



# PS 1000/230 02

**Power Supply Unit PS 1000/230 02**

**230 VAC / 48 VDC**

**Continuous load 20 A**

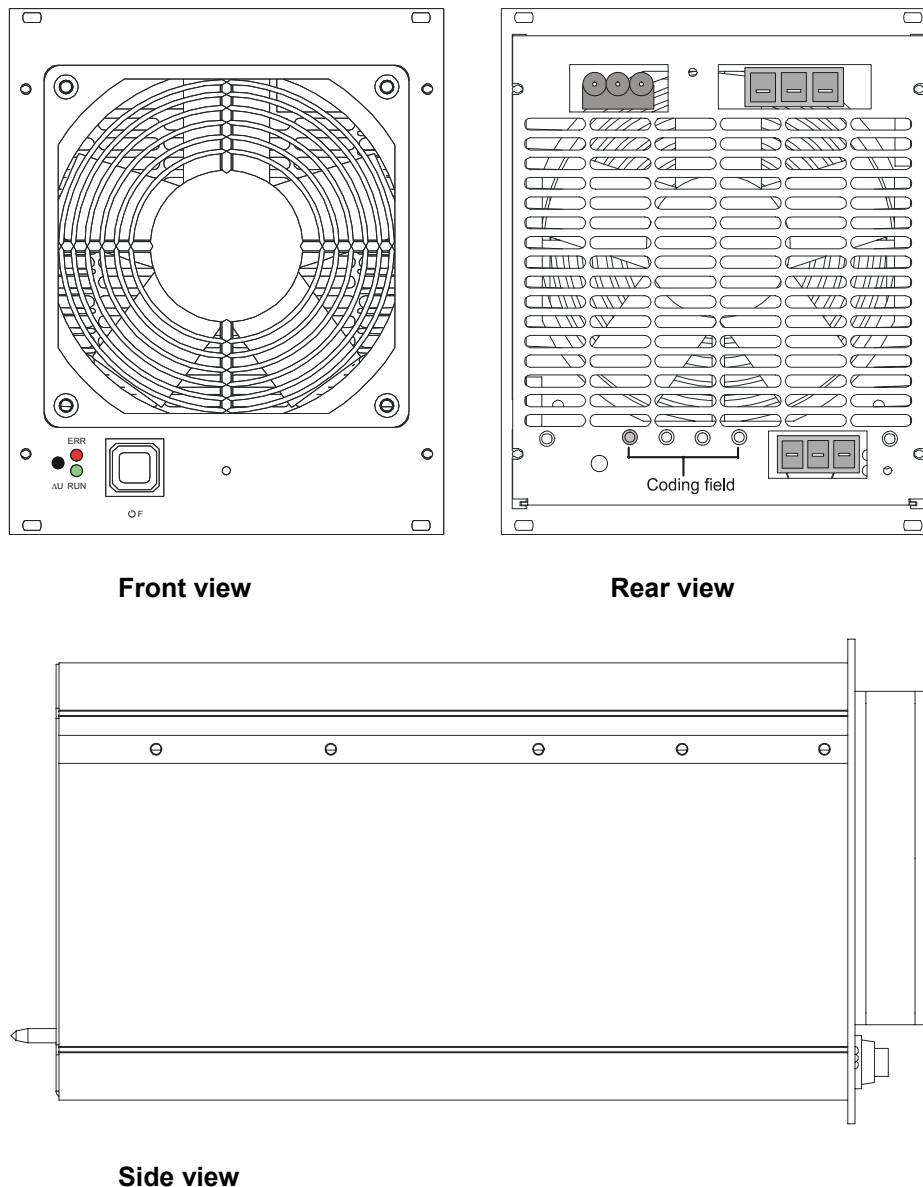
Electronically controlled power supply unit for 19-inches subracks

## Table of Contents

	Page
<b>1 Power Supply PS 1000/230 02</b> .....	<b>2</b>
1.1 Construction.....	2
1.2 Block Diagram.....	3
1.3 ESD Protective Measures.....	3
1.4 Fault Messages.....	3
1.5 Use of several Power Supplies.....	5
1.6 Technical Data PS 1000/230 02.....	5

# 1 Power Supply PS 1000/230 02

## 1.1 Construction



**Figure 1: Views power supply PS 1000/230 02**

The power supply PS 1000/230 02 is an electronically controlled modular module to be used in the 19-inches subrack M 3421, 4 units high (cf. data sheet M 3421).

The output of the power supply is short-circuit-proof.

