Power supply unit - STEP-PS/ 1AC/12DC/1.5/FL

2868554

https://www.phoenixcontact.com/gb/products/2868554

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Primary-switched STEP POWER power supply for DIN rail mounting, input: 1-phase, output: 12 V DC/1.5 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

Commercial Data

Item number	2868554
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CMPS12
Product Key	CMPS12
Catalog Page	Page 284 (C-4-2019)
GTIN	4046356501521
Weight per Piece (including packing)	158.1 g
Weight per Piece (excluding packing)	70 g
Customs tariff number	85044030
Country of origin	PL

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
	95 V DC ... 250 V DC
Input voltage range AC	85 V AC ... 264 V AC
Input voltage range DC	95 V DC ... 250 V DC
Voltage type of supply voltage	AC/DC
Inrush current	< 15 A (typical)
Inrush current integral (I^2t)	< 0.1 A^2s
AC frequency range	45 Hz ... 65 Hz
Frequency range DC	0 Hz
Mains buffering time	typ. 15 ms (120 V AC)
	typ. 70 ms (230 V AC)
Current consumption	0.33 A (120 V AC)
	0.18 A (230 V AC)
Nominal power consumption	37.9 VA
Protective circuit	Transient surge protection; Varistor
Power factor (cos phi)	0.57
Typical response time	< 0.5 s
Input fuse	1.25 A (slow-blow, internal)
Recommended breaker for input protection	6 A ... 16 A (Characteristics B, C, D, K)

Output data

Efficiency	> 84 % (for 230 V AC and nominal values)
Output characteristic	U/I
Nominal output voltage	12 V DC ±1 %
Output current I_{max}	2.6 A
Nominal output current (I_N)	1.5 A (-25 °C ... 55 °C)
	1.65 A (-25 °C ... 40 °C permanent)
Derating	55 °C ... 70 °C (2.5%/K)
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	< 75 mV_{PP} (20 MHz)
Output power	18 W
Peak switching voltages nominal load	< 10 mV_{PP} (20 MHz)
Maximum no-load power dissipation	< 0.4 W
Power loss nominal load max.	< 3.2 W

Rise time	< 0.5 s (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 solid min.	0.2 mm²
Conductor cross section solid max.	2.5 mm²
Conductor cross section flexible min.	0.2 mm²
Conductor cross section flexible max.	2.5 mm²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Stripping length	6.5 mm
Screw thread	M3
Tightening torque, min	0.6 Nm
Tightening torque max	0.8 Nm

Output

Connection method	Screw connection
Conductor cross section solid min.	0.2 mm²
Conductor cross section solid max.	2.5 mm²
Conductor cross section flexible min.	0.2 mm²
Conductor cross section flexible max.	2.5 mm²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Stripping length	6.5 mm
Screw thread	M3
Tightening torque, min	0.6 Nm
Tightening torque max	0.8 Nm

LED signaling

Types of signaling	LED
Operating voltage display	Green LED

Signal output: LED status indicator

Status display	"DC OK" LED green
Note on status display	U_{OUT} > 10.8 V: LED on

Electrical properties

Number of phases	1.00
Insulation voltage input/output	4 kV AC (type test)
	3.75 kV AC (routine test)
Insulation voltage input/output	3.75 kV AC (routine test)
	4 kV AC (type test)

Product properties

Product type	Power supply
MTBF (IEC 61709, SN 29500)	> 1800000 h (40 °C)

Insulation characteristics

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

Dimensions

Width	36 mm
Height	90 mm
Depth	37 mm (Device depth (DIN rail mounting))
Depth	43 mm
Horizontal pitch	2 Div.

Installation dimensions

Installation distance right/left	0 mm / 0 mm
Installation distance top/bottom	30 mm / 30 mm

Mounting

Mounting type	DIN rail mounting
Assembly instructions	alignable: 0 mm horizontally, 30 mm vertically
Mounting position	horizontal DIN rail NS 35, EN 60715
With protective coating	No

Material specifications

Housing material	Plastic
Foot latch material	POM (Polyoxymethylene)
Housing material	Polycarbonate

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
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

Budgetary standard	IEC 60335-1
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 - Approval for medical use	IEC 60601-1, 2 x MOOP
Standard – Protection against shock currents, basic requirements for protective separation in electrical equipment	EN 50178
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

Approval data

CSA	CSA-C22.2 No. 107.1-01
Shipbuilding approval	DNV GL (EMC B) ABS, NK
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 T4 (Hazardous Location)
	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
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
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
Noise immunity	EN 61000-6-2:2005

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 B

Electromagnetic HF field

Standards/regulations	EN 61000-4-3

Electromagnetic HF field

Frequency range	80 MHz ... 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)
Comments	Criterion A

Surge voltage load (surge)

Standards/regulations	EN 61000-4-5
Input	2 kV (Test Level 3 - symmetrical)
	4 kV (Test Level 4 - asymmetrical)
Output	0.5 kV (Test Level 1 - symmetrical)
	1 kV (Test Level 2 - asymmetrical)
Comments	Criterion A

