		min	max	peak		
eNSP3-450P-RS	+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 <sub>sb</sub>	0 A	2 A	2.5 A	±5 %	100 mV

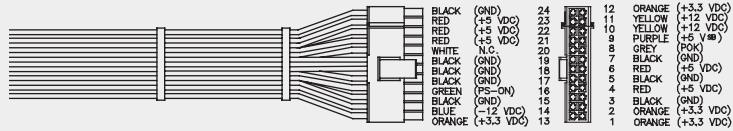
Max. output on +3.3 V and +5 V combined must not exceed 160 W (200 W peak). Max output on +3.3 V, +5 V and 12 V combined must not exceed 334 W (430 W peak). Peak output can be 450 W for up to 5 seconds. Ripple and Noise was measured by a 20 MHz bandwidth limited oscilloscope with connected 10 µF electrolytic 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 eNSP3-450P-RS

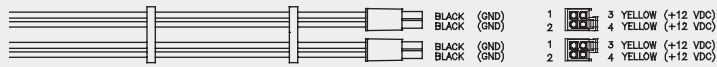


## Cable harness eNSP3-450P-RS (Included in delivery)

CB-ENSP3-20+4, 500 mm

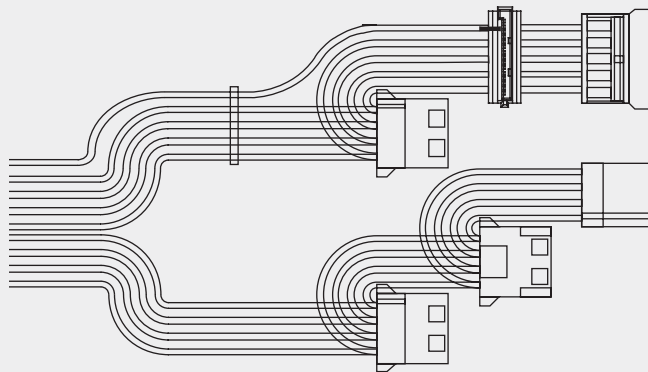


CB-ENSP3-4+4, 550 mm

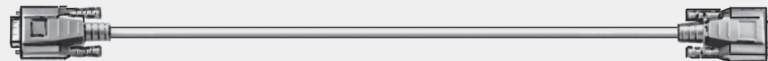


CB-ENSP3-HSF

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



PS2601-02, 500 mm



Tolerance ±15 mm

### Wiring front

#### Serial interface RS232 (DSUB9)

AC Fail	Output If AC input fails (below 75 V AC), level decreases to -9 VDC. If AC input ok, level is at +9 VDC.
Battery LOW	Output If the battery is low, level decreases to -9 VDC. If the battery is ok, level is at +9 VDC.
Shutdown	Input Signal to switch off the PSU in UPS mode. The level has to be ≥2.4 VDC and has to be connected ≥60 ms.

## Wiring back

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 <sub>sb</sub>	9	COM	9	N.C.		
10	+12 V	10	+12 V	10	+5 V <sub>sb</sub>		
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						

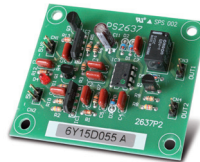
RS232 (DSUB9) PIN No.	Function	BATT PIN No.	Function
1	Batt low	1	Batt +
2	N.C.	2	Charge Cont.
3	N.C.	3	Batt -
4	Shut down		
5	N.C.		
6	N.C.		
7	N.C.		
8	AC fail		
9	N.C.		

The reference of the RS232 signal is COM (mainboard).

For Microsoft operating systems from Windows® 2000 onwards the UPS can be switched off via the APM function which has to be activated in the PC-BIOS.

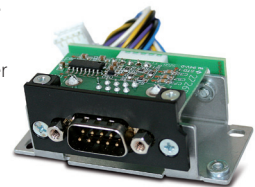
### ENSP3-REBOOT

Automatic start and reboot board



### ENSP3-RS-INT

Internal RS232 interface holder



**Optional accessory** ▷▷▷ For detailed information please visit our website [www.bicker.de](http://www.bicker.de) and refer to the article number.

Article No.	Description
BP-2423N	Battery pack with lead batteries 24 V / 2.3 Ah
BP-2425N	CYCLON battery pack, 24 V / 2.5 Ah / 5 1/4" format
RBS02A-P24/2.3L	Battery pack with lead batteries, removable (clip-on frame)
BS10A-H24/2.0L	Battery pack with NiMH-batteries 24 V / 2.0 Ah
RUPS 2000-B1	UPS management software (CD-ROM)
ENSP3-RS-INT	Internal RS232 interface holder
ENSP3-REBOOT	Automatic start and reboot board

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Specification is subject to change without notice. Errors excepted. Status as at: 09.12.2011