

## Power supply unit - TRIO-PS-2G/1AC/24DC/10 - 2903149

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Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: single phase, output: 24 V DC/10 A

### Product Description

TRIO POWER power supplies with standard functionality

The TRIO POWER power supply range with push-in connection has been perfected for use in machine building. All functions and the space-saving design of the single and three-phase modules are optimally tailored to the stringent requirements. Under challenging ambient conditions, the power supply units, which feature an extremely robust electrical and mechanical design, ensure the reliable supply of all loads.

### Why buy this product

- ✓ Save time and costs, thanks to the Push-in connection and narrow design
- ✓ Increase system availability, thanks to dynamic boost with 150% of the nominal current for five seconds
- ✓ Maximum flexibility due to the wide temperature range from -25°C to +70°C and device startup at -40°C



### Key Commercial Data

|                                      |             |
|--------------------------------------|-------------|
| Packing unit                         | 1 STK       |
| Weight per Piece (excluding packing) | 1,320.000 g |
| Custom tariff number                 | 85044030    |
| Country of origin                    | China       |

### Technical data

#### Dimensions

|        |        |
|--------|--------|
| Width  | 42 mm  |
| Height | 130 mm |
| Depth  | 160 mm |

#### Ambient conditions

|                                 |                                              |
|---------------------------------|----------------------------------------------|
| Degree of protection            | IP20                                         |
| Ambient temperature (operation) | -25 °C ... 70 °C (> 60 °C Derating: 2,5 %/K) |

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### Ambient conditions

|                                                |                                       |
|------------------------------------------------|---------------------------------------|
| Ambient temperature (storage/transport)        | -40 °C ... 85 °C                      |
| Max. permissible relative humidity (operation) | ≤ 95 % (at 25 °C, non-condensing)     |
| Noise immunity                                 | EN 61000-6-2:2005                     |
| Maximum altitude                               | ≤ 5000 m (> 2000 m, observe derating) |

### Input data

|                                     |                                           |
|-------------------------------------|-------------------------------------------|
| Nominal input voltage range         | 100 V AC ... 240 V AC -15 % ... +10 %     |
|                                     | 110 V DC ... 250 V DC                     |
| Input voltage range                 | 85 V AC ... 264 V AC                      |
|                                     | 99 V DC ... 275 V DC                      |
| Dielectric strength maximum         | ≤ 300 V AC 15 s                           |
| AC frequency range                  | 50 Hz ... 60 Hz                           |
| Discharge current to PE             | ≤ 3.5 mA                                  |
| Current consumption                 | 3.1 A (100 V AC)                          |
|                                     | 1.4 A (240 V AC)                          |
| Inrush surge current                | ≤ 25 A (typical)                          |
| Power failure bypass                | > 15 ms (120 V AC)                        |
|                                     | > 15 ms (230 V AC)                        |
| Input fuse                          | 6.3 A (internal (device protection))      |
| Choice of suitable circuit breakers | 6 A ... 16 A (Characteristics B, C, D, K) |
| 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 ( $U_{Set}$ ) | 24 V DC ... 28 V DC (> 24 V DC, constant capacity restricted) |
| Nominal output current ( $I_N$ )                  | 10 A                                                          |
| Dynamic Boost ( $I_{Dyn.Boost}$ )                 | 15 A (5 s)                                                    |
| Derating                                          | > 60 °C ... 70 °C (2.5%/K)                                    |
| Connection in parallel                            | Yes, for redundancy and increased capacity                    |
| Connection in series                              | Yes                                                           |
| Control deviation                                 | < 1 % (change in load, static 10 % ... 90 %)                  |
|                                                   | < 3 % (Dynamic load change 10 % ... 90 %, 10 Hz)              |
|                                                   | < 0.1 % (change in input voltage ±10 %)                       |
| Residual ripple                                   | ≤ 10 mV <sub>PP</sub>                                         |
| Output power                                      | 240 W                                                         |
| Typical response time                             | < 1 s                                                         |
| Maximum power dissipation in no-load condition    | < 5.1 W                                                       |

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## Technical data

### General

|                                 |                                                                                           |
|---------------------------------|-------------------------------------------------------------------------------------------|
| Net weight                      | 1 kg                                                                                      |
| Efficiency                      | > 91 % (for 230 V AC and nominal values)                                                  |
| Insulation voltage input/output | 4 kV AC (type test)                                                                       |
|                                 | 1.5 kV AC (routine test)                                                                  |
| Protection class                | I (in closed control cabinet)                                                             |
| MTBF (IEC 61709, SN 29500)      | > 1800000 h (25 °C)                                                                       |
|                                 | > 1000000 h (40 °C)                                                                       |
|                                 | > 480000 h (60 °C)                                                                        |
| Mounting position               | horizontal DIN rail NS 35, EN 60715                                                       |
| Assembly instructions           | Can be aligned: Horizontally 0 mm ( $\leq 40$ °C) 10 mm ( $\leq 70$ °C), vertically 50 mm |

### Connection data, input

|                                       |                     |
|---------------------------------------|---------------------|
| Connection method                     | Push-in connection  |
| Conductor cross section solid min.    | 0.2 mm <sup>2</sup> |
| Conductor cross section solid max.    | 4 mm <sup>2</sup>   |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup> |
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup> |
| Conductor cross section AWG min.      | 24                  |
| Conductor cross section AWG max.      | 12                  |
| Stripping length                      | 10 mm               |

