

Power supply unit - STEP-PS/ 1AC/12DC/5 - 2868583

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Primary-switched STEP POWER power supply for DIN rail mounting, input: 1-phase, output: 12 V DC/5 A

Product Description

STEP POWER power supplies for distribution boards


The STEP POWER power supply range was developed especially for building automation. The low idling losses and high degree of efficiency ensure maximum energy efficiency. They allow flexible use and can be snapped onto the DIN rail or screwed onto an even surface.

Your advantages

- ✓ Flexible mounting by simply snapping onto the DIN rail or screwing onto a level surface
- ✓ Reliable power supply thanks to high MTBF (mean time between failures) of more than 500,000 hours and U/I characteristic curve
- ✓ Energy savings thanks to maximum energy efficiency and incredibly low idling losses



Key Commercial Data

| | |
|--------------|---|
| Packing unit | 1 pc |
| GTIN |  4 046356 310598 |
| GTIN | 4046356310598 |

Technical data

Dimensions

| | |
|----------------------------------|---------------|
| Width | 72 mm |
| Height | 90 mm |
| Depth | 61 mm |
| Installation distance right/left | 0 mm / 0 mm |
| Installation distance top/bottom | 30 mm / 30 mm |

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 |

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Ambient conditions

| | |
|--|-----------------------------------|
| Max. permissible relative humidity (operation) | ≤ 95 % (at 25 °C, non-condensing) |
| Climatic class | 3K3 (in acc. with EN 60721) |
| Degree of pollution | 2 |

Input data

| | |
|--|---|
| Nominal input voltage range | 100 V AC ... 240 V AC |
| Input voltage range | 85 V AC ... 264 V AC |
| | 95 V DC ... 250 V DC |
| AC frequency range | 45 Hz ... 65 Hz |
| Frequency range DC | 0 Hz |
| Current consumption | 0.8 A (120 V AC) |
| | 0.5 A (230 V AC) |
| Nominal power consumption | 125 VA |
| Inrush current | < 15 A (typical) |
| Mains buffering time | typ. 27 ms (120 V AC) |
| | typ. 120 ms (230 V AC) |
| Input fuse | 3.15 A (slow-blow, internal) |
| Recommended breaker for input protection | 6 A ... 16 A (Characteristics B, C, D, K) |
| Power factor (cos phi) | 0.56 |
| Type of protection | Transient surge protection |
| Protective circuit/component | Varistor |

Output data

| | |
|--|---|
| Nominal output voltage | 12 V DC ±1 % |
| Setting range of the output voltage (U_{Set}) | 10 V DC ... 16.5 V DC (> 12 V DC, constant capacity restricted) |
| Nominal output current (I_N) | 5 A (-25 °C ... 55 °C) |
| | 5.5 A (-25 °C ... 40 °C permanent) |
| Output current I_{max} | 9 A |
| Derating | 55 °C ... 70 °C (2.5%/K) |
| Connection in parallel | Yes, for redundancy and increased capacity |
| Connection in series | yes |
| Feedback voltage resistance | ≤ 25 V DC |
| Protection against overvoltage at the output (OVP) | < 25 V DC |
| Control deviation | < 1 % (change in load, static 10 % ... 90 %) |
| | < 2 % (change in load, dynamic 10 % ... 90 %) |
| | < 0.1 % (change in input voltage ±10 %) |
| Residual ripple | < 55 mV _{PP} (20 MHz) |
| Output power | 60 W |
| Typical response time | < 0.5 s |
| Peak switching voltages nominal load | < 55 mV _{PP} (20 MHz) |
| Maximum power dissipation in no-load condition | < 0.5 W |

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Output data

| | |
|------------------------------|-------|
| Power loss nominal load max. | 8.6 W |
|------------------------------|-------|

