

# Power supply unit - TRIO-PS/ 1AC/24DC/20 - 2866381

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DIN rail power supply unit, primary-switched mode, 1-phase, output: 24 V DC / 20 A

## Product Description

TRIO POWER is the DIN-rail-mountable power supply unit with basic functions. With an output voltage of 5 V DC, 12 V DC, 24 V DC, and 48 V DC and 1- and 3-phase versions with 60 W or 960 W, it is particularly suited for use in series production in mechanical engineering. The wide-range input and international certification package allow worldwide implementation. The high MTBF of 500,000 h stands for high supply reliability. The devices can be connected in parallel to increase the capacity and redundancy. The clear LED signaling and the device connection with double terminal block for plus and minus for fast potential distribution are further advantages of this device series. A third minus terminal block simplifies the grounding on the secondary side. All power supply units are idle-proof and short-circuit-proof and provide a regulated and adjustable output voltage.

## Product Features

- Use the third negative terminal block as a grounding terminal block and minimize installation costs
- Maximum operational reliability thanks to high MTBF (mean time between failures) of more than 500,000 hours and high dielectric strength of up to 300 V AC
- Rugged design with metal housing and wide temperature range from -25 to +70°C
- Compensation of voltage drops by means of output voltage that can be adjusted on the front



## Key commercial data

package_quantity	1
GTIN	4046356046664

## Technical data

### Dimensions

Width	115 mm
Height	130 mm
Depth	152.5 mm

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C (> 55° C derating)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, no condensation)
Noise immunity	EN 61000-6-2:2005

### Input data

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## Technical data

### Input data

Nominal input voltage range	100 V AC ... 240 V AC
Input voltage range AC	85 V AC ... 264 V AC (derating < 90 V AC: 2.5% per Kelvin)
Short-term input voltage	300 V AC
AC frequency range	45 Hz ... 65 Hz
Current consumption	4.6 A (120 V AC)
Current consumption	2.4 A (230 V AC)
Inrush surge current	< 15 A
Power failure bypass	> 13 ms (120 V AC)
Power failure bypass	> 13 ms (230 V AC)
Input fuse	10 A (slow-blow, internal)
Power factor (cos phi)	0.99
Type of protection	Transient surge protection
Protective circuit/component	Varistor

### Output data

Nominal output voltage	24 V DC $\pm$ 1%
Setting range of the output voltage	22.5 V DC ... 29.5 V DC (> 24 V constant capacity)
Output current	20 A (-25°C ... 55°C)
Derating	55 °C ... 70 °C (2.5%/K)
Connection in parallel	Yes, for redundancy and increased capacity
Connection in series	Yes
Max. capacitive load	Unlimited
Current limitation	Approx. 25 A (for short-circuit)
Control deviation	< 1 % (change in load, static 10% ... 90%)
Control deviation	< 2 % (change in load, dynamic 10% ... 90%)
Control deviation	< 0.1 % (change in input voltage $\pm$ 10%)
Residual ripple	< 10 mV <sub>PP</sub>
Peak switching voltages nominal load	< 80 mV <sub>PP</sub>
Maximum power dissipation NO-Load	4 W
Power loss nominal load max.	46 W

### General

Net weight	2.2 kg
Operating voltage display	Green LED
Efficiency	> 91 % (for 230 V AC and nominal values)
Insulation voltage input/output	4 kV AC (type test)
Insulation voltage input/output	2 kV AC (routine test)
Protection class	I, with PE connection
MTBF (IEC 61709, SN 29500)	> 915000 h (According to EN 29500)
Mounting position	horizontal DIN rail NS 35, EN 60715
Assembly instructions	Can be aligned: Horizontally 0 mm, vertically 50 mm
Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC

