

TRIO-PS-2G/1AC/24DC/3/C2LPS - Power supply unit



2903147

<https://www.phoenixcontact.com/in/products/2903147>

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Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: 1-phase, output: 24 V DC/3 A C2LPS

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.

Your advantages

- 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

Commercial Data

| | |
|--------------------------------------|---------------------|
| Item number | 2903147 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales Key | CMP |
| Product Key | CMPO13 |
| Catalog Page | Page 254 (C-4-2019) |
| GTIN | 4046356959445 |
| Weight per Piece (including packing) | 363.8 g |
| Weight per Piece (excluding packing) | 328 g |
| Customs tariff number | 85044083 |
| Country of origin | CN |

Technical Data

Input data

AC operation

| | |
|--|---|
| Network type | Star network |
| Nominal input voltage range | 100 V AC ... 240 V AC |
| Input voltage range | 100 V AC ... 240 V AC -15 % ... +10 % |
| Input voltage range AC | 85 V AC ... 264 V AC |
| Electric strength, max. | ≤ 300 V AC 15 s |
| Typical national grid voltage | 120 V AC |
| | 230 V AC |
| Voltage type of supply voltage | AC/DC |
| Inrush current | ≤ 15 A (typical) |
| Inrush current integral (I^2t) | < 0.26 A ² s |
| Inrush current limitation | typ. 15 A (after 1 ms) |
| AC frequency range | 50 Hz ... 60 Hz ±10 % |
| Mains buffering time | typ. 10 ms (120 V AC) |
| | typ. 20 ms (230 V AC) |
| Current consumption | 1.4 A (100 V AC) |
| | 1 A (120 V AC) |
| | 0.6 A (230 V AC) |
| | 0.7 A (240 V AC) |
| Nominal power consumption | 157.7 VA |
| Protective circuit | Transient surge protection; Varistor |
| Power factor (cos phi) | 0.52 |
| Typical response time | < 1 s |
| Input fuse | 6.3 A (internal (device protection)) |
| Recommended breaker for input protection | 6 A ... 16 A (Characteristics B, C, D, K) |
| Discharge current to PE | < 0.25 mA |

DC operation

| | |
|--------------------------------|-----------------------|
| Nominal input voltage range | 110 V DC ... 250 V DC |
| Input voltage range | 99 V DC ... 275 V DC |
| Voltage type of supply voltage | AC/DC |
| Mains buffering time | > 20 ms (230 V AC) |
| Current consumption | 0.8 A (110 V DC) |
| | 0.3 A (250 V DC) |

Output data

| | |
|---|---|
| Efficiency | > 89 % (for 230 V AC and nominal values) |
| Output characteristic | U/I with dynamic load reserve |
| 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) |

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| | |
|--|--|
| Nominal output current (I_N) | 3 A |
| Dynamic Boost ($I_{Dyn.Boost}$) | 4.5 A (1 s) |
| Derating | > 60 °C ... 70 °C (2.5%/K) |
| Feedback voltage resistance | ≤ 35 V DC |
| Protection against overvoltage at the output (OVP) | ≤ 30 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 _{PP} (with nominal values) |
| Output power | 72 W |
| | 108 W (1 s) |
| Maximum no-load power dissipation | < 1 W |
| Power loss nominal load max. | < 10 W |
| Rise time | ≤ 15 ms (U_{OUT} (10 % ... 90 %)) |
| Connection in parallel | yes, for redundancy and increased capacity |
| Connection in series | yes |

Signal: DC OK

| | |
|---------------------------|------------|
| Maximum switching voltage | 30 V AC/DC |
| Continuous load current | 100 mA |

Connection data

Input

| | |
|---------------------------------------|---------------------|
| Connection method | Push-in connection |
| Conductor cross section, rigid min. | 0.2 mm ² |
| Conductor cross section, rigid max. | 4 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. | 12 |
| Stripping length | 10 mm |

Output

| | |
|---------------------------------------|---------------------|
| Connection method | Push-in connection |
| Conductor cross section, rigid min. | 0.2 mm ² |
| Conductor cross section, rigid max. | 4 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. | 12 |
| Stripping length | 8 mm |

Signal

| | |
|-------------------------------------|---------------------|
| Connection method | Push-in connection |
| Conductor cross section, rigid min. | 0.2 mm ² |

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| | |
|---------------------------------------|---------------------|
| Conductor cross section, rigid max. | 1.5 mm ² |
| Conductor cross section flexible min. | 0.2 mm ² |
| Conductor cross section flexible max. | 1.5 mm ² |
| Conductor cross section AWG min. | 24 |
| Conductor cross section AWG max. | 16 |
| Stripping length | 8 mm |

Signaling

| | |
|--------------------|-------------------------|
| Types of signaling | LED |
| | Floating signal contact |