General

| | |
|---------------------------------|--|
| Net weight | 0.27 kg |
| Operating voltage display | Green LED |
| Efficiency | > 87 % (for 230 V AC and nominal values) |
| | > 1134000 h (40 °C) |
| Insulation voltage input/output | 4 kV AC (type test) |
| | 3.75 kV AC (routine test) |
| Insulation voltage input / PE | 3.5 kV AC (type test) |
| | 2 kV AC (routine test) |
| Insulation voltage output / PE | 500 V DC (routine test) |
| Degree of protection | IP20 |
| Protection class | II (in closed control cabinet) |
| Housing material | Polycarbonate |
| Foot latch material | POM (Polyoxymethylen) |
| Mounting position | horizontal DIN rail NS 35, EN 60715 |
| Assembly instructions | alignable: 0 mm horizontally, 30 mm vertically |

Connection data, input

| | |
|---------------------------------------|---------------------|
| Connection method | Screw connection |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid 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 | 6.5 mm |
| Screw thread | M3 |

Connection data, output

| | |
|---------------------------------------|---------------------|
| Connection method | Screw connection |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid 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 | 6.5 mm |
| Screw thread | M3 |

Standards

| | |
|-------------------------------------|--------------|
| EMC requirements for noise immunity | EN 61000-6-1 |
|-------------------------------------|--------------|

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Standards

| | |
|--|--|
| | EN 61000-6-2 |
| EMC requirements for noise emission | EN 61000-6-3 |
| | EN 61000-6-4 |
| Standard - Safety of transformers | EN 61558-2-16 |
| 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 – Protection against shock currents, basic requirements for protective separation in electrical equipment | EN 50178 |
| Standard – Limitation of mains harmonic currents | EN 61000-3-2 |
| Rail applications | EN 50121-4 |

Conformance/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 T3C (Hazardous Location) |
| CSA | CSA-C22.2 No. 107.1-01 |
| Shipbuilding approval | DNV GL (EMC B) ABS, NK |

EMC data

| | |
|-------------------------------|---|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU |
| Low Voltage Directive | Conformance with Low Voltage Directive 2014/35/EC |
| Electrostatic discharge | EN 61000-4-2 |
| Contact discharge | 6 kV (Test Level 3) |
| Discharge in air | 8 kV (Test Level 3) |
| Electromagnetic HF field | EN 61000-4-3 |
| Frequency range | 80 MHz ... 1 GHz |
| Test field strength | 10 V/m |
| 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) | EN 61000-4-4 |
| Input | 4 kV (Test Level 4 - asymmetrical) |
| Output | 2 kV (Test Level 3 - asymmetrical) |
| Comments | Criterion A |
| Surge voltage load (surge) | EN 61000-4-5 |
| Input | 2 kV (Test Level 3 - symmetrical) |
| | 4 kV (Test Level 4 - asymmetrical) |

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Technical data

EMC data

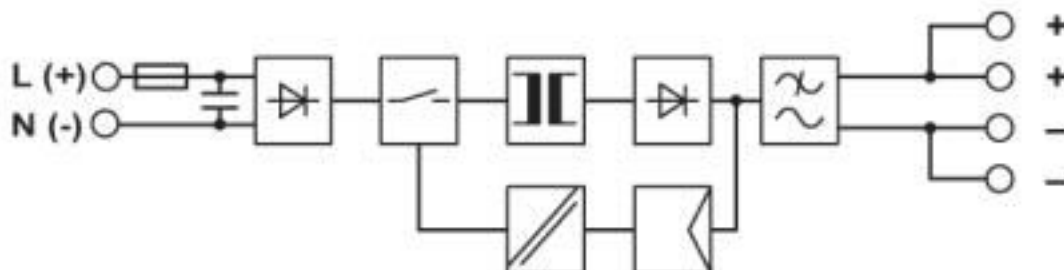
| | |
|------------------------|--------------------------------------|
| Output | 1 kV (Test Level 2 - symmetrical) |
| | 0.5 kV (Test Level 1 - asymmetrical) |
| Comments | Criterion A |
| Conducted interference | EN 61000-4-6 |
| Frequency range | 10 kHz ... 15 kHz |
| | 0.15 MHz ... 80 MHz |
| Voltage | 3 V (Test Level 2) |
| | 10 V (Test Level 3) |
| Comments | Criterion A |
| | Criterion A |
| Voltage dips | EN 61000-4-11 |

Environmental Product Compliance

| | |
|------------|---|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally Friendly Use Period = 25; |
| | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

