

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



2866381

<https://www.phoenixcontact.com/us/products/2866381>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



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
- Rugged design with metal housing and wide temperature range from -25 to +70°C
- 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
- Compensation of voltage drops by means of output voltage that can be adjusted on the front

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2866381 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | CM11 |
| Product key | CMPT13 |
| GTIN | 4046356046664 |
| Weight per piece (including packing) | 2,354 g |
| Weight per piece (excluding packing) | 2,084 g |
| Customs tariff number | 85044095 |
| Country of origin | CN |

Technical data

Input data

AC operation

| | |
|--|--|
| 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) |
| Derating | < 90 V AC (2.5 %/V) |
| Input voltage range AC | 85 V AC ... 264 V AC (Derating < 90 V AC: 2,5 %/V) |
| Electric strength, max. | 300 V AC |
| Voltage type of supply voltage | AC |
| Inrush current | < 15 A |
| Inrush current integral (I^2t) | 1.4 A ² s |
| AC frequency range | 45 Hz ... 65 Hz |
| Mains buffering time | > 13 ms (120 V AC) > 13 ms (230 V AC) |
| Current consumption | 4.6 A (120 V AC) 2.4 A (230 V AC) |
| Nominal power consumption | 533 VA |
| Protective circuit | Transient surge protection; Varistor |
| Power factor (cos phi) | 0.99 |
| Typical response time | < 1 s |
| Input fuse | 10 A (slow-blow, internal) |
| Permissible backup fuse | B16 |
| Recommended breaker for input protection | 16 A (Characteristics B, C, D, K) |
| Discharge current to PE | < 3.5 mA |

Output data

| | |
|--|---|
| Efficiency | 91 % (for 230 V AC and nominal values) |
| Output characteristic | U/I |
| Nominal output voltage | 24 V DC \pm 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) |
| Feedback voltage resistance | 35 V DC |
| Protection against overvoltage at the output (OVP) | < 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 \pm 10 %) |
| Residual ripple | < 10 mV _{PP} |
| Output power | 480 W |
| Peak switching voltages nominal load | < 80 mV _{PP} |

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



2866381

<https://www.phoenixcontact.com/us/products/2866381>

| | |
|-----------------------------------|--|
| Maximum no-load power dissipation | 4 W |
| Power loss nominal load max. | 46 W |
| Rise time | < 2 ms (U_{OUT} (10 % ... 90 %)) |
| Connection in parallel | yes, for redundancy and increased capacity |
| Connection in series | yes |

Connection data

Input

| | |
|---------------------------------------|---------------------|
| Connection method | Screw connection |
| Conductor cross-section, rigid min. | 0.2 mm ² |
| Conductor cross-section, rigid 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 |
| Tightening torque, min | 0.4 Nm |
| Tightening torque max | 0.5 Nm |

Output

| | |
|---------------------------------------|---------------------|
| Connection method | Screw connection |
| Conductor cross-section, rigid min. | 0.5 mm ² |
| Conductor cross-section, rigid 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 |
| Tightening torque, min | 0.5 Nm |
| Tightening torque max | 0.6 Nm |

Signaling

| | |
|---------------------------|-----------|
| Types of signaling | LED |
| Operating voltage display | Green LED |

Signal output

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

Electrical properties

| | |
|---------------------------------|------------------------|
| Insulation voltage input/output | 4 kV AC (type test) |
| | 2 kV AC (routine test) |
| Insulation voltage output / PE | 500 V DC (type test) |

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



2866381

<https://www.phoenixcontact.com/us/products/2866381>

| | |
|--|------------------------|
| Insulation voltage input/output | 2 kV (routine test) |
| Insulation voltage input / PE | 2 kV AC (type test) |
| | 2 kV AC (routine test) |
| Insulation voltage input, output / housing | 4 kV (type test) |

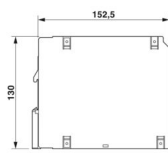
Product properties

| | |
|----------------------------|--------------|
| Product type | Power supply |
| Product family | TRIO POWER |
| MTBF (IEC 61709, SN 29500) | > 915000 h |

Insulation characteristics

| | |
|----------------------|------------------------|
| Protection class | I (with PE connection) |
| Overvoltage category | III |
| Degree of pollution | 2 |

Dimensions

| | |
|---------------------|---|
| Dimensional drawing |  |
| Width | 115 mm |
| Height | 130 mm |
| Depth | 152.5 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 note | alignable: horizontally 0 mm, vertically 50 mm |
| Mounting position | horizontal DIN rail NS 35, EN 60715 |
| With protective coating | no |

Material specifications

| | |
|----------------------|--------------------------|
| Housing material | Metal |
| Type of housing | Steel sheet, zinc-plated |
| Side element version | Aluminum |

Environmental and real-life conditions

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 |

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



2866381

<https://www.phoenixcontact.com/us/products/2866381>

| | |
|--|--|
| 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, 2.3g, 90 min. |

Standards and regulations

| | |
|--|--------------------------------------|
| 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 | EN 60950-1/VDE 0805 (SELV) |
| Standard – Protection against shock currents, basic requirements for protective separation in electrical equipment | EN 50178 |
| Standard – Safety extra-low voltage | EN 60950-1 (SELV) EN 60204 (PELV) |
| Standard - Safe isolation | DIN VDE 0100-410 |

Approvals

| | |
|--------------|--|
| UL approvals | UL/C-UL listed UL 508 UL/C-UL Recognized UL 60950-1 |
|--------------|--|

