Technical data sheet · Power supply

Compact 3-phase, regulated, 2400 W

Identification	Type	CPSB3-2400-24
	Part-No.	722814

Description

Primary switchmode power supply, PFC, 3-phase
Input: Wide range input AC 340 - 550 V
Output: DC 24 V, 100 A

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SYSTEMATIC TECHNOLOGY

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Input	
Input protection	Surge protection according to VDE 0160, over/undervoltage (auto restart) Phase monitoring (reduced output power): PFC error
Number of phases	3
Rated voltage U_N	3 × AC 400–500 V
Operation voltage range	AC 340–550 V / DC 520–750 V
Line frequency	47 – 63 Hz
Rated current I_N	4.5 A @ AC 400 V / 3.5 A @ AC 500 V
Inrush current	< 10 A (active inrush current limitation)
External fuse	Mini-circuit breaker: 3 × C 10 A (required)
Power factor correction P.F.C.	>0.92

Output	
Rated voltage U_N	DC 24 V
Rated current I_N	100 A
Max. output current	>150 A, 5 s @ U_{out} > 90 %
Short-circuit current	150 A, 5 s
Heat dissipation	<200 W
Setting range $U_{out\ min.}/U_{out\ max.}$	DC 11.5–29 V
Load regulation	<1 %
Rise time	< 4.5 S
Ripple and Noise	<200 mV pp
Hold up time	>10 ms @ AC 400 V / >10 ms @ AC 500 V
Status indication DC ON LED green	alphanumeric display
Status indication DC LOW LED red	alphanumeric display
Parallel / redundant mode	max. 4 devices
Efficiency	>92 %
Over voltage protection	>DC 33 V (U_A=24 V)
Short circuit	adjustable: Hiccup, current limiting, C.C. Modus

Monitoring	
DC ON Control (Rdy)	Relay, N/O contact active, adjustable, DCok: 90–110 % Uset, ACok: acc. input voltage range, overload Overtemperature range, charging complete
Switching capacity	AC/DC 30 V, 1 A, 30 W
Isolation voltage	AC 500 V
Output current	galvanically isolated: 0–10 V and 4–20 mA

General	
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.2 kV
Insulation voltage output / ground	DC 750 V

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Derating	>50 °C: -60 W/°C Automatic power derating (1200 W) for 2 phases operation
Operation temperature range	-40 °C … +70 °C (UL certified up to +50 °C)
Storage temperature range	-40 °C … +80 °C
Cooling	Air convection, forced cooling >45°C, 80 mm distance top/bottom, 10 mm side
Housing material	Aluminum
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	vertical
Shock resistance	30g
Vibration resistance	5 – 17.8 Hz: ±1.6 mm, 17.8 – 500 Hz: 2 g 2 hours/axes X,Y,Z, IEC 60068-2-6: 2007
Protection class	IP20 (IEC 529 / EN 60529)
Protection class	I
Over voltage category	III
Degree of pollution	2
Weight	2.800 kg/piece
Connection type	Screw terminal Input 0.20 mm^2 – 4.0 mm^2 Output 0.20 mm^2 – 35.0 mm^2 Auxiliary 0.20 mm^2 – 1.5 mm^2
Dimensions (w × h × d)	233.0 × 169.0 × 111.0 mm
Certifications	cULus (E249179)
Standards	UL 508 IEC 950 EN 60950 EN 55011 EN 61000-4-5 Surge immunity level IV VDE 0160 EN 61000-4-2/3/4/5/6/11
MTBF	>500000 h: SN29500 / >150000 h: MIL HDBK 217F
PU	1 piece

Interface	
User Interface	LCD display 16 × 2 character, multi language, 4 keys (command and navigation)
Auxiliary voltage output	galvanically isolated DC 12 V, 100 mA
NTC	Temperature-controlled battery charging (mandatory)

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Range of functions

The new power compact series provides a number of additional adjustment options via function keys. The selected functions are shown on a display. In addition, the current output voltage and current are displayed for normal operation.