Signal output: LED status indicator

| | |
|---------------------------|-------------|
| Signalization designation | DC OK |
| Status display | "DC OK" LED |
| Color | green |

Electrical properties

| | |
|---------------------------------|--------------------------|
| Number of phases | 1.00 |
| Insulation voltage input/output | 3 kV AC (type test) |
| | 1.5 kV AC (routine test) |

Product properties

| | |
|----------------------------|---------------------|
| Product type | Power supply |
| Product family | TRIO POWER |
| MTBF (IEC 61709, SN 29500) | > 3500000 h (25 °C) |
| | > 2000000 h (40 °C) |
| | > 930000 h (60 °C) |

Insulation characteristics

| | |
|---------------------|--------------------------------|
| Protection class | II (in closed control cabinet) |
| Degree of pollution | 2 |

Dimensions

| | |
|--------|--------|
| Width | 30 mm |
| Height | 130 mm |
| Depth | 115 mm |

Installation dimensions

| | |
|----------------------------------|---------------|
| Installation distance right/left | 0 mm / 0 mm |
| Installation distance top/bottom | 50 mm / 50 mm |

Mounting

| | |
|-----------------------|--|
| Mounting type | DIN rail mounting |
| Assembly instructions | alignable: horizontally 0 mm (≤ 40 °C) 10 mm (≤ 70 °C), vertically 50 mm |
| Mounting position | horizontal DIN rail NS 35, EN 60715 |

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| | |
|-------------------------|----|
| With protective coating | No |
|-------------------------|----|

Material specifications

| | |
|--|---------------|
| Flammability rating according to UL 94 (housing / terminal blocks) | V0 |
| Housing material | Plastic |
| Type of housing | Polycarbonate |
| Hood version | Polycarbonate |

Environmental and real-life conditions

Ambient conditions

| | |
|--|--|
| Degree of protection | IP20 |
| Ambient temperature (operation) | -25 °C ... 70 °C (> 60 °C Derating: 2,5 %/K) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Ambient temperature (start-up type tested) | -25 °C |
| Maximum altitude | ≤ 5000 m (> 2000 m, observe derating) |
| Climatic class | 3K3 (in acc. with EN 60721) |
| Max. permissible relative humidity (operation) | ≤ 95 % (at 25 °C, non-condensing) |
| 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. |

Standards and regulations

| | |
|--|--|
| Rail applications | EN 50121-4 |
| Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations | EN 50178/VDE 0160 (PELV) |
| Standard – Limitation of mains harmonic currents | EN 61000-3-2 |
| Standard - Electrical safety | IEC 62368-1 (SELV) |
| Standard – Safety extra-low voltage | IEC 62368-1 (SELV) und EN 60204-1 (PELV) |
| Standard - Safe isolation | DIN VDE 0100-410 |
| Standard - Safety of transformers | EN 61558-2-16 (air clearances and creepage distances only) |

Approvals

| | |
|--------------|-------------------------------|
| UL approvals | UL Listed UL 508 |
| | UL/C-UL Recognized UL 60950-1 |
| | NEC Class 2 as per UL 1310 |

Conformity/Approvals

| | |
|----------------------------------|---|
| SIL in accordance with IEC 61508 | 0 |
|----------------------------------|---|

EMC data

| | |
|-------------------------------------|---|
| Low Voltage Directive | Conformance with Low Voltage Directive 2014/35/EC |
| EMC requirements for noise emission | EN 61000-6-3 |
| | EN 61000-6-4 |

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| | |
|-------------------------------------|---|
| EMC requirements for noise immunity | EN 61000-6-1 |
| | EN 61000-6-2 |
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU |
| Noise emission | EN 55011 (EN 55022) |

Electrostatic discharge

| | |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-2 |
|-----------------------|--------------|

Electrostatic discharge

| | |
|-------------------|---------------------|
| Contact discharge | 6 kV (Test Level 4) |
| Discharge in air | 8 kV (Test Level 4) |
| Comments | Criterion A |

Electromagnetic HF field

| | |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-3 |
|-----------------------|--------------|

Electromagnetic HF field

| | |
|---------------------|-----------------------|
| Frequency range | 80 MHz ... 1 GHz |
| Test field strength | 10 V/m (Test Level 3) |
| Frequency range | 1 GHz ... 2 GHz |
| Test field strength | 10 V/m (Test Level 3) |
| Frequency range | 2 GHz ... 3 GHz |
| Test field strength | 10 V/m (Test Level 3) |
| Comments | Criterion A |

Fast transients (burst)

| | |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-4 |
|-----------------------|--------------|

Fast transients (burst)

| | |
|----------|------------------------------------|
| Input | 4 kV (Test Level 4 - asymmetrical) |
| Output | 2 kV (Test Level 3 - asymmetrical) |
| Signal | 1 kV (Test Level 2 - asymmetrical) |
| Comments | Criterion A |