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## Technical data

### General

<b>Low Voltage Directive</b>	Conformance with LV directive 2006/95/EC
<b>Standard – Electrical equipment of machines</b>	EN 60204
<b>Standard - Electrical safety</b>	EN 60950-1/VDE 0805 (SELV)
<b>Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations</b>	EN 50178/VDE 0160 (PELV)
<b>Standard – Safety extra-low voltage</b>	EN 60950-1 (SELV)
<b>Standard – Safety extra-low voltage</b>	EN 60204 (PELV)
<b>Standard - Safe isolation</b>	DIN VDE 0100-410
<b>Standard - Safe isolation</b>	DIN VDE 0106-1010
<b>Standard – Protection against electric shock</b>	DIN 57100-410
<b>Standard – Protection against shock currents, basic requirements for protective separation in electrical equipment</b>	DIN VDE 0106-101
<b>Standard – Limitation of mains harmonic currents</b>	EN 61000-3-2
<b>UL approvals</b>	UL/C-UL listed UL 508
<b>UL approvals</b>	UL/C-UL Recognized UL 60950
<b>Surge voltage category</b>	III

### Connection data, input

<b>Connection method</b>	Screw connection
<b>Conductor cross section solid min.</b>	0.2 mm <sup>2</sup>
<b>Conductor cross section solid max.</b>	2.5 mm <sup>2</sup>
<b>Conductor cross section stranded min.</b>	0.2 mm <sup>2</sup>
<b>Conductor cross section stranded max.</b>	2.5 mm <sup>2</sup>
<b>Conductor cross section AWG/kcmil min.</b>	24
<b>Conductor cross section AWG/kcmil max</b>	14
<b>Stripping length</b>	9 mm
<b>Screw thread</b>	M2,5

### Connection data, output

<b>Connection method</b>	Screw connection
<b>Conductor cross section solid min.</b>	0.5 mm <sup>2</sup>
<b>Conductor cross section solid max.</b>	6 mm <sup>2</sup>
<b>Conductor cross section stranded min.</b>	0.5 mm <sup>2</sup>
<b>Conductor cross section stranded max.</b>	4 mm <sup>2</sup>
<b>Conductor cross section AWG/kcmil min.</b>	20
<b>Conductor cross section AWG/kcmil max</b>	10
<b>Stripping length</b>	14 mm

### Signaling

<b>Status display</b>	"DC OK" LED green
<b>Note on status display</b>	U <sub>OUT</sub> > 21.5 V: LED lights up

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## classifications

### eCl@ss

eCl@ss 4.0	27040702
eCl@ss 4.1	27040702
eCl@ss 5.0	27049002
eCl@ss 5.1	27049002
eCl@ss 6.0	27049002
eCl@ss 7.0	27049002
eCl@ss 8.0	27049002

### ETIM

ETIM 2.0	EC001039
ETIM 3.0	EC001039
ETIM 4.0	EC000599
ETIM 5.0	EC002540

### UNSPSC

UNSPSC 6.01	30211502
UNSPSC 7.0901	39121004
UNSPSC 11	39121004
UNSPSC 12.01	39121004
UNSPSC 13.2	39121004

## approvals

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UL Recognized / UL Listed / cUL Recognized / cUL Listed / cULus Recognized / cULus Listed /

