

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

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Primary-switched TRIO POWER power supply for DIN rail mounting, input: 1-phase, output: 24 V DC/20 A

Product Description


TRIO POWER power supplies with standard functionality
 TRIO POWER is particularly suited to standard machine production, thanks to 1- and 3-phase versions up to 960 W. The wide-range input and the international approval package enable worldwide use.
 The robust metal housing, the high electric strength, and the wide temperature range ensure a high level of power supply reliability.

Your advantages

- 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

| | |
|--------------|---|
| Packing unit | 1 pc |
| GTIN |  4 046356 046664 |
| 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 : 2.5%/K) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |

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Ambient conditions

| | |
|--|-----------------------------------|
| Max. permissible relative humidity (operation) | ≤ 95 % (at 25 °C, non-condensing) |
| Climatic class | 3K3 (in acc. with EN 60721) |
| Degree of pollution | 2 |

Input data

| | |
|-------------------------------------|--|
| Nominal input voltage range | 100 V AC ... 240 V AC |
| Input voltage range | 85 V AC ... 264 V AC (Derating < 90 V AC: 2,5 %/V) |
| Dielectric strength maximum | 300 V AC |
| AC frequency range | 45 Hz ... 65 Hz |
| Discharge current to PE | < 3.5 mA |
| Current consumption | 4.6 A (120 V AC) 2.4 A (230 V AC) |
| Nominal power consumption | 533 VA |
| Inrush surge current | < 15 A |
| Mains buffering | > 13 ms (120 V AC) > 13 ms (230 V AC) |
| Input fuse | 10 A (slow-blow, internal) |
| Choice of suitable circuit breakers | 16 A (Characteristics B, C, D, K) |
| Power factor (cos phi) | 0.99 |
| Type of protection | Transient surge protection |
| Protective circuit/component | Varistor |

Output data

| | |
|---|--|
| Nominal output voltage | 24 V DC ±1 % |
| Setting range of the output voltage (U _{Set}) | 22.5 V DC ... 29.5 V DC (> 24 V DC, constant capacity restricted) |
| Nominal output current (I _N) | 20 A (U _{OUT} = 24 V DC) |
| Derating | 55 °C ... 70 °C (2.5%/K) |
| Connection in parallel | Yes, for redundancy and increased capacity |
| Connection in series | yes |
| Feedback resistance | 35 V DC |
| Protection against surge voltage on the output | < 35 V DC |
| Max. capacitive load | Unlimited |
| Active current limitation | Approx. 25 A (for short-circuit) |
| Control deviation | < 1 % (change in load, static 10 % ... 90 %) < 2 % (change in load, dynamic 10 % ... 90 %) < 0.1 % (change in input voltage ±10 %) |
| Residual ripple | < 10 mV _{PP} |
| Output power | 480 W |
| Typical response time | < 1 s |
| Peak switching voltages nominal load | < 80 mV _{PP} |
| Maximum power dissipation in no-load condition | 4 W |

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Output data

| | |
|------------------------------|------|
| 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) 2 kV AC (routine test) |
| Insulation voltage input / PE | 2 kV AC (type test) 2 kV AC (routine test) |
| Insulation voltage output / PE | 500 V DC (type test) |
| Protection class | I (with PE connection) |
| Degree of protection | IP20 |
| MTBF (IEC 61709, SN 29500) | > 915000 h |
| Mounting position | horizontal DIN rail NS 35, EN 60715 |
| Assembly instructions | alignable: horizontally 0 mm, vertically 50 mm |

Connection data, input

| | |
|---------------------------------------|---------------------|
| Connection method | Screw connection |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 2.5 mm ² |
| Conductor cross section flexible min. | 0.2 mm ² |
| Conductor cross section flexible max. | 2.5 mm ² |
| Conductor cross section AWG min. | 24 |
| Conductor cross section AWG max. | 14 |
| Stripping length | 9 mm |
| Screw thread | M2,5 |

Connection data, output

| | |
|---------------------------------------|---------------------|
| Connection method | Screw connection |
| Conductor cross section solid min. | 0.5 mm ² |
| Conductor cross section solid max. | 6 mm ² |
| Conductor cross section flexible min. | 0.5 mm ² |
| Conductor cross section flexible max. | 4 mm ² |
| Conductor cross section AWG min. | 20 |
| Conductor cross section AWG max. | 10 |
| Stripping length | 14 mm |
| Screw thread | M3 |

Signaling

| | |
|------------------------|--|
| Status display | "DC OK" LED green |
| Note on status display | U _{OUT} > 21.5 V: LED lights up |

