

Power supply unit - STEP3-PS/1AC/24DC/4/PT - 1140066

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Primary-switched power supply unit, STEP POWER, Push-in connection, DIN rail mounting, input: 1-phase, output: 24 V DC / 4 A

Product Description

STEP POWER power supplies for distribution boards. The STEP POWER power supplies with Push-in connection technology are the professional solution for intelligent building automation. The compact devices are economical, space-saving, and flexible in application.

Your advantages

- ✓ Energy savings with the highest level of efficiency in no-load and part-load operation (Efficiency Level VI)
- ✓ Space savings in the control cabinet due to the narrow design combined with increased performance (up to 100%)
- ✓ Approval for household purposes (EN 60335) allows use in domestic applications
- ✓ Quick and easy startup with tool-free Push-in connection technology at a 45° angle with double terminal points
- ✓ Flexible mounting: Snap onto a DIN rail or screw onto a level surface



Push-in Technology[®]
Designed by Phoenix Contact



Key Commercial Data

Packing unit	1 pc
GTIN	 4 063151 089115
GTIN	4063151089115
Weight per Piece (excluding packing)	300.000 g
Custom tariff number	85044030
Country of origin	Vietnam

Technical data

Dimensions

Width	72 mm
Height	90 mm

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Dimensions

Depth	61 mm
	55 mm (Device depth (DIN rail mounting))
Horizontal pitch	4 Div. (DIN 43880)
Installation distance right/left	0 mm / 0 mm
Installation distance top/bottom	30 mm / 30 mm

Ambient conditions

Ambient temperature (operation)	-10 °C ... 70 °C (Derating: > 50 °C; 2 %/K)
Ambient temperature (start-up type tested)	-25 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, non-condensing)
Maximum altitude	≤ 4000 m (> 2000 m, Derating: 10 %/1000 m)
Degree of pollution	2

Input data

Input voltage range	100 V AC ... 240 V AC -15 % ... +10 %
	110 V DC ... 250 V DC -20 % ... +40 %
Derating	< 100 V AC ... 85 V AC (1 %/V)
	< 110 V DC ... 88 V DC (1 %/V)
Frequency range (f_N)	50 Hz ... 60 Hz ±10 %
Typical national grid voltage	120 V AC
	230 V AC
Voltage type of supply voltage	AC/DC
Current consumption	1.07 A (100 V AC)
	0.47 A (240 V AC)
	0.97 A (110 V DC)
	0.41 A (250 V DC)
Discharge current to PE	< 0.25 mA
Mains buffering time	typ. 20 ms (120 V AC)
	typ. 20 ms (230 V AC)
Switch-on time	typ. 2 s
Inrush current	typ. 37 A
Inrush current integral (I^2t)	typ. 0.4 A ² s
Type of protection	Transient surge protection
Protective circuit/component	Varistor
Device mains fuse	4 A internal (device protection), slow-blow
Recommended breaker for input protection	6 A ... 16 A (Characteristics B, C, D, K)

Output data

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Output data

Nominal output voltage	24 V DC
Setting range of the output voltage (U_{Set})	22 V DC ... 27 V DC (> 24 V DC, constant capacity restricted)
Nominal output current (I_N)	4 A
Control deviation	< 0.5 % (Static load change 10 % ... 90 %)
	< 3 % (Dynamic load change 10 % ... 90 %, (10 Hz))
	< 0.1 % (change in input voltage ± 10 %)
Short-circuit-proof	yes
No-load proof	yes
Residual ripple	typ. 150 mV _{pp}
Connection in parallel	yes, for increasing power and redundancy with diode
Connection in series	yes, for increased output voltage
Feedback voltage resistance	≤ 35 V DC
Protection against overvoltage at the output (OVP)	< 35 V DC
Rise time	typ. 100 ms ($U_{Out} = 10$ % ... 90 %)
Derating	> 50 °C ... 70 °C (2 % / K)
Crest factor	typ. 1.74
	typ. 2.08
Minimum no-load power dissipation	< 0.21 W (120 V AC)
Maximum no-load power dissipation	< 0.21 W (230 V AC)
Minimum nominal load power dissipation	< 7 W (120 V AC)
Power loss nominal load max.	< 5.7 W (230 V AC)

General

Net weight	255 g
Environmental protection directive	RoHS Directive 2011/65/EU
	WEEE
	Reach
Efficiency	> 93 % (120 V AC)
	> 94 % (230 V AC)
MTBF (IEC 61709, SN 29500)	> 1350000 h (25 °C)
	> 750000 h (40 °C)
	> 488000 h (50 °C)
Insulation voltage input/output	4 kV AC (type test)
	3.75 kV AC (routine test)
Degree of protection	IP20
Protection class	II (in closed control cabinet)
Efficiency Level	VI