Conformity/Approvals

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

EMC data

| | |
|-------------------------------------|---|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU |
| Low Voltage Directive | Conformance with Low Voltage Directive 2014/35/EC |
| EMC requirements for noise emission | EN 61000-6-3 EN 61000-6-4 |
| EMC requirements for noise immunity | EN 61000-6-1 EN 61000-6-2 |

Electrostatic discharge

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

Electrostatic discharge

| | |
|-------------------|---------------------|
| Contact discharge | 8 kV (Test Level 4) |
| Discharge in air | 8 kV (Test Level 3) |
| 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 |

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



2866381

<https://www.phoenixcontact.com/us/products/2866381>

| | |
|---------------------|-----------------|
| Frequency range | 1 GHz ... 2 GHz |
| Test field strength | 10 V/m |
| Frequency range | 2 GHz ... 3 GHz |
| Test field strength | 10 V/m |
| Comments | Criterion A |

Fast transients (burst)

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

Fast transients (burst)

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

Surge voltage load (surge)

| | |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-5 |
|-----------------------|--------------|

Surge voltage load (surge)

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

Conducted interference

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

Conducted interference

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

Conducted interference

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

Voltage dips

| | |
|-----------------------|---------------|
| Standards/regulations | EN 61000-4-11 |
|-----------------------|---------------|

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 |

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

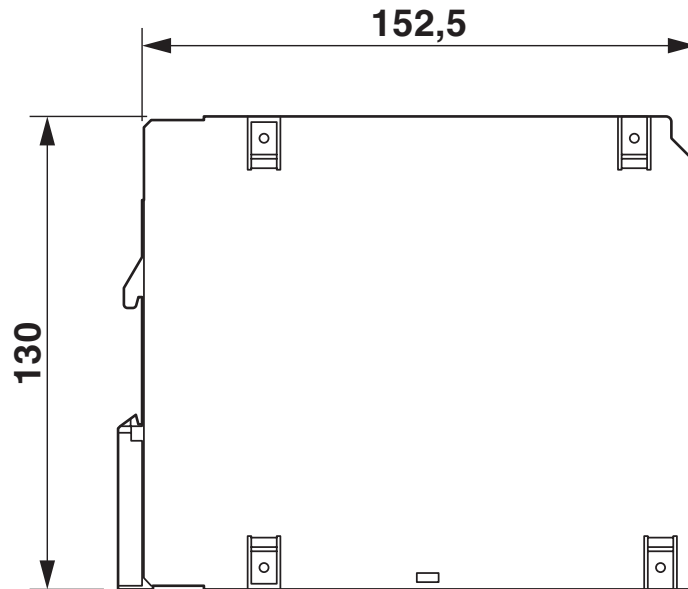


2866381

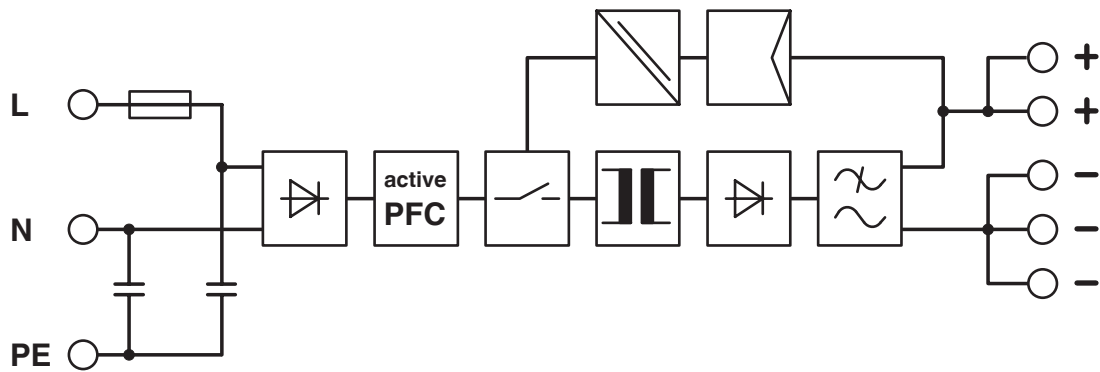
<https://www.phoenixcontact.com/us/products/2866381>

Drawings

Dimensional drawing



Block diagram



2866381

<https://www.phoenixcontact.com/us/products/2866381>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2866381>



cUL Recognized
Approval ID: FILE E 211944



UL Recognized
Approval ID: E211944



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



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



UL Listed
Approval ID: E123528



cUL Listed
Approval ID: E123528

CoC / Compliance Statement

Approval ID: 17-103-00

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



2866381

<https://www.phoenixcontact.com/us/products/2866381>

Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27040701 |
| ECLASS-15.0 | 27040701 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC002540 |
|-----------|----------|

UNSPSC

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

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



2866381

<https://www.phoenixcontact.com/us/products/2866381>

Environmental product compliance

EU RoHS

| | |
|---|--------------|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 7(a), 7(c)-I |

China RoHS

| | |
|--|---|
| Environment friendly use period (EFUP) | EFUP-25 |
| | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

EU REACH SVHC

| | |
|-------------------------------------|--------------------------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |
| SCIP | 5c3d8776-7484-449d-96ce-5d5a20f5b749 |

EF3.1 Climate Change

| | |
|---------|----------------|
| CO2e kg | 58.158 kg CO2e |
|---------|----------------|

Phoenix Contact 2026 © - all rights reserved
<https://www.phoenixcontact.com>

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com