### Connection data, output

|                                       |                     |
|---------------------------------------|---------------------|
| Connection method                     | Push-in connection  |
| Conductor cross section solid min.    | 0.2 mm <sup>2</sup> |
| Conductor cross section solid max.    | 4 mm <sup>2</sup>   |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup> |
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup> |
| Conductor cross section AWG min.      | 24                  |
| Conductor cross section AWG max.      | 12                  |
| Stripping length                      | 8 mm                |

### Connection data for signaling

|                                       |                     |
|---------------------------------------|---------------------|
| Connection method                     | Push-in connection  |
| Conductor cross section solid min.    | 0.2 mm <sup>2</sup> |
| Conductor cross section solid max.    | 1.5 mm <sup>2</sup> |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup> |
| Conductor cross section flexible max. | 1.5 mm <sup>2</sup> |
| Conductor cross section AWG min.      | 24                  |

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## Technical data

### Connection data for signaling

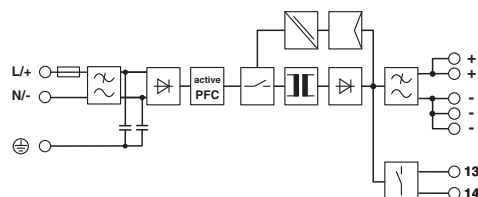
|                                  |      |
|----------------------------------|------|
| Conductor cross section AWG max. | 16   |
| Stripping length                 | 8 mm |

### Standards and Regulations

|                                                                                                                                  |                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Electromagnetic compatibility                                                                                                    | Conformance with EMC Directive 2004/108/EC                        |
| Shock                                                                                                                            | 18 ms, 30g, in each space direction (according to IEC 60068-2-27) |
| Noise emission                                                                                                                   | EN 55011 (EN 55022)                                               |
| Noise immunity                                                                                                                   | EN 61000-6-2:2005                                                 |
| Standards/regulations                                                                                                            | EN 61000-4-2                                                      |
|                                                                                                                                  | EN 61000-4-3                                                      |
|                                                                                                                                  | EN 61000-4-4                                                      |
|                                                                                                                                  | EN 61000-4-5                                                      |
|                                                                                                                                  | EN 61000-4-6                                                      |
| Standard - Safety of transformers                                                                                                | EN 61558-2-16 (air clearances and creepage distances only)        |
| Standard - Electrical safety                                                                                                     | IEC 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                                                                                              | IEC 60950-1 (SELV) and EN 60204-1 (PELV)                          |
| Standard - Safe isolation                                                                                                        | DIN VDE 0100-410                                                  |
| Standard – Limitation of mains harmonic currents                                                                                 | EN 61000-3-2                                                      |
| UL approvals                                                                                                                     | UL Listed UL 508                                                  |
|                                                                                                                                  | UL/C-UL Recognized UL 60950-1                                     |
| Vibration (operation)                                                                                                            | < 15 Hz, amplitude $\pm 2.5$ mm (according to IEC 60068-2-6)      |
|                                                                                                                                  | 15 Hz ... 150 Hz, 4g, 90 min.                                     |
| Low Voltage Directive                                                                                                            | Conformance with LV directive 2006/95/EC                          |
| Rail applications                                                                                                                | EN 50121-4                                                        |

## Drawings

Block diagram



## Power supply unit - TRIO-PS-2G/1AC/24DC/10 - 2903149

### 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 |
| eCl@ss 9.0 | 27040701 |

#### ETIM

|          |          |
|----------|----------|
| ETIM 4.0 | EC002540 |
| ETIM 5.0 | EC002540 |

### Approvals

#### Approvals

#### Approvals

UL Recognized / UL Listed / cUL Recognized / cUL Listed / EAC / IECEE CB Scheme / cULus Recognized / cULus Listed

#### Ex Approvals

#### Approval details

|                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UL Recognized  <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> FILE E 211944 |
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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UL Listed  <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> FILE E 123528 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cUL Recognized  <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> FILE E 211944 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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### Approvals

cUL Listed  <http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm> FILE E 123528

EAC 7500651.22.01.00242

IECEE CB Scheme  <http://www.iecee.org/DK-45300-A1-UL>

cULus Recognized  <http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

cULus Listed 

### Accessories

#### Accessories

##### Device circuit breakers

Electronic device circuit breaker - CBM E4 24DC/0.5-10A NO-R - 2905743



Multi-channel, electronic device circuit breaker with active current limitation for protecting four loads at 24 V DC in the event of overload and short circuit. With nominal current assistant and electronic locking of the set nominal currents. For installation on DIN rails.

Electronic device circuit breaker - CBM E8 24DC/0.5-10A NO-R - 2905744



Multi-channel, electronic device circuit breaker with active current limitation for protecting eight loads at 24 V DC in the event of overload and short circuit. With nominal current assistant and electronic locking of the set nominal currents. For installation on DIN rails.

### Potential distributor

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### Accessories

Potential distributors - VIP-2/SC/PDM-2/24 - 2315269



VARIOFACE module, with two equipotential busbars (P1, P2) for potential distribution, for mounting on NS 35 rails.  
Module width: 70.4 mm

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Potential distributors - VIP-3/PT/PDM-2/24 - 2903798



VARIOFACE module with push-in connection and two equipotential busbars (P1, P2) for potential distribution, for mounting on NS 35 rails. Module width: 57.1 mm