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General

Housing material	Polycarbonate
Foot latch material	Polyamid
Mounting position	horizontal DIN rail NS 35, EN 60715
Assembly instructions	alignable: 0 mm horizontally, 30 mm vertically

Input connection data

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section solid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross-section flexible with ferrule without plastic sleeve	0.5 mm ² ... 2.5 mm ²
Conductor cross-section flexible with ferrule and plastic sleeve	0.2 mm ² ... 1 mm ²
Conductor cross section AWG	24 ... 14 (Cu)

Output connection data

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section solid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross-section flexible with ferrule without plastic sleeve	0.5 mm ² ... 2.5 mm ²
Conductor cross-section flexible with ferrule and plastic sleeve	0.2 mm ² ... 1 mm ²
Conductor cross section AWG	24 ... 14 (Cu)

LED signaling

Types of signaling	LED
U _{Out}	> 0,9 x U _N (U _N = 24 V DC) (LED lights up green)
	< 0,9 x U _N (U _N = 24 V DC) (LED off)

Standards

Standard designation	Electrical safety
Standards/regulations	IEC 61010-1 (SELV)
Standard designation	Protective extra-low voltage
Standards/regulations	IEC 61010-1 (SELV)
	IEC 61010-2-201 (PELV)
Standard designation	Safe isolation
Standards/regulations	IEC 61558-2-16
Standard designation	Low-voltage power supplies, DC output
Standards/regulations	EN 61204-3
Standard designation	Safety requirements for electrical equipment for measurement, control, and laboratory use

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Standards

Standards/regulations	IEC 61010-1
Standard designation	Safety of electrical devices for household use and similar purposes
Standards/regulations	DIN EN 60335-1
Overvoltage category EN 61010-1	II (≤ 4000 m)
Overvoltage category EN 62477-1	III (≤ 2000 m)

Conformance/approvals

Designation	UL
Identification	UL/C-UL Listed UL 61010-1
Designation	UL
Identification	UL/C-UL Listed UL 61010-2-201
Designation	UL
Identification	UL/C-UL Listed ANSI/UL 121201 Class I, Division 2, Groups A, B, C, D (Hazardous Location)

EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Conducted noise emission	EN 55016
	EN 61000-6-3 (Class B)
Noise emission	EN 55016
	EN 61000-6-3 (Class B)
Harmonic currents	EN 61000-3-2
	EN 61000-3-2 (Class A)
Flicker	EN 61000-3-3
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 (Test Level 3)
Frequency range	1 GHz ... 6 GHz
Test field strength	10 V/m (Test Level 3)
Comments	Criterion A
Fast transients (burst)	EN 61000-4-4
Input	asymmetrical 4 kV (Test Level 4)
Output	asymmetrical 2 kV (Test Level 3)
Comments	Criterion A
Surge voltage load (surge)	EN 61000-4-5

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EMC data

Input	symmetrical 2 kV (Test Level 4)
	asymmetrical 4 kV (Test Level 4)
Output	symmetrical 1 kV (Test Level 3)
	asymmetrical 2 kV (Test Level 3)
Comments	Criterion A
Conducted interference	EN 61000-4-6
Frequency range	0.15 MHz ... 80 MHz
Voltage	10 V (Test Level 3)
Comments	Criterion A
Voltage dips	EN 61000-4-11
Voltage	230 V AC
Frequency	50 Hz
Voltage dip	70 %
Number of periods	25 periods
Additional text	Class 3
Comments	Criterion A
Voltage dip	40 %
Number of periods	10 periods
Additional text	Class 3
Comments	Criterion B
Voltage dip	0 %
Number of periods	1 period
Additional text	Class 3
Comments	Criterion A
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.
Criterion C	Temporary adverse effects on the operating behavior, which the device corrects automatically or which can be restored by actuating the operating elements.

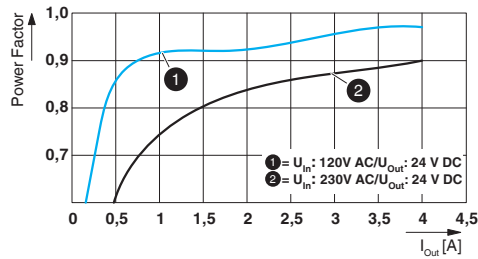
Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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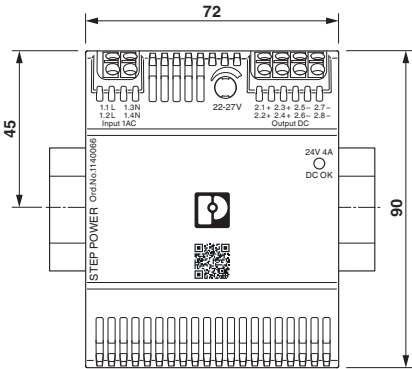
Drawings