Input protection

– Active Surge suppressor and inrush limiter (ASSIL) as protection against overvoltages according to VDE 0160
– PFC error monitoring
– Phase monitoring with automatic reduction of the output power
– Automatic start/restart system for over- and undervoltages

Output protection

– Adjustable current limiting between 0.1 I_N and I_N
– Hiccup autoreset based on current limiting or maximum output voltage (150%)
– **Status display and signal**
– In addition to an LED for “DC OK” and error displays, the devices have the following analog outputs 0–10 V and 4–20 mA as direct function of the load current
– Programmable relay contact with the functions
Output voltage/current,
Overload,
Overtemperature

Additional functions

– Temperature-compensated battery charging function
–Display and compensation of the voltage drop for long cables
–Remote On/Off of the output voltage
–DC 12 V auxiliary voltage
–Monitoring and control interface based on RS232 (optional)
–Integrierte O-Ring-Diode
– Load sharing in parallel operation
–Load current sharing

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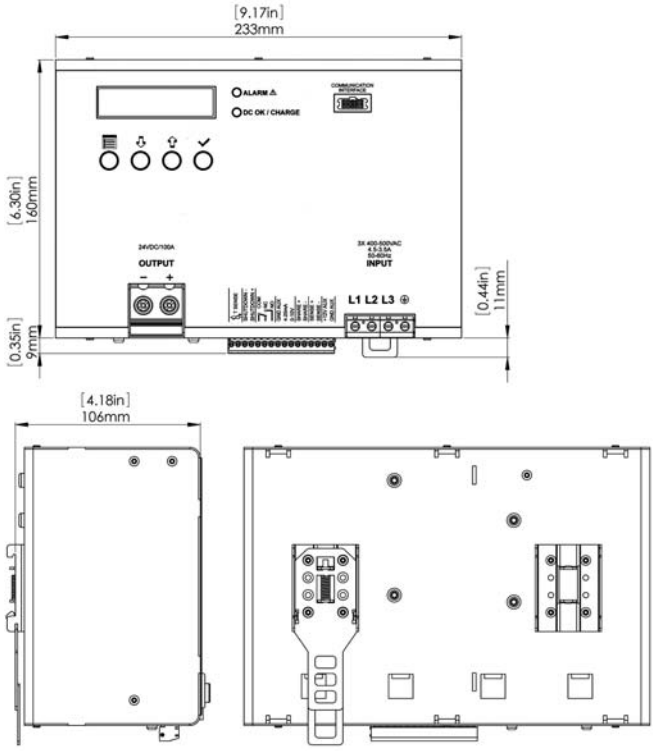
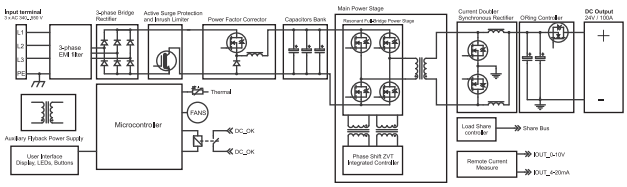
Dimensions