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### Approval details

UL Recognized

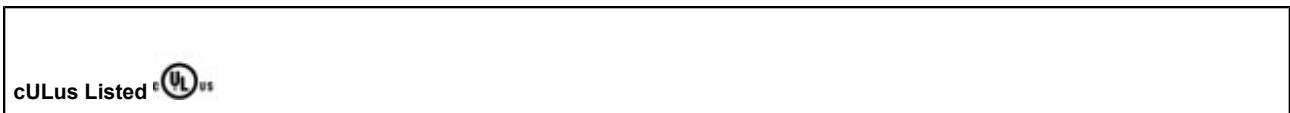
UL Listed

cUL Recognized

cUL Listed

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approvals



accessories

## Assembly adapter

UWA 182/52 - 2938235

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## Mounting rail adapter

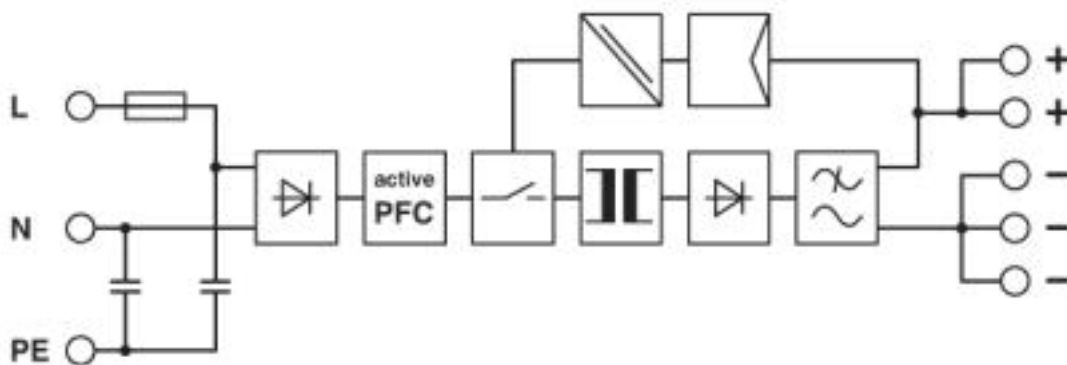
UTA 107 - 2853983



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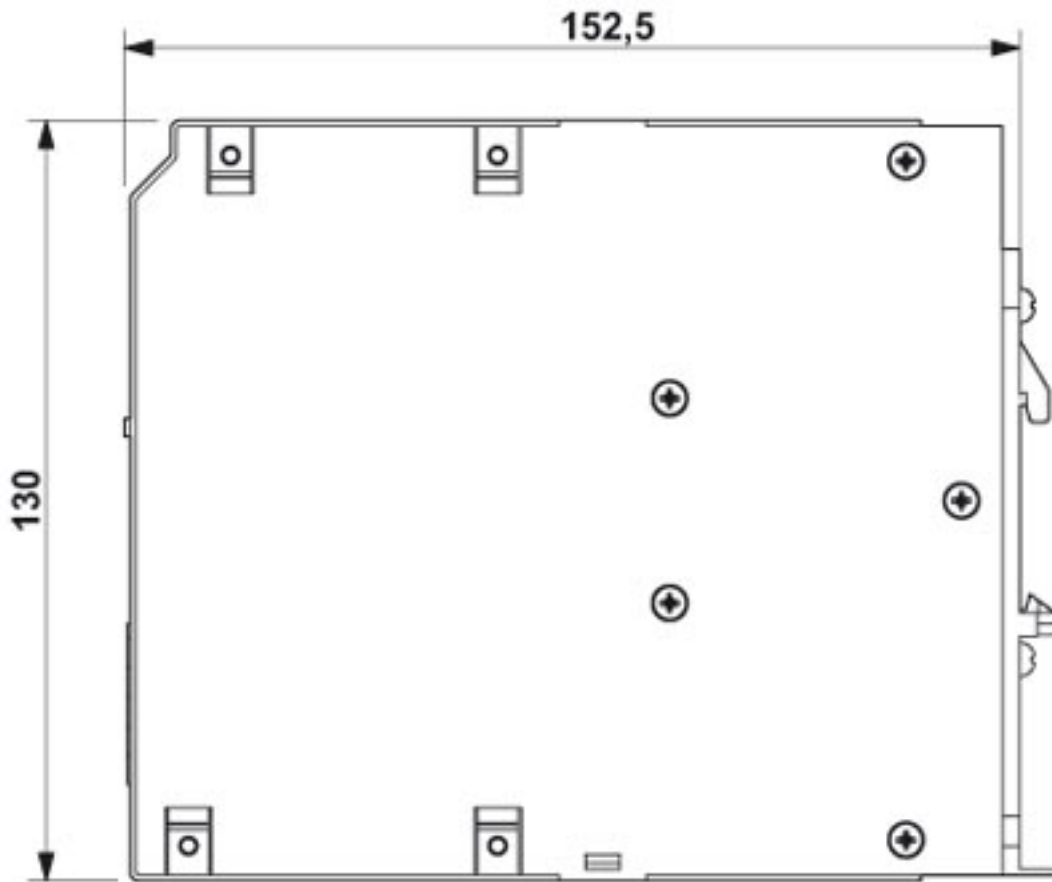
## Drawings

Block diagram



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Dimensioned drawing



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