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Diagram

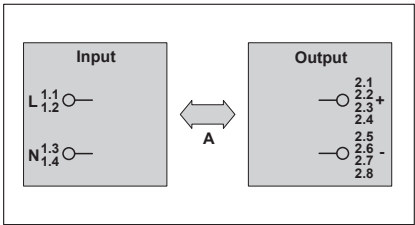


Dimensional drawing

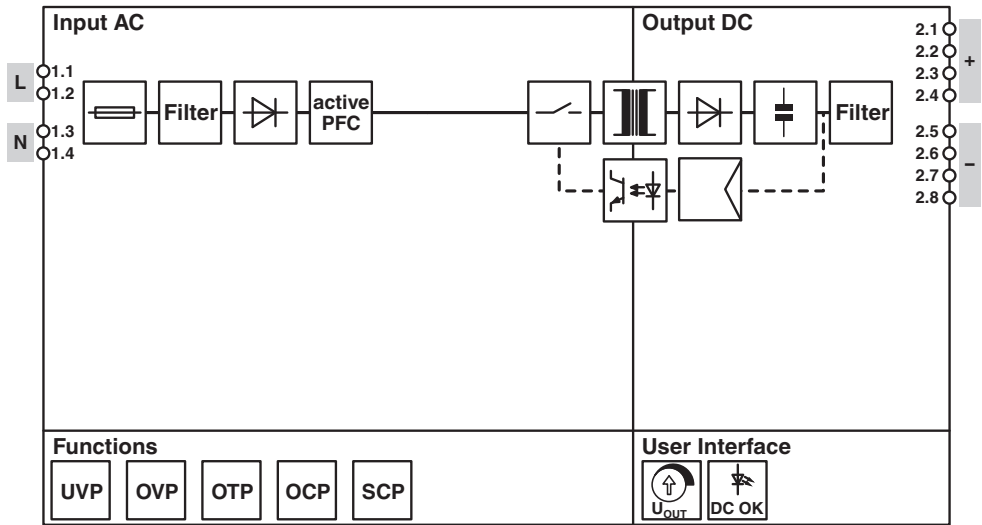


Schematic diagram

Housing

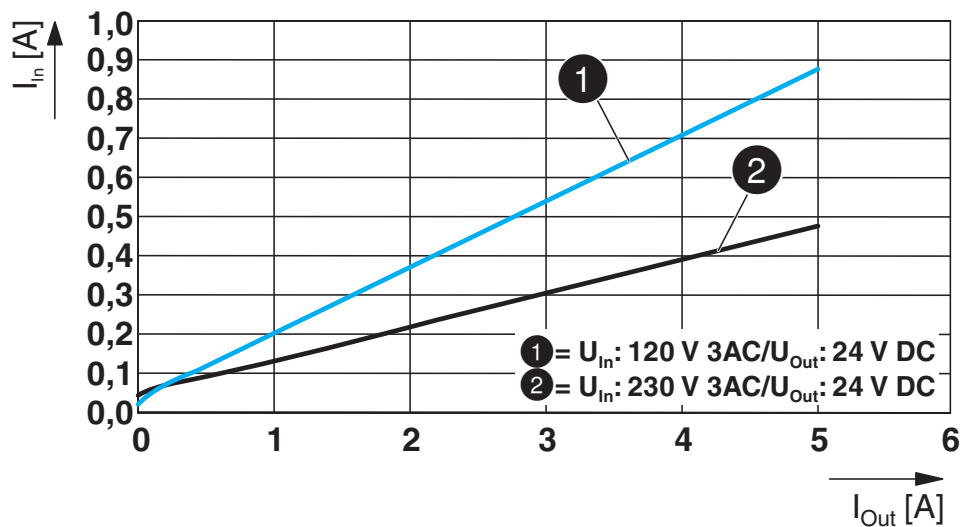


Block diagram

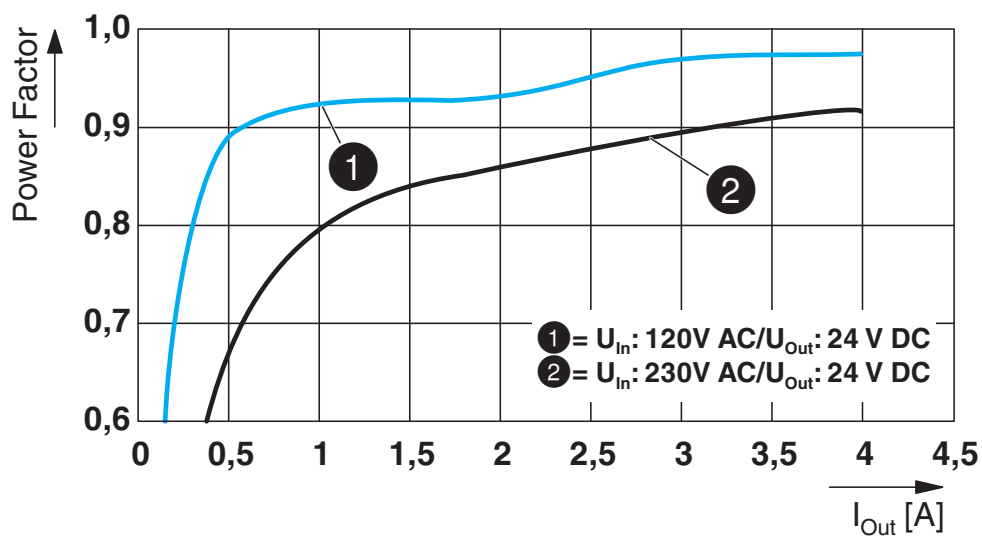


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Diagram

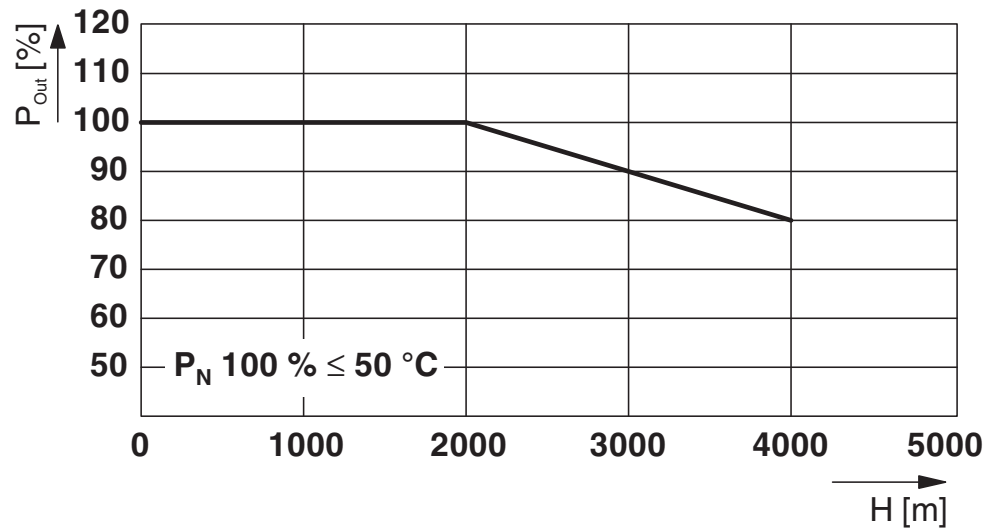


Diagram

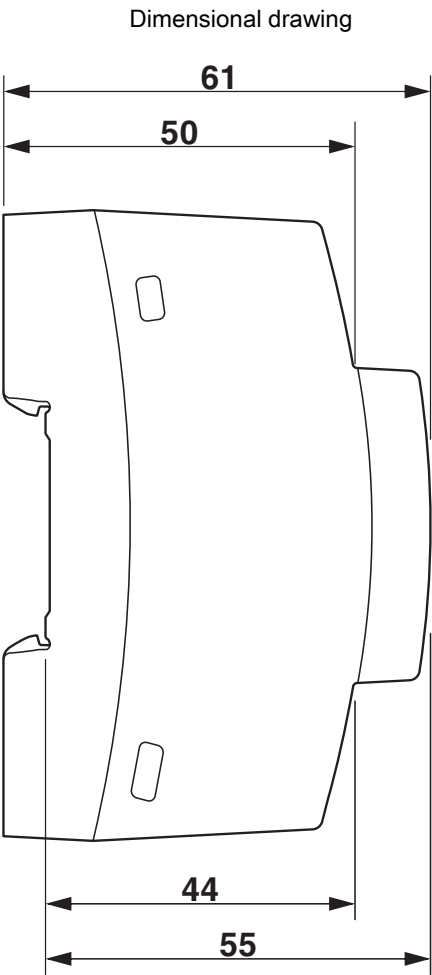


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Diagram



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Classifications

eCl@ss

eCl@ss 10.0.1	27040701
eCl@ss 11.0	27040701
eCl@ss 9.0	27040701

ETIM

ETIM 7.0	EC002540
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Approvals

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Approvals

Approvals

cULus Listed / EAC / EAC

Ex Approvals

cULus Listed

Approval details

cULus Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 123528
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EAC		RU S- DE.BL08.W.00764
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EAC		RU S- DE.BL08.W.00764
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Accessories

Accessories

Redundancy module

Redundancy module - STEP-DIODE/5-24DC/2X5/1X10 - 2868606



Redundancy module, 5 ... 24 V DC, 2x 5 A, 1x 10 A

Sealing plugs

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Accessories

Closing cap - STEP3 SEALING PLUG - 1175957



Sealing plug for protection against manipulation (adjustment of the DC output voltage) by sealing off the potentiometer opening