PIN assignment



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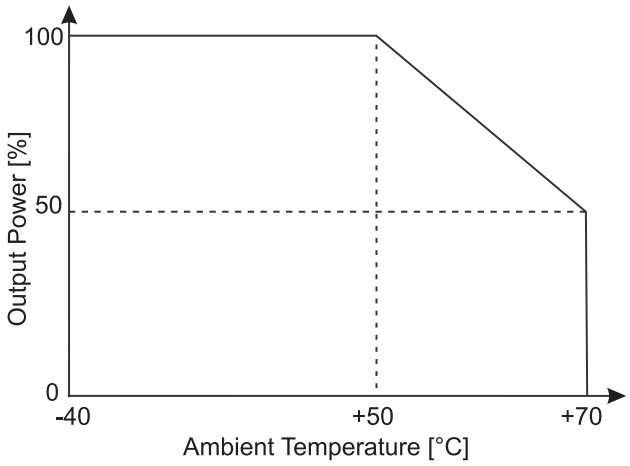
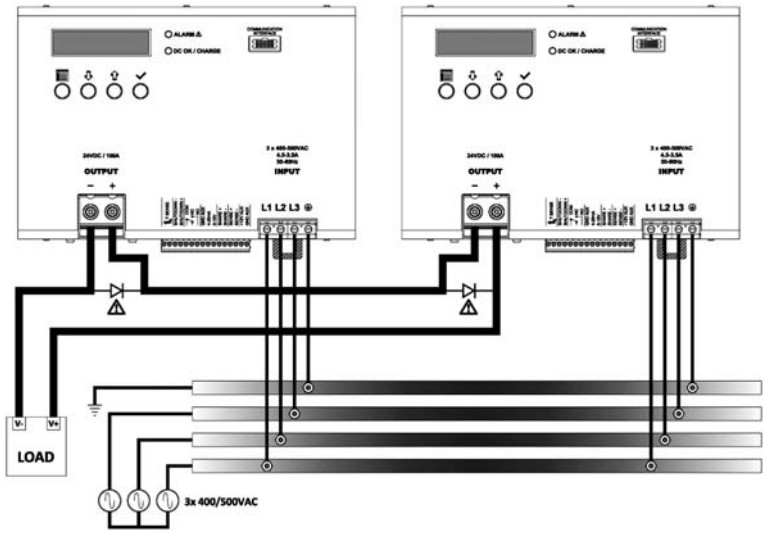
Derating



Serial operation



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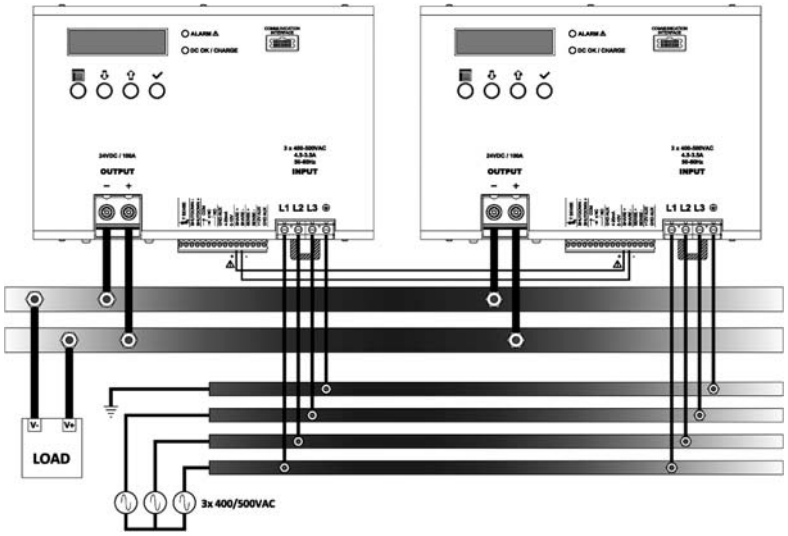
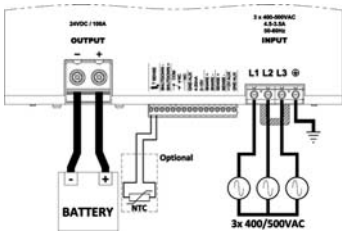
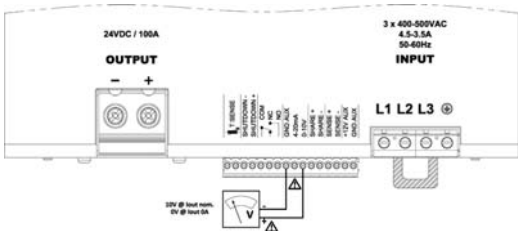
Parallel/redundant mode



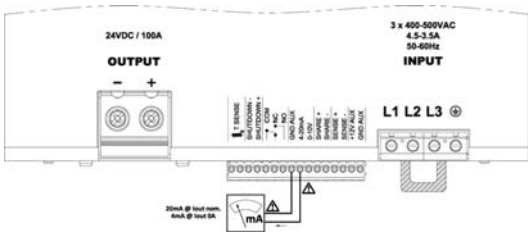
Charging operation



Output voltage in 0–10 V



Output voltage in 4–20 mA



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