

MINI-PS-100-240AC/24DC/4 - Power supply unit



2938837

<https://www.phoenixcontact.com/in/products/2938837>

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Please use the following items in new systems: 2904599 or 2909577
Primary-switched MINI POWER power supply for DIN rail mounting, input: 1-phase, output: 24 V DC/4 A

Product Description

MINI POWER power supplies for MCR technology

In measurement and control technology (MCR), modular electronics housing has become the industry standard. MINI POWER is the power supply unit to go with it. The devices are flexible, thanks to special voltages and special versions.

Your advantages

- Easy-maintenance connection technology thanks to keyed COMBICON connectors
- Remote monitoring of output voltage via switching output

Commercial Data

| | |
|--------------------------------------|---------------------|
| Item number | 2938837 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales Key | CMP |
| Product Key | CMPM13 |
| Catalog Page | Page 235 (C-4-2017) |
| GTIN | 4017918924058 |
| Weight per Piece (including packing) | 495.6 g |
| Weight per Piece (excluding packing) | 400 g |
| Customs tariff number | 85044030 |
| 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 |
| | 90 V DC ... 350 V DC |
| Input voltage range AC | 85 V AC ... 264 V AC |
| Input voltage range DC | 90 V DC ... 350 V DC |
| Voltage type of supply voltage | AC/DC |
| Inrush current | < 15 A (typical) |
| Inrush current integral (I^2t) | 2.1 A ² s |
| AC frequency range | 45 Hz ... 65 Hz |
| Mains buffering time | > 20 ms (120 V AC) |
| | > 100 ms (230 V AC) |
| Current consumption | 1.3 A (120 V AC) |
| | 0.8 A (230 V AC) |
| | 1.3 A (90 V DC) |
| | 0.4 A (350 V DC) |
| Nominal power consumption | 158 VA |
| Protective circuit | Transient surge protection; Varistor |
| Typical response time | < 0.4 s |
| Input fuse | 3.15 A (slow-blow, internal) |
| Recommended breaker for input protection | 6 A ... 16 A (Characteristics B, C, D, K) |

Output data

| | |
|--|---|
| Efficiency | > 88 % (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 ... 28.5 V DC (> 24 V DC, constant capacity restricted) |
| Nominal output current (I_N) | 4 A (-25 °C ... 60 °C) |
| POWER BOOST (I_{Boost}) | 5 A (-25 °C ... 40 °C permanent) |
| Derating | 60 °C ... 70 °C (2.5%/K) |
| Feedback voltage resistance | 35 V DC |
| Protection against overvoltage at the output (OVP) | \leq 35 V DC |
| Starting delay with capacitive load | unrestricted |
| Max. capacitive load | unlimited |
| Active current limitation | approx 9 A (in the event of a short-circuit) |
| Control deviation | change in load, static 10 % ... 90 % |
| | < 3 % (change in load, dynamic 10 % ... 90 %) |
| | < 0.1 % (change in input voltage \pm 10 %) |
| Residual ripple | < 20 mV _{PP} (20 MHz) |
| Output power | 96 W |

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| | |
|--------------------------------------|--|
| Peak switching voltages nominal load | < 100 mV _{PP} (20 MHz) |
| Maximum no-load power dissipation | 2.5 W |
| Power loss nominal load max. | 12 W |
| Rise time | < 1.2 ms |
| Connection in parallel | yes, for redundancy and increased capacity |
| Connection in series | yes |

Signal: DC OK, status indicator

| | |
|---------------------------|--|
| Output description | U _{OUT} > 21.5 V: High signal |
| Maximum switching voltage | ≤ 24 V |
| Output voltage | + 24 V (Signal) |
| Continuous load current | ≤ 20 mA |

Connection data

Input

| | |
|---------------------------------------|----------------------------|
| Connection method | Pluggable 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. | 12 |
| Stripping length | 7 mm |
| Screw thread | M3 |

Output

| | |
|---------------------------------------|----------------------------|
| Connection method | Pluggable 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. | 12 |
| Stripping length | 7 mm |
| Screw thread | M3 |
| Tightening torque, min | 0.5 Nm |
| Tightening torque max | 0.6 Nm |