Conducted interference

Standards/regulations	EN 61000-4-6

Conducted interference

Input/Output	asymmetrical
Frequency range	10 kHz ... 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 used in industry and residential area / EMC 1
Emitted radio interference in acc. with EN 55011	EN 55011 (EN 55022) class B used in industry and residential area / EMC 1
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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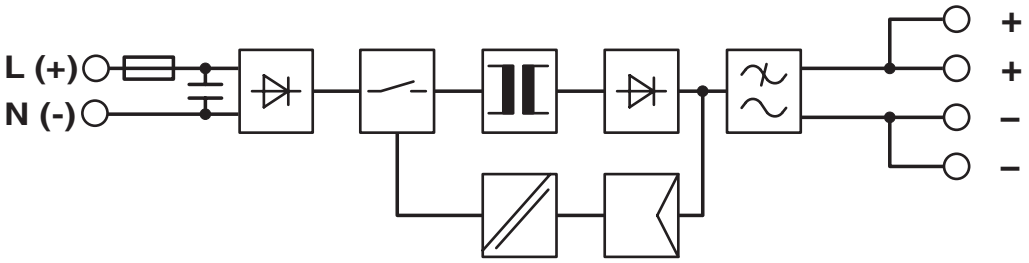
Drawings

Block diagram



Approvals

UL Recognized
Approval ID: FILE E 214596

cUL Recognized
Approval ID: FILE E 214596

cUL Listed
Approval ID: FILE E 123528

UL Listed
Approval ID: FILE E 123528

ABS
Approval ID: 18-HG1797199_PDA

DNV GL
Approval ID: TAA00001YD

NK
Approval ID: TA19644M

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

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

IECEE CB Scheme
Approval ID: SI-4238

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IECEE CB Scheme
Approval ID: DK-27288-M1-UL

EAC
Approval ID: EAC-Zulassung

DNV GL
Approval ID: TAA00001YD

NK
Approval ID: TA19644M

IECEE CB Scheme
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ABS
Approval ID: 18-HG1797199_PDA

UL Listed
Approval ID: FILE E 199827

cUL Listed
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Classifications

ECLASS

ECLASS-9.0	27040701
ECLASS-10.0.1	27040701
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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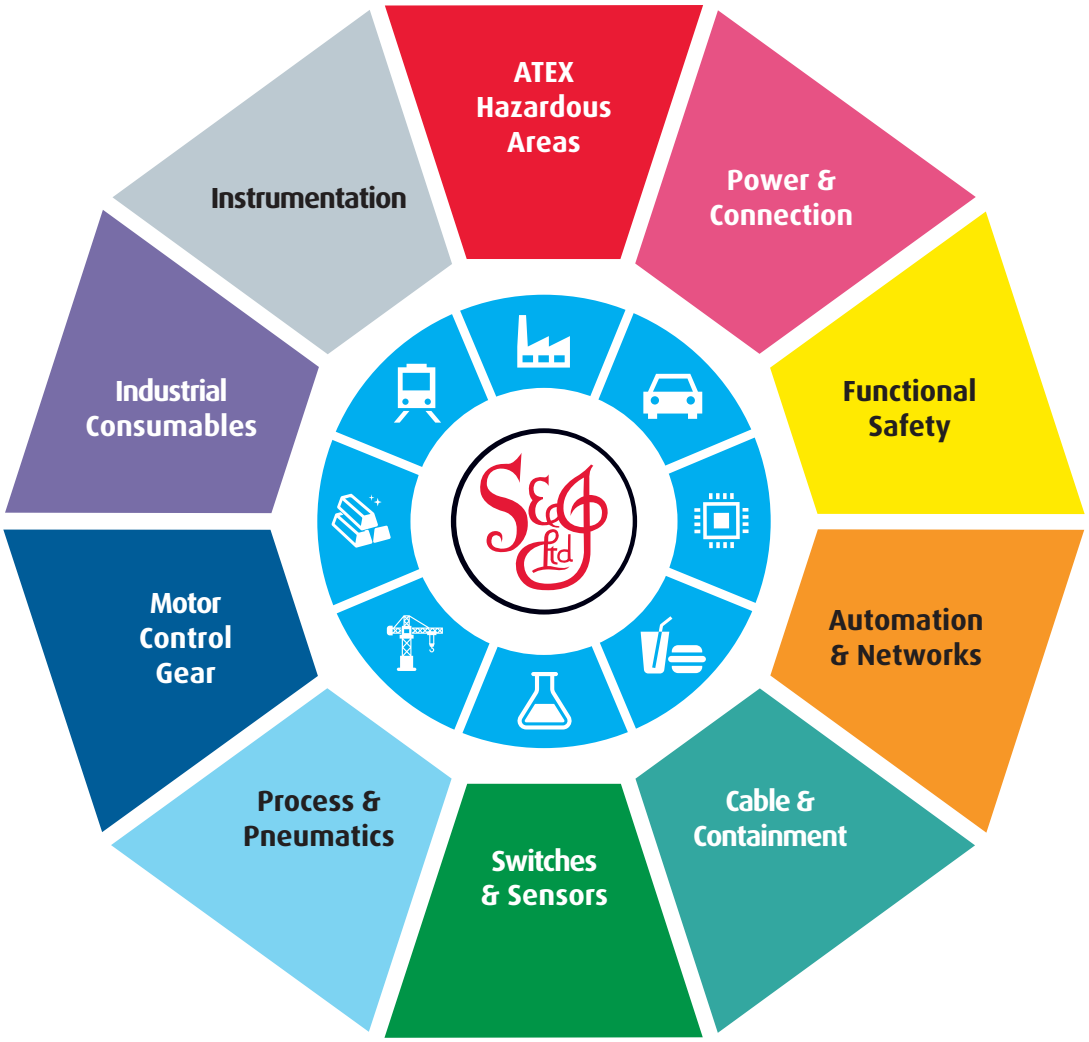

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