

## Power supply unit - TRIO-PS-2G/1AC/48DC/10 - 2903160

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Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: single phase, output: 48 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
- ✓ Electrically robust, thanks to high electric strength
- ✓ Mechanically robust, thanks to high vibration and shock resistance



### Key Commercial Data

|              |                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------|
| Packing unit | 1 STK                                                                                                   |
| GTIN         | <br>4 055626 255415 |
| GTIN         | 4055626255415                                                                                           |

### Technical data

#### Dimensions

|        |        |
|--------|--------|
| Width  | 68 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) |
| Ambient temperature (start-up type tested) | -40 °C                                       |

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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)          |
| 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 %      |
|                                     | 99 V DC ... 275 V DC                       |
| 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                 | 5.6 A (100 V AC)                           |
|                                     | 5.4 A (120 V AC)                           |
|                                     | 2.6 A (230 V AC)                           |
|                                     | 2.4 A (240 V AC)                           |
| Nominal power consumption           | 604.7 VA                                   |
| Inrush surge current                | 20 A (at 25 °C)                            |
| Mains buffering                     | > 10 ms (120 V AC)                         |
|                                     | > 15 ms (230 V AC)                         |
| Input fuse                          | 10 A (internal (device protection))        |
| Choice of suitable circuit breakers | 10 A ... 16 A (Characteristics B, C, D, K) |
| Type of protection                  | Transient surge protection                 |
| Protective circuit/component        | Varistor                                   |

### Output data

|                                                   |                                                               |
|---------------------------------------------------|---------------------------------------------------------------|
| Nominal output voltage                            | 48 V DC ±1 %                                                  |
| Setting range of the output voltage ( $U_{Set}$ ) | 36 V DC ... 55 V DC (> 48 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                                                           |
| Feedback resistance                               | ≤ 60 V DC                                                     |
| Protection against surge voltage on the output    | ≤ 60 V DC                                                     |
| 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                                   | < 50 mV <sub>PP</sub> (with nominal values)                   |

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### Output data

|                                                |                         |
|------------------------------------------------|-------------------------|
| Output power                                   | 480 W                   |
| Typical response time                          | < 1 s                   |
| Peak switching voltages nominal load           | < 1000 mV <sub>pp</sub> |
| Maximum power dissipation in no-load condition | < 5.7 W (230 V)         |
| Power loss nominal load max.                   | < 44 W                  |

### General

|                                 |                                                                                      |
|---------------------------------|--------------------------------------------------------------------------------------|
| Net weight                      | 1.4 kg                                                                               |
| Efficiency                      | > 93 % (for 230 V AC and nominal values)                                             |
| Insulation voltage input/output | 3 kV AC                                                                              |
|                                 | 1.5 kV AC                                                                            |
| Protection class                | I (in closed control cabinet)                                                        |
| Degree of protection            | IP20                                                                                 |
| MTBF (IEC 61709, SN 29500)      | > 1800000 h (25 °C)                                                                  |
|                                 | > 800000 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.    | 10 mm <sup>2</sup>  |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup> |
| Conductor cross section flexible max. | 6 mm <sup>2</sup>   |
| Conductor cross section AWG min.      | 24                  |
| Conductor cross section AWG max.      | 8                   |
| Stripping length                      | 15 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> |

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## Technical data

### Connection data for signaling

|                                       |                     |
|---------------------------------------|---------------------|
| 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 Low Voltage Directive 2014/35/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

|            |                                           |
|------------|-------------------------------------------|
| China RoHS | Environmentally Friendly Use Period = 25; |
|------------|-------------------------------------------|

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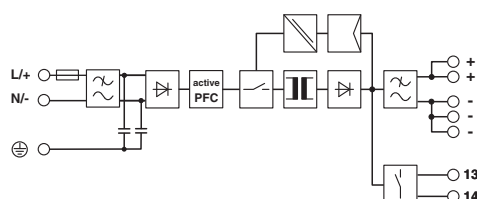
## Technical data

### Environmental Product Compliance

|  |                                                                                                     |
|--|-----------------------------------------------------------------------------------------------------|
|  | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |
|--|-----------------------------------------------------------------------------------------------------|

## Drawings

Block diagram



## Approvals

### Approvals

#### Approvals

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

#### 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 |
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### Approvals

EAC



RU C-  
DE.A\*30.B.01082

cULus Recognized



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

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PHOENIX CONTACT GmbH & Co. KG  
Flachsmarktstr. 8  
32825 Blomberg  
Germany  
Tel. +49 5235 300  
Fax +49 5235 3 41200  
<http://www.phoenixcontact.com>