

Technical data sheet

Power supply · Compact 3-phase, 2400 W

Switchmode power supply, PFC, 3-phase

Input: Wide range input AC 340 - 550 V

Output: DC 24 V, 100 A



Identification

Type CPSB3-2400-24
Part No. [722814](#)

Product version

Datasheet version 01

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

Frequency range 47 Hz – 63 Hz

Rated current I_N 4.5 A @ AC 400 V / 3.5 A @ AC 500 V

Inrush current <12.5 A (active inrush current limitation)

External protection Mini-circuit breaker: 3 × C 10 A / safety fuse: 3 × T 10 A (required)

Power factor correction P.F.C. >0.92

Output

Output voltage/current DC 24 V/100 A

Rated voltage U_N DC 24 V

Rated current I_N 100 A

Max. output current (limited current) >100 A

Max. output current (HICCUP, 5 sec) 150 A

Power Dissipation <200 W

Setting range $U_{out\ min.}/U_{out\ max.}$ DC 11.9–29 V

Load regulation <1 %

Rise time < 4.5 s

Ripple and noise <200 mV pp

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11.10.2024 • Subject to technical modification

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SYSTEMATIC TECHNOLOGY

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Hold up time	>10 ms @ AC 400 V / >10 ms @ AC 500 V
Parallel / redundant mode	Max. 4 devices
Efficiency	>92 %
Over voltage protection	>DC 33 V
Short circuit	Adjustable: Hiccup, current limiting (C.C. Modus)

Status indication

Status indication DC ON LED green	Alphanumeric display
Status indication DC LOW LED red	Alphanumeric display

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
Derating	>50 °C: -60 W/°C Automatic power derating (1200 W) for 2 phases operation
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
MTBF	>500000 h: SN29500 / >700000 h: MIL-HDBK-217F
Degree of protection	IP20 (IEC 529 / EN 60529)
Protection class	I
Weight/unit	2.8 kg
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 mm × 160.0 mm × 101.0 mm
PU (units)	1

General ambient conditions

Operation temperature range	-40 °C ... +70 °C (UL approved up to +50 °C)
Storage temperature range	-40 °C ... +80 °C

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Over voltage category	III
Degree of pollution	2
Relative air humidity	5 – 95 % RH, non-condensing
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
Shock resistance	30 g 6 ms, 20 g 11 ms, 3 shocks/direction, 18 shocks in total, IEC60068-2-27

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)

Approvals/Standards

Approvals	CE UKCA cULus (E249179)
Standards	UL 508 IEC/EN 61010-1 IEC/EN 61010-2-201 IEC/EN 60950 EN 55011 (CISPR11) Class A EN 55022 (CISPR22) Class A EN 61000-3-2 Class A EN 61000-4-2 Level 3 EN 61000-4-3 Level 3 EN 61000-4-4 Level 4 EN 61000-4-5 Level 4 EN 61000-4-11 Level 2 IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz: ± 1.6 mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z) IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total

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Notes and Comments

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

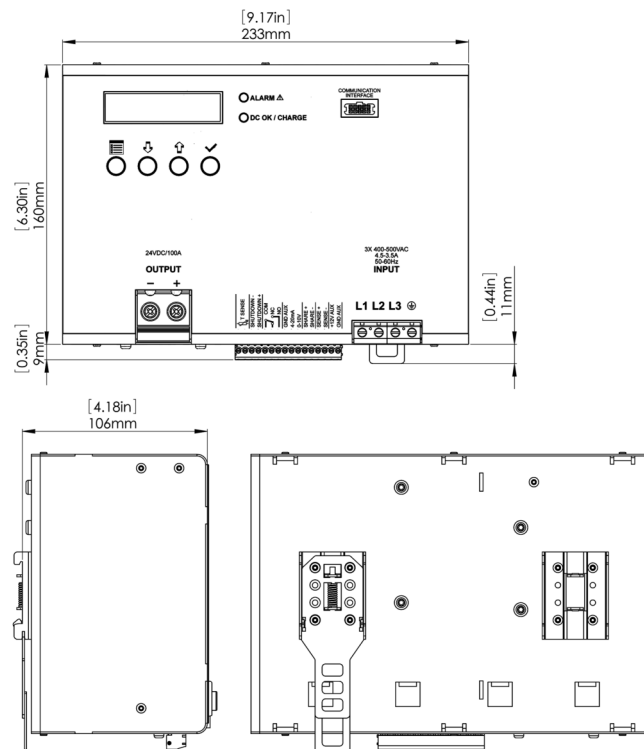
– In addition to an LED for “DC OK” and error displays, the devices have the following analog outputs 0–10 V and 4–20 mA as direct function of the load current

