

# Power supply unit - STEP-PS/48AC/24DC/0.5 - 2868716

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Primary-switched STEP POWER power supply for DIN rail mounting, input: 1-phase, output: 24 V DC/0.5 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 576789
GTIN	4046356576789

## Technical data

### Dimensions

Width	18 mm
Height	90 mm
Depth	61 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
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, non-condensing)
Climatic class	3K3 (in acc. with EN 60721)

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## Technical data

### Ambient conditions

Degree of pollution	2
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### Input data

Nominal input voltage range	48 V AC
Input voltage range	43 V AC ... 52 V AC
	60 V DC ... 80 V DC
AC frequency range	45 Hz ... 65 Hz
Frequency range DC	0 Hz
Current consumption	0.5 A (43 V AC)
	0.45 A (48 V AC)
Nominal power consumption	21 VA
Inrush current	< 10 A (typical)
Mains buffering time	typ. 15 ms (48 V AC)
	typ. 20 ms (52 V AC)
Input fuse	1.25 A (slow-blow, internal)
Recommended breaker for input protection	6 A ... 16 A (Characteristics B, C, D, K)
Power factor (cos phi)	0.7

### Output data

Nominal output voltage	24 V DC $\pm 1\%$
Nominal output current ( $I_N$ )	0.5 A (-25 °C ... 55 °C)
	0.55 A (-25°C ... 40°C permanent )
Output current $I_{max}$	1 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	$\leq 35$ V DC
Protection against overvoltage at the output (OVP)	< 35 V DC
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	< 30 mV <sub>PP</sub> (20 MHz)
Output power	12 W
Typical response time	< 0.5 s
Peak switching voltages nominal load	< 20 mV <sub>PP</sub> (20 MHz)
Maximum power dissipation in no-load condition	< 0.3 W
Power loss nominal load max.	< 3.4 W

### General

Net weight	0.07 kg
Efficiency	> 81 % (for 48 V AC and nominal values)
Insulation voltage input/output	4 kV AC (type test)

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### General

	3.75 kV AC (routine test)
Protection class	II (in closed control cabinet)
Degree of protection	IP20
	> 1860000 h (40 °C)
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 <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
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 <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Stripping length	6.5 mm
Screw thread	M3

### Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise immunity	EN 61000-6-2:2005
Connection in acc. with standard	CUL
Standards/regulations	EN 61000-4-2
Contact discharge	4 kV (Test Level 2)
Standards/regulations	EN 61000-4-3
Frequency range	80 MHz ... 1 GHz
Test field strength	10 V/m
Frequency range	1.4 GHz ... 2 GHz
Test field strength	3 V/m
Standards/regulations	EN 61000-4-4
Comments	Criterion B

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## Technical data

### Standards and Regulations

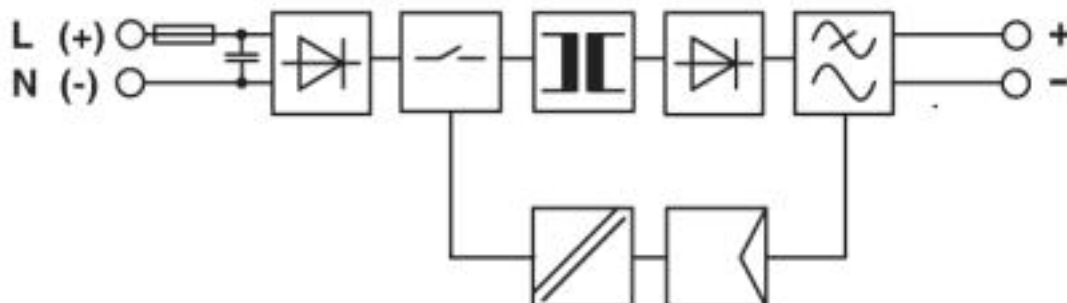
Standards/regulations	EN 61000-6-3
	EN 61000-4-6
Frequency range	10 kHz ... 80 MHz
Voltage	10 V (Test Level 3)
Low Voltage Directive	Conformance with LV directive 2006/95/EC
Standard - Safety of transformers	EN 61558-2-16
Standard - Electrical safety	IEC 60950-1/VDE 0805 (SELV)
Standard – Electronic 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
UL approvals	UL/C-UL listed UL 508
	UL/C-UL Recognized UL 60950-1
	NEC Class 2 as per UL 1310
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.
Rail applications	EN 50121-4

### 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



## Approvals

Approvals

# Power supply unit - STEP-PS/48AC/24DC/0.5 - 2868716

## Approvals

### Approvals

UL Listed / UL Recognized / cUL Recognized / IECCEB Scheme / cUL Listed / EAC / EAC / cULus Recognized / cULus Listed

### Ex Approvals

### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 123528
UL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 214596
cUL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 214596
IECEE CB Scheme		<a href="http://www.iecee.org/">http://www.iecee.org/</a>	DK-20185-A1
cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 123528
EAC			EAC-Zulassung
EAC			RU C- DE.A*30.B.01082
cULus Recognized			

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### Approvals

cULus Listed



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