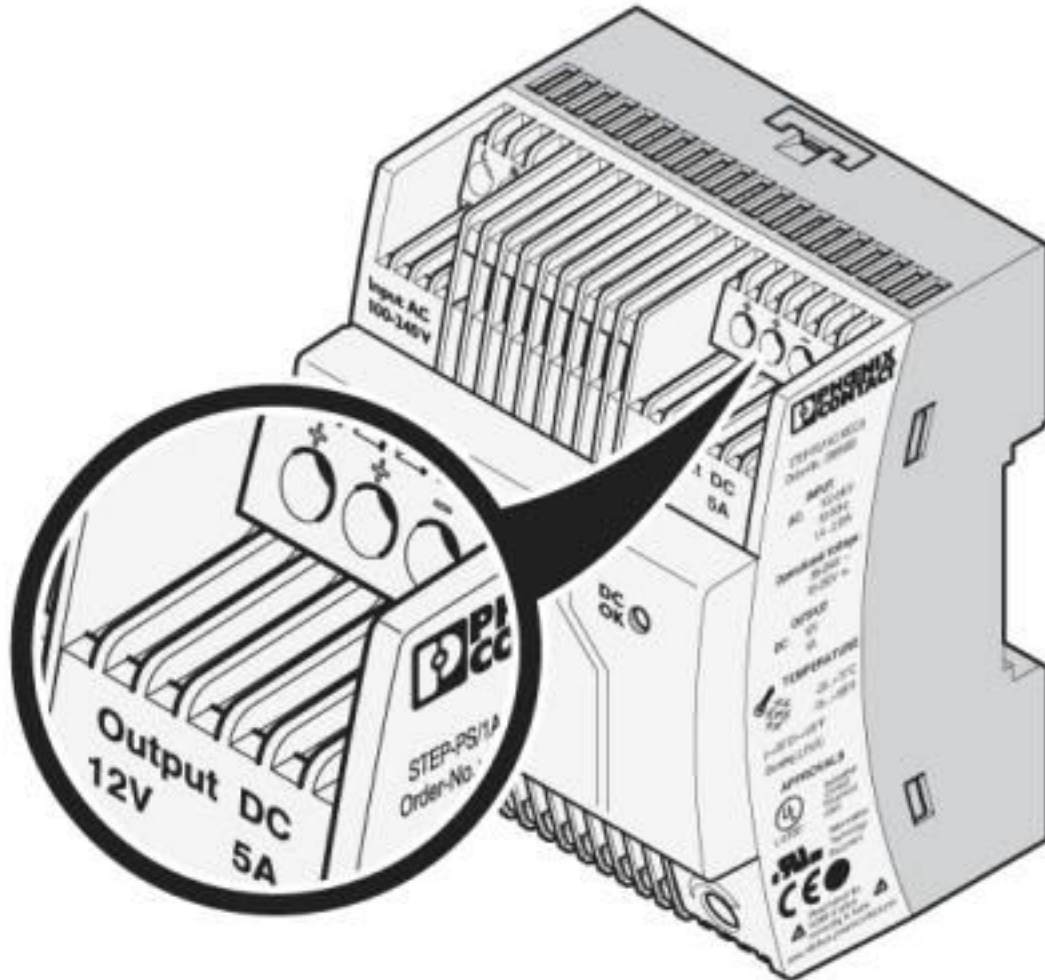
Drawings

Block diagram



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Schematic diagram



Classifications

eCl@ss

| | |
|---------------|----------|
| eCl@ss 10.0.1 | 27040701 |
| eCl@ss 4.0 | 27040700 |
| eCl@ss 4.1 | 27040700 |
| eCl@ss 5.0 | 27242200 |
| eCl@ss 5.1 | 27242200 |
| eCl@ss 6.0 | 27049000 |
| eCl@ss 7.0 | 27049002 |
| eCl@ss 8.0 | 27049002 |
| eCl@ss 9.0 | 27040701 |

