

## 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
- ✓ Rugged design



### Key Commercial Data

|                                      |                                                                                                         |
|--------------------------------------|---------------------------------------------------------------------------------------------------------|
| Packing unit                         | 1 STK                                                                                                   |
| GTIN                                 | <br>4 046356 960854 |
| GTIN                                 | 4046356960854                                                                                           |
| Weight per Piece (excluding packing) | 1,199.200 g                                                                                             |
| Weight per piece (including packing) | 1,209.500 g                                                                                             |
| Custom tariff number                 | 85044030                                                                                                |
| Country of origin                    | China                                                                                                   |

### Technical data

#### Dimensions

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

#### Ambient conditions

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

## Technical data

### Ambient conditions

|                                                |                                              |
|------------------------------------------------|----------------------------------------------|
| Degree of protection                           | IP20                                         |
| Ambient temperature (operation)                | -25 °C ... 70 °C (> 60 °C Derating: 2.5 %/K) |
| Ambient temperature (start-up type tested)     | -40 °C                                       |
| Ambient temperature (storage/transport)        | -40 °C ... 85 °C                             |
| Max. permissible relative humidity (operation) | ≤ 95 % (at 25 °C, non-condensing)            |
| Climatic class                                 | 3K3 (in acc. with EN 60721)                  |
| Degree of pollution                            | 2                                            |
| Installation height                            | ≤ 5000 m (> 2000 m, Derating: 10 %/1000 m)   |

### Input data

|                                     |                                           |
|-------------------------------------|-------------------------------------------|
| Nominal input voltage range         | 100 V AC ... 240 V AC                     |
|                                     | 110 V DC ... 250 V DC                     |
| Input voltage range                 | 100 V AC ... 240 V AC -15 % ... +10 %     |
|                                     | 110 V DC ... 250 V DC -10 % ... +10 %     |
| Dielectric strength maximum         | 300 V AC 15 s                             |
| AC frequency range                  | 50 Hz ... 60 Hz ±10 %                     |
| Discharge current to PE             | < 3.5 mA                                  |
| Current consumption                 | 3.1 A (100 V AC)                          |
|                                     | 2.4 A (120 V AC)                          |
|                                     | 1.3 A (230 V AC)                          |
|                                     | 1.4 A (240 V AC)                          |
| Nominal power consumption           | 265 W                                     |
| Inrush surge current                | ≤ 25 A                                    |
| Mains buffering                     | > 15 ms (120 V AC)                        |
|                                     | > 20 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 (constant capacity)          |
| 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                                              |
| Feedback resistance                               | ≤ 35 V DC                                        |
| Protection against surge voltage on the output    | ≤ 30 V DC                                        |
| Control deviation                                 | < 1 % (change in load, static 10 % ... 90 %)     |
|                                                   | < 3 % (Dynamic load change 10 % ... 90 %, 10 Hz) |

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## Technical data

### Output data

|                                                |                                              |
|------------------------------------------------|----------------------------------------------|
|                                                | < 0.1 % (change in input voltage $\pm 10$ %) |
| Residual ripple                                | < 10 mV <sub>PP</sub> (with nominal values)  |
| Output power                                   | 240 W                                        |
| Typical response time                          | < 1 s                                        |
| Maximum power dissipation in no-load condition | < 5.1 W (230 V)                              |
| Power loss nominal load max.                   | < 25 W                                       |

### General

|                                 |                                                                                      |
|---------------------------------|--------------------------------------------------------------------------------------|
| Net weight                      | 1 kg                                                                                 |
| Efficiency                      | > 91 % (for 230 V AC and nominal values)                                             |
| Insulation voltage input/output | 3 kV AC (type test)                                                                  |
|                                 | 1.5 kV AC (routine test)                                                             |
| Protection class                | I (in closed control cabinet)                                                        |
| Degree of protection            | IP20                                                                                 |
| 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           | alignable: 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> |

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## Technical data

### Connection data for signaling

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

### Standards and Regulations

|                                                                                                                                  |                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Electromagnetic compatibility                                                                                                    | Conformance with EMC Directive 2014/30/EU                         |
| Noise emission                                                                                                                   | EN 55011 (EN 55022)                                               |
| Noise immunity                                                                                                                   | EN 61000-6-2:2005                                                 |
| 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 (Test Level 3)                                             |
| Frequency range                                                                                                                  | 1.4 GHz ... 2 GHz                                                 |
| Test field strength                                                                                                              | 3 V/m (Test Level 2)                                              |
| Standards/regulations                                                                                                            | EN 61000-4-4                                                      |
| Comments                                                                                                                         | Criterion B                                                       |
| Standards/regulations                                                                                                            | EN 61000-4-5                                                      |
| Signal                                                                                                                           | 1 kV (Test Level 2 - asymmetrical)                                |
| Standards/regulations                                                                                                            | EN 61000-6-3                                                      |
|                                                                                                                                  | EN 61000-4-6                                                      |
| Frequency range                                                                                                                  | 0.15 MHz ... 80 MHz                                               |
| Voltage                                                                                                                          | 10 V (Test Level 3)                                               |
| Low Voltage Directive                                                                                                            | Conformance with LV directive 2006/95/EC                          |
| 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                                     |
| 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, 4g, 90 min.                                     |
| Rail applications                                                                                                                | EN 50121-4                                                        |

### Environmental Product Compliance

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

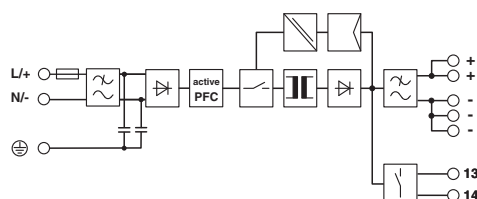
## Technical data

### Environmental Product Compliance

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

## Drawings

Block diagram



## 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 |
| ETIM 6.0 | EC002540 |

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 13.2 | 39121004 |
|-------------|----------|

## Approvals

### Approvals

#### Approvals

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

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

### Approvals

Ex Approvals

UL Listed / cUL Listed / cULus Listed

#### 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            |
| 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            |
| 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            |
| cUL 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            |
| EAC              |  |                                                                                                                                                       | RU C-<br>DE.A*30.B.01082 |
| IECEE CB Scheme  |  | <a href="http://www.iecee.org/">http://www.iecee.org/</a>                                                                                             | DK-45300-A1-UL           |
| cULus 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> |                          |
| cULus Listed     |                                                                                     |                                                                                                                                                       |                          |

### Accessories

Accessories

Device circuit breakers

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

### Accessories

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.

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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.

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Electronic device circuit breaker - CBMC E4 24DC/1-4A NO - 2906031



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

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Electronic device circuit breaker - CBMC E4 24DC/1-10A NO - 2906032



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

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### Device protection

Type 3 surge protection device - PLT-SEC-T3-230-FM-PT - 2907928



Type 2/3 surge protection, consisting of protective plug and base element, with integrated status indicator and remote signaling for single-phase power supply networks. Nominal voltage 230 V AC/DC.

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### Accessories

Type 3 surge protection device - PLT-SEC-T3-24-FM-PT - 2907925



Type 3 surge protection, consisting of protective plug and base element, with integrated status indicator and remote signaling for single-phase power supply networks. Nominal voltage 24 V AC/DC.

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### Potential distributor

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