The function of the power supply is indicated by a green LED on the front plate.

The fan speed is monitored, and faults are indicated via the red error LED and the contact.

All connections of the power supply are made automatically via plug-in terminals when it is plugged into its slot in the subrack.

A coding field is located on the back plate of the power supply below the ventilation slots. This field has four plain holes for guide pins.

In case of the power supply unit 240 V only the left guide pin of the coding field is screwed from the inside of the power supply (see fig. rear view).

The guide pin codes the type of power supply.

It also helps when the power supply is plugged into the subrack. The pin fits to the according plain hole in the back plate of the subrack.

The power supply meets the IEC 61131-2 standard.

The output voltage (R+ / L+ / L-) of the device meets the requirements for SELV and/or PELV circuits.

## 1.2 Block Diagram

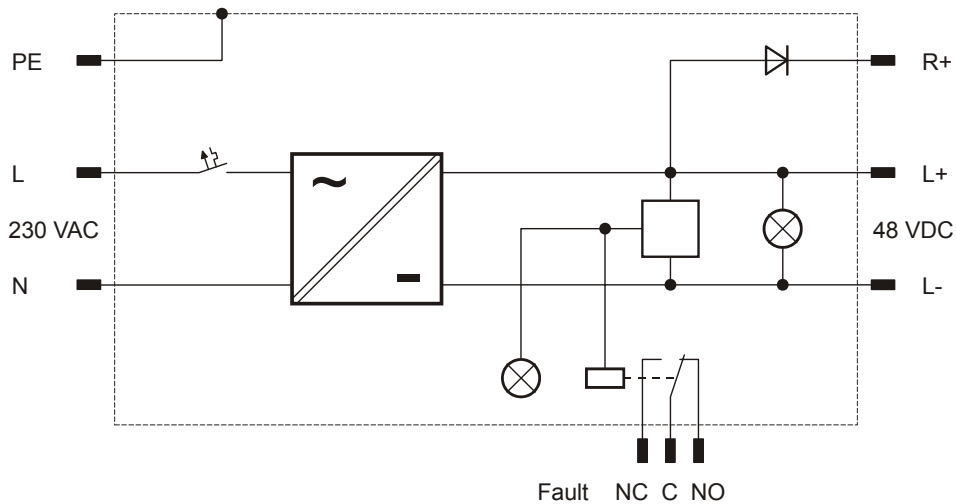


Figure 2: Block diagram, elements non-operated / de-energized

## 1.3 ESD Protective Measures

Only personnel who have knowledge of ESD protective measures are permitted to replace a power supply unit.



**An electrostatic discharge can damage the built-in electronic components!**

- Touch an earthed object to discharge any static in your body.
- When carrying out the work, make sure the working area is free of static and wear an earthing strip.
- When the module is not in use, ensure it is protected from electrostatic charges, e. g. keep it in its packaging.

## 1.4 Fault Messages

Faults occurring in the power supply are displayed via the red LED indicator on the front plate and annunciated by a potential-free changeover contact (cf. block diagram).

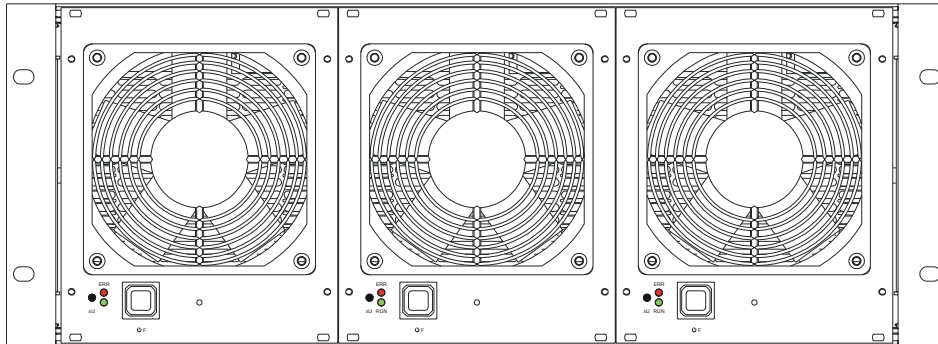
Error contact (Fail)	State
C-NC closed (C-NO open)	Relay energized, normal unit function
C-NC open (C-NO closed)	Relay de-energized, fault in the unit

Table 1: Changeover contact of the power supply

The electrical connection of the error contact is made with three plug-in terminals at the rear of the subrack M 3421.