Signal

| | |
|---------------------------------------|----------------------------|
| Connection method | Pluggable 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 |

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| | |
|----------------------------------|--------|
| Conductor cross section AWG max. | 12 |
| Screw thread | M3 |
| Tightening torque, min | 0.5 Nm |
| Tightening torque max | 0.6 Nm |

Signaling

| | |
|---------------------------|-------------------------|
| Types of signaling | LED |
| | Active switching output |
| Operating voltage display | Green LED |

Signal output: DC OK, status indicator

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

Electrical properties

| | |
|---------------------------------|---------------------|
| Insulation voltage input/output | 3 kV (type test) |
| | 3 kV (routine test) |

Product properties

| | |
|----------------------------|--------------------|
| Product type | Power supply |
| Product family | MINI POWER |
| MTBF (IEC 61709, SN 29500) | > 815000 h (40 °C) |

Insulation characteristics

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

Dimensions

| | |
|--------|---------|
| Width | 67.5 mm |
| Height | 99 mm |
| Depth | 107 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, vertically 50 mm |
| Mounting position | horizontal DIN rail NS 35, EN 60715 |
| With protective coating | No |

Material specifications

| | |
|------------------|---------|
| Color | green |
| Housing material | Plastic |

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| | |
|-----------------|----------------------------|
| Type of housing | Polyamide PA, color: green |
|-----------------|----------------------------|

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 |
| 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

| | |
|--|--------------------------------------|
| 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 | EN 60950-1/VDE 0805 (SELV) |
| 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 UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location) |
|--------------|--|

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 |
| 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 |
| Housing | Level 3 |

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Electrostatic discharge

| | |
|-------------------|-------------|
| Contact discharge | 8 kV |
| Discharge in air | 8 kV |
| Comments | Criterion B |

Electromagnetic HF field

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

Electromagnetic HF field

| | |
|---------------------|-------------------|
| Frequency range | 80 MHz ... 1 GHz |
| Test field strength | 10 V/m |
| Frequency range | 1 GHz ... 2 GHz |
| Test field strength | 3 V/m |
| Frequency range | 2 GHz ... 2.7 GHz |
| Test field strength | 1 V/m |
| Comments | Criterion A |

Fast transients (burst)

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

Fast transients (burst)

| | |
|----------|--|
| Input | 4 kV (level 4 - asymmetrical: conductor to ground) |
| Output | 2 kV (level 3 - asymmetrical: conductor to ground) |
| Signal | 1 kV (level 2 - asymmetrical: conductor to ground) |
| Comments | Criterion B |

Surge voltage load (surge)

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

Conducted interference

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

Conducted interference

| | |
|-----------------|------------------------|
| I/O/S | Level 3 - asymmetrical |
| Frequency range | 0.15 MHz ... 80 MHz |
| Comments | Criterion A |
| Voltage | 10 V |