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Standards and Regulations

| | |
|--|---|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU |
| Noise immunity | EN 61000-6-2:2005 |
| Connection in acc. with standard | CUL |
| Standards/regulations | EN 61000-4-2 |
| Contact discharge | 4 kV (Test Level 2) |
| Standards/regulations | EN 61000-4-3 |
| Frequency range | 80 MHz ... 1 GHz |
| Test field strength | 10 V/m |
| Frequency range | 1.4 GHz ... 2 GHz |
| Test field strength | 3 V/m |
| Standards/regulations | EN 61000-4-4 |
| Comments | Criterion B |
| Standards/regulations | EN 61000-6-3 |
| | EN 61000-4-6 |
| Frequency range | 0.15 MHz ... 80 MHz |
| Voltage | 10 V (Test Level 3) |
| Standards/regulations | EN 61000-4-11 |
| Low Voltage Directive | Conformance with LV directive 2006/95/EC |
| Standard - Electrical safety | EN 60950-1/VDE 0805 (SELV) |
| Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations | EN 50178/VDE 0160 (PELV) |
| Standard – Safety extra-low voltage | EN 60950-1 (SELV) |
| | EN 60204 (PELV) |
| Standard - Safe isolation | DIN VDE 0100-410 |
| Standard – Protection against shock currents, basic requirements for protective separation in electrical equipment | EN 50178 |
| Standard – Limitation of mains harmonic currents | EN 61000-3-2 |
| UL approvals | UL/C-UL listed UL 508 |
| | UL/C-UL Recognized UL 60950-1 |
| Shock | 18 ms, 30g, in each space direction (according to IEC 60068-2-27) |
| Vibration (operation) | < 15 Hz, amplitude ±2.5 mm (according to IEC 60068-2-6) |
| | 15 Hz ... 150 Hz, 2.3g, 90 min. |

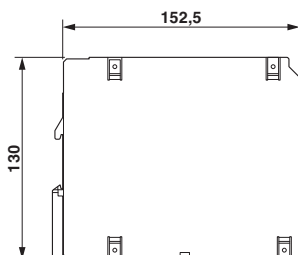
Environmental Product Compliance

| | |
|------------|---|
| China RoHS | Environmentally Friendly Use Period = 25; |
| | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

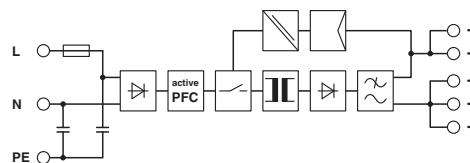
Drawings

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Dimensional drawing



Block diagram



Approvals

Approvals

Approvals

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

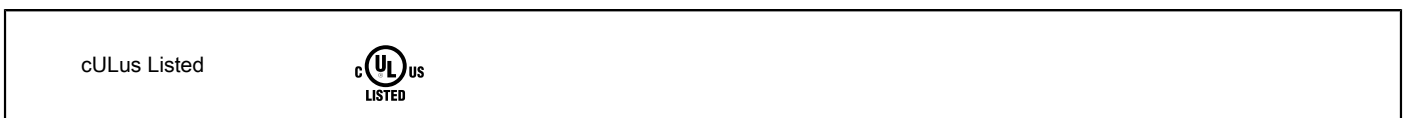
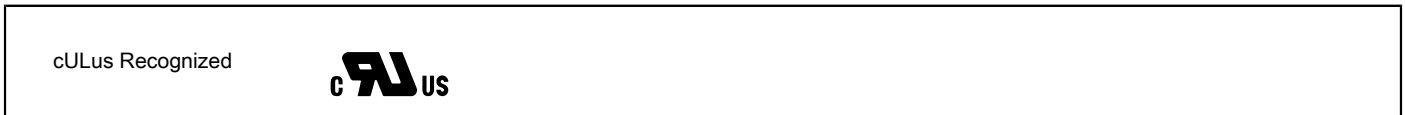
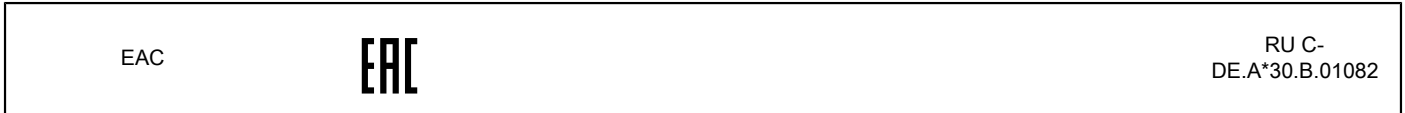
Ex Approvals

Approval details

| | | | |
|----------------|--|---|---------------|
| UL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 123528 |
| UL Recognized | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 211944 |
| cUL Recognized | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 211944 |
| cUL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 123528 |
| EAC | | | EAC-Zulassung |

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Approvals



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