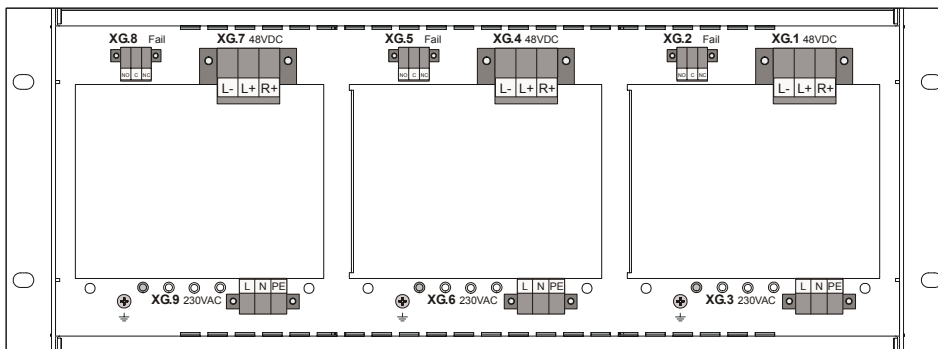
Up to three power supply units can be inserted into one subrack M 3421, also for parallel or redundant operation without additional decoupling diodes.

Redundant switched off units can be replaced during operation without switching off any other unit.



**Figure 3: Front view of a fully equipped subrack M 3421**

Each power supply is equipped with a fan at the front. It is important for mounting the subrack to ensure an easy air flow at its front and rear.



**Figure 4: Rear view of the subrack M 3421 with terminals**

All connections for the power supplies are made via plug-in terminals at the rear of the subrack.



**The use of 48 V power supplies in 24 V plants results in the destruction of the 24 V devices!**

**Note** At manual switch-on and switch-off of the power supplies a latency of one minute must be regarded as time between switch-off and switch-on.

Reason: Recovery time of the soft start circuit

## 1.5 Use of several Power Supplies

If several 48 V power supplies are used in redundant operation (parallel operation), the common output current  $I$  must be set to the same value for all power supplies via the  $\Delta U$  potentiometer at the front of each power supply. The output current of the power supplies can be measured with a clamp measuring unit at the current terminals at the rear front of the subrack.

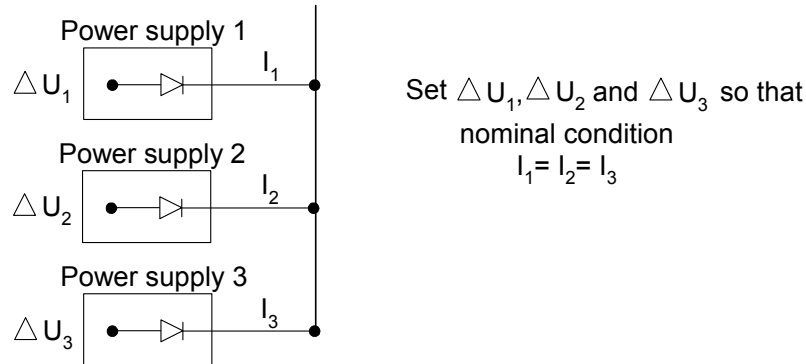


Figure 5: Adjustment of several power supplies via the  $\Delta U$  potentiometer

## 1.6 Technical Data PS 1000/230 02

Power supply	
Input voltage	230 VAC, -15...+10 % and 240 VAC, -15...+10 %, 50...60 Hz
Output voltage	48 VDC, adjustable +5 / -10 % via potentiometer $\Delta U$ in the front plate
Fuse	240 VAC 10 A automat
Maximum load	20 A continuously
Regulation	< 100 mV at load change 0...100 %
Efficiency	> 89 %
Power dissipation	< 110 W
Hold-up time	20 ms
Degree of protection	IP 20
Humidity	< 95 % rel., non-condensing
Ambient temperature	0...60 °C
Storage temperature	-40...+85 °C
Dimensions	28 SU, 4 units high W x H x D: 142 x 173 x 281 mm
Weight	approx. 6 kg
External fusing	16 A gL
Connections	min. cross sections for wiring: 240 VAC 1.5 mm <sup>2</sup> 48 VDC 10 mm <sup>2</sup> Fail 0.5 mm <sup>2</sup>
Fault contact	one potential-free changeover contact, connection via terminals 3 x 1.5 mm <sup>2</sup> in the subrack
Switching capacity	30 VDC / 1 A 30 VAC / 0.5 A
MTTF	30 years