Voltage dips

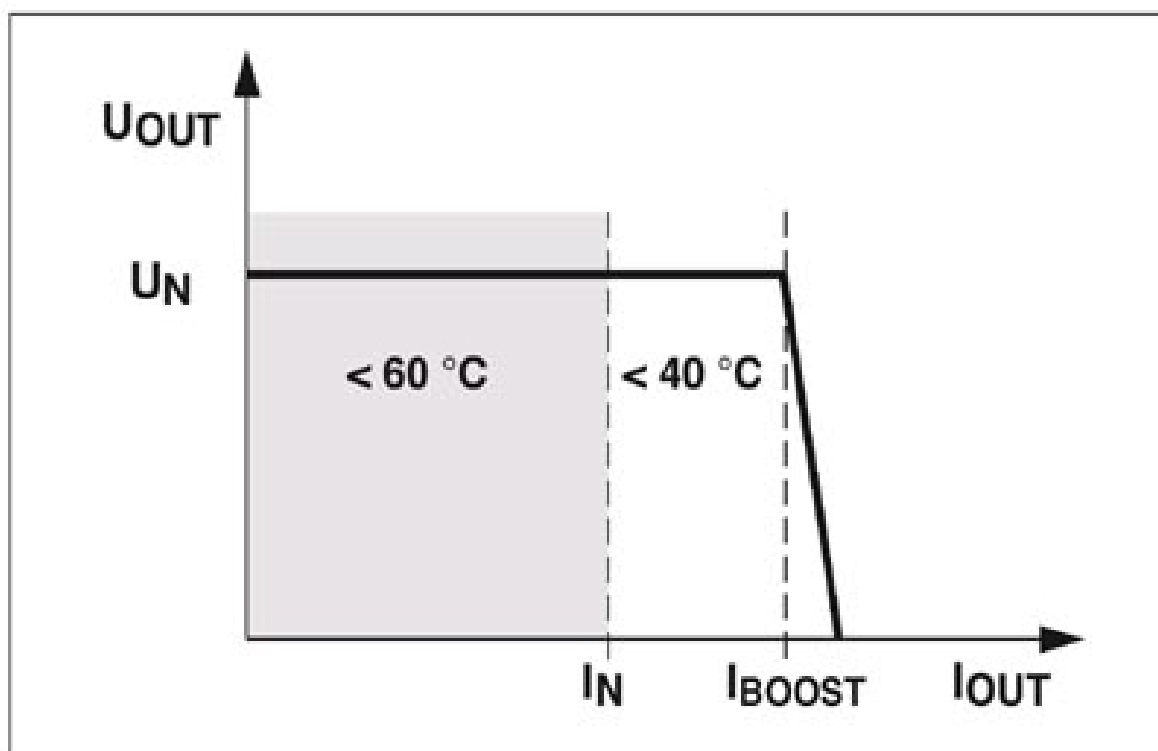
| | |
|-----------------------|---------------|
| Standards/regulations | EN 61000-4-11 |
|-----------------------|---------------|

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 |

Drawings

Diagram



POWER BOOST

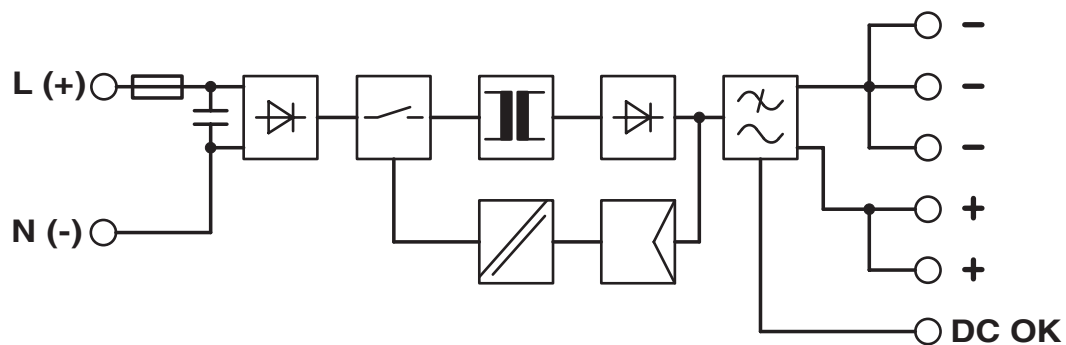
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Block diagram



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Approvals



cUL Recognized
Approval ID: FILE E 211944



UL Recognized
Approval ID: FILE E 211944



EAC
Approval ID: EAC-Zulassung



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



UL Listed
Approval ID: FILE E 123528



cUL Listed
Approval ID: FILE E 123528



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



cUL Listed
Approval ID: FILE E 199827



UL Listed
Approval ID: FILE E 199827

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Classifications

ECLASS

ECLASS-11.0

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

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

2907919

<https://www.phoenixcontact.com/in/products/2907919>



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

TTC-6P-T3-24DC-PT-I - Type 3 surge protection device

1027586

<https://www.phoenixcontact.com/in/products/1027586>



Type 3 surge protection, consisting of protective plug and base element, with integrated status indicator for 24 V DC power supplies

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