- 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

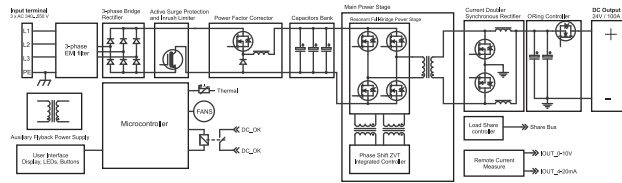
Dimensions



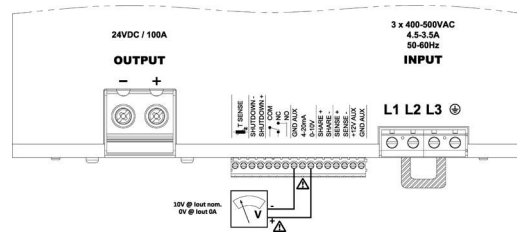
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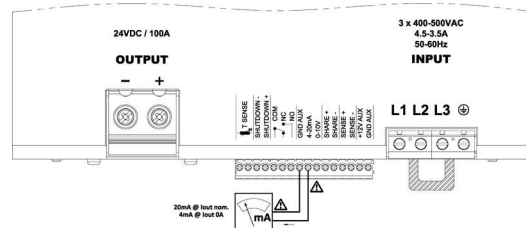
PIN assignment



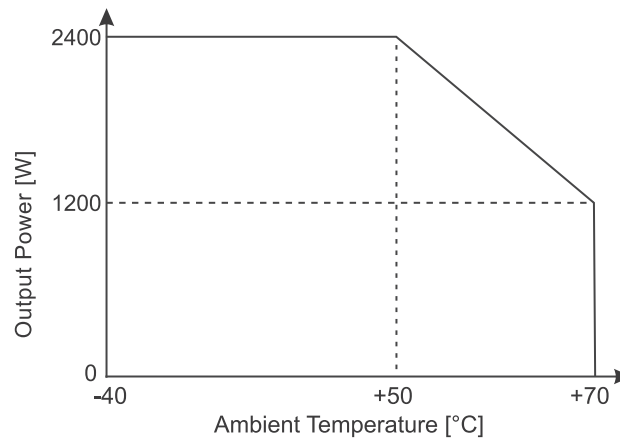
Output voltage in 0–10 V



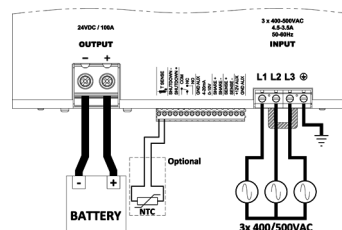
Output voltage in 4–20 mA



Derating



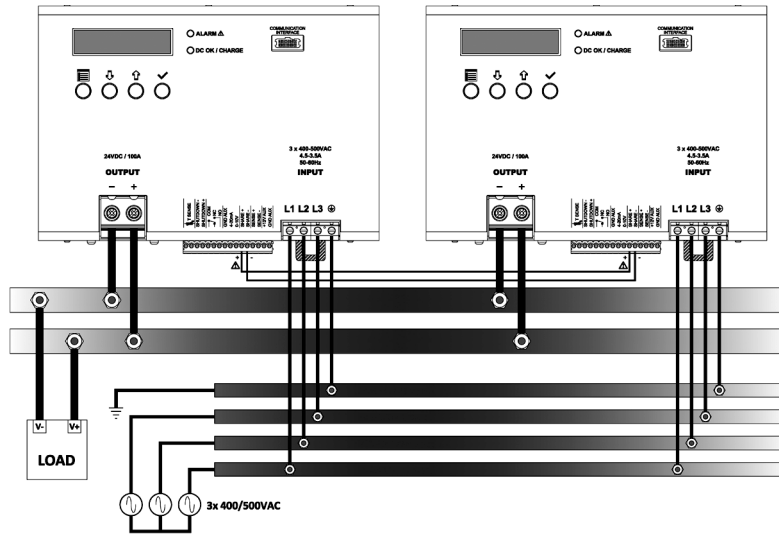
Charging operation



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Parallel/redundant mode



Serial operation