Surge voltage load (surge)

| | |
|-----------------------|------------------------------------|
| Standards/regulations | EN 61000-4-5 |
| Input | 3 kV (Test Level 3 - symmetrical) |
| | 6 kV (Test Level 4 - asymmetrical) |
| Output | 1 kV (Test Level 2 - symmetrical) |
| | 2 kV (Test Level 1 - asymmetrical) |
| Signal | 1 kV (Test Level 2 - asymmetrical) |
| Comments | Criterion B |

Conducted interference

| | |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-6 |
|-----------------------|--------------|

Conducted interference

| | |
|--------------|--------------|
| Input/Output | asymmetrical |
|--------------|--------------|

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| | |
|-----------------|---------------------|
| Frequency range | 0.15 MHz ... 80 MHz |
| Comments | Criterion A |
| Voltage | 10 V (Test Level 3) |

Emitted interference

| | |
|--|--|
| Standards/regulations | EN 61000-6-3 |
| Radio interference voltage in acc. with EN 55011 | EN 55011 (EN 55022) Class B, area of application: Industry and residential |
| Emitted radio interference in acc. with EN 55011 | EN 55011 (EN 55022) Class B, area of application: Industry and residential |

Criteria

| | |
|-------------|--|
| Criterion A | Normal operating behavior within the specified limits. |
| Criterion B | Temporary impairment to operational behavior that is corrected by the device itself. |

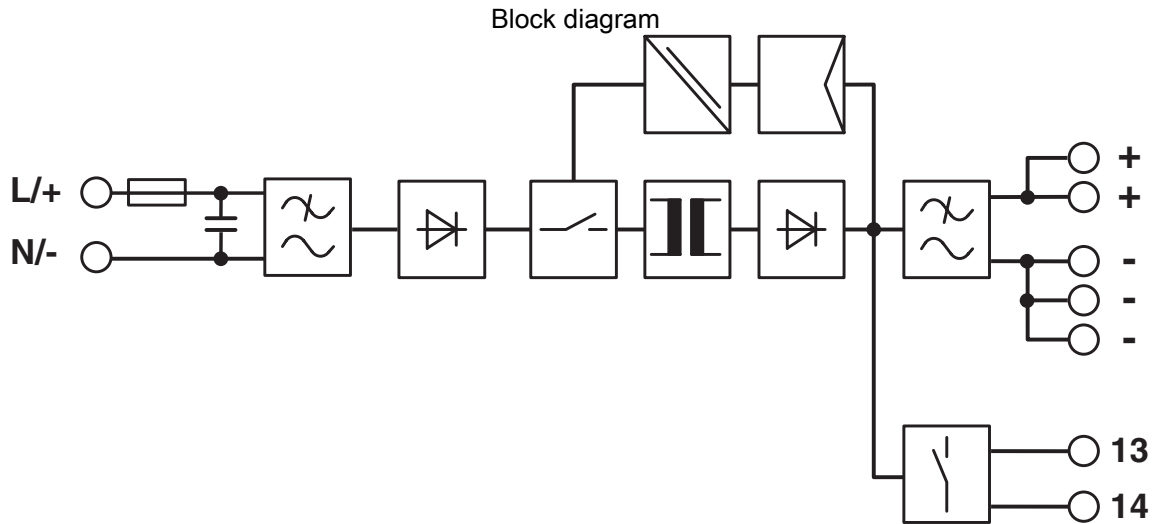
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Drawings



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Approvals



cUL Recognized
Approval ID: FILE E 211944



UL Recognized
Approval ID: FILE E 211944



IECEE CB Scheme
Approval ID: DK-44782-A1-M1-UL



EAC
Approval ID: RU S-DE.BL08.W.00764



UL Listed
Approval ID: FILE E 123528



cUL Listed
Approval ID: FILE E 123528



cUL Listed
Approval ID: FILE E 199827



UL Listed
Approval ID: FILE E 199827

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-11.0 | 27040701 |
| ECLASS-12.0 | 27040701 |
| ECLASS-13.0 | 27040701 |

ETIM

| | |
|----------|----------|
| ETIM 8.0 | EC002540 |
|----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 39121000 |
|-------------|----------|

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Environmental Product Compliance

| | |
|------------|--|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally Friendly Use Period = 25; |
| | For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads" |

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Accessories

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

2905743

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Multi-channel, electronic 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.

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

2905744

<https://www.phoenixcontact.com/in/products/2905744>



Multi-channel, electronic 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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VIP-2/SC/PDM-2/24 - Potential distributors

2315269

<https://www.phoenixcontact.com/in/products/2315269>



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

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

2903798

<https://www.phoenixcontact.com/in/products/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

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

2907928

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

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

2907925

<https://www.phoenixcontact.com/in/products/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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