ETIM

| | |
|----------|----------|
| ETIM 2.0 | EC001039 |
|----------|----------|

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ETIM

| | |
|----------|----------|
| ETIM 3.0 | EC001039 |
| ETIM 4.0 | EC002540 |
| ETIM 5.0 | EC002540 |
| ETIM 6.0 | EC002540 |
| ETIM 7.0 | EC002540 |

UNSPSC

| | |
|---------------|----------|
| UNSPSC 6.01 | 30211502 |
| UNSPSC 7.0901 | 39121004 |
| UNSPSC 11 | 39121004 |
| UNSPSC 12.01 | 39121004 |
| UNSPSC 13.2 | 39121004 |
| UNSPSC 18.0 | 39121004 |
| UNSPSC 19.0 | 39121004 |
| UNSPSC 20.0 | 39121004 |
| UNSPSC 21.0 | 39121004 |

Approvals

Approvals

Approvals

DNV GL / NK / ABS / UL Listed / UL Recognized / cUL Recognized / IECCEB Scheme / cUL Listed / EAC / EAC / cULus Recognized / cULus Listed

Ex Approvals

UL Listed / cUL Listed / cULus Listed

Approval details

| | | | |
|--------|--|---|------------|
| DNV GL | | https://approvalfinder.dnvgl.com/ | TAA00001YD |
|--------|--|---|------------|

| | | | |
|----|--|---|--------|
| NK | | http://www.classnk.or.jp/hp/en/ | 09A024 |
|----|--|---|--------|

| | | | |
|-----|--|---|------------------|
| ABS | | http://www.eagle.org/eagleExternalPortalWEB/ | 18-HG1797199_PDA |
|-----|--|---|------------------|

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Approvals

| | | | |
|-----------|--|---|---------------|
| UL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 123528 |
|-----------|--|---|---------------|

| | | | |
|---------------|--|---|---------------|
| UL Recognized | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 214596 |
|---------------|--|---|---------------|

| | | | |
|----------------|--|---|---------------|
| cUL Recognized | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 214596 |
|----------------|--|---|---------------|

| | | | |
|-----------------|--|---|-------------|
| IECEE CB Scheme | | http://www.iecee.org/ | DK-14416-M1 |
|-----------------|--|---|-------------|

| | | | |
|------------|--|---|---------------|
| cUL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 123528 |
|------------|--|---|---------------|

| | | | |
|-----|--|--|---------------|
| EAC | | | EAC-Zulassung |
|-----|--|--|---------------|

| | | | |
|-----|--|--|---------------------|
| EAC | | | RU*DE*08.B.01873/19 |
|-----|--|--|---------------------|

| | | | |
|------------------|--|--|--|
| cULus Recognized | | | |
|------------------|--|--|--|

| | | | |
|--------------|--|--|--|
| cULus Listed | | | |
|--------------|--|--|--|

Accessories

Accessories

Device protection

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Accessories

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

Type 3 surge protection device - PLT-SEC-T3-24-FM-UT - 2907916



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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[DVP08ST11N](#) [DVPACAB530](#) [DVPCOPM-SL](#) [DVPEN01-SL](#) [DVPPF01-S](#) [ADNB008-48-1PM-C](#) [ADNB017-24-1PM-C](#) [ADNB040-24-1PM-C](#) [ADNB034-12-1PM-C](#) [SS14011524](#) [S8TS-06024-E1](#) [PS-UPS40](#) [PSC-6024](#) [PSD-A60W12](#) [96PS-A120WDIN](#) [PSD-A60W48](#) [PSD-A40W12](#) [PSD-A40W24](#) [SMP21-L20-DC24V-5A](#) [PSD-A40W48](#) [S8T-DCBU-02](#) [PS-S4024](#) [NTPS-24-1.3](#) [PST-96024](#) [S82YVSC4P](#) [PS-S4005](#) [PS-10024](#) [PS-S10024](#) [PS-C12024](#) [PSP-480S24](#) [PS-C48024](#) [PSC-2024](#) [PSC-4012](#) [PSC-4048](#) [PSC-9615](#) [PSC-15124](#) [PSC-15148](#)
[PSC-24148](#) [PSC-48148](#) [TRIO-PS-2G/1AC/12DC/5/C2LP](#)