ESSENTIAL-PS/1AC/24DC/120W/EE - Power supply unit

2910586

https://www.phoenixcontact.com/lt/products/2910586

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Primary-switched ESSENTIAL edition power supply for DIN rail mounting, input: 1-phase, output: 24 V DC / 120 W

Your advantages

- Worldwide use thanks to the wide range input and international approval package
- Fast installation, thanks to easy DIN rail mounting
- Greater availability, thanks to fanless convention cooling

Commercial Data

Item number	2910586
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CMP
Product Key	CMPB13
GTIN	4055626464411
Weight per Piece (including packing)	678.5 g
Weight per Piece (excluding packing)	530 g
Customs tariff number	85044030
Country of origin	IN

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 (< 100 V AC derating 1%/V AC)
Derating	< 100 V (1 %/V)
Input voltage range AC	85 V AC ... 264 V AC
Input voltage range DC	120 V DC ... 375 V DC
Inrush current	typ. 20 A (115 V AC)
	typ. 40 A (230 V AC)
AC frequency range	47 Hz ... 63 Hz
Mains buffering time	typ. 20 ms (115 V AC)
	typ. 90 ms (230 V AC)
Current consumption	2.2 A (115 V AC)
	1.2 A (230 V AC)
Nominal power consumption	249.56 VA
Protective circuit	Transient surge protection; Varistor
Typical response time	200 ms
Input fuse	4 A (slow-blow, internal)
Permissible backup fuse	B20
Discharge current to PE	< 0.25 mA (264 V AC)

Output data

Efficiency	85 % (115 V AC)
	88 % (230 V AC)
Output characteristic	HICCUP
Nominal output voltage	24 V DC ±2 %
Setting range of the output voltage (U_{Set})	22 V DC ... 28 V DC (max. power ≤ 120 W)
Nominal output current (I_N)	5 A
Derating	-20 °C ... -10 °C (2 % / °C)
	> 40 °C (1.67 % / °C, 115 V AC)
	> 50 °C (2.5 % / °C, 230 V AC)
Max. capacitive load	8000 µF
Active current limitation	105% - 150% of the max. output power (in the event of short circuit)
Control deviation	≤ 1 % (change in load, static 10 % ... 90 %)
	typ. ± 2 % (change in load, dynamic 10 % ... 90 %)
	< 0.1 % (change in input voltage ±10 %)
Residual ripple	< 120 mV_{PP} (-10 °C ... +70 °C)
	< 240 mV_{PP} (-20 °C ... -10 °C)
Output power	120 W
Maximum no-load power dissipation	0.65 W (115 V AC / 230 V AC)

Power loss nominal load max.	13.3 W (115 V AC / 230 V AC)
Rise time	typ. 30 ms (at nominal load)

Connection data

Input

Connection method	Screw connection
Conductor cross section AWG min.	18
Conductor cross section AWG max.	8
Stripping length	7 mm

Output

Connection method	Screw connection
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Stripping length	7 mm

Signaling

Types of signaling	LED
Operating voltage display	Green LED

Signal output

Status display	"DC OK" LED green

Electrical properties

Number of phases	1.00
Insulation voltage input/output	3 kV AC
Insulation voltage output / PE	0.5 kV AC
Insulation voltage input / PE	2 kV AC

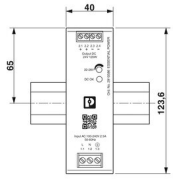
Product properties

Product type	Power supply
Product family	ESSENTIAL edition
MTBF (Telcordia SR-332)	> 700000 h

Insulation characteristics

Protection class	I (with PE connection)
Degree of pollution	2

Dimensions

Dimensional drawing	

Width	40 mm
Height	123.6 mm
Depth	117.6 mm

Installation dimensions

Installation distance right/left	10 mm / 10 mm
Installation distance top/bottom	50 mm / 50 mm

Mounting

Mounting type	DIN rail mounting
Assembly instructions	alignable: horizontally 10 mm, vertically 50 mm
With protective coating	No

Material specifications

Housing material	Metal
Type of housing	Steel sheet, zinc-plated
Side element version	Aluminum
Housing material	Aluminum

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-20 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 5000 m (> 2000 m, Derating: 10 %/1000 m)
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, non-condensing)
Shock	IEC 60068-2-27, 27, half sinusoidal wave: 50g for 11 ms; 3x per direction, 9x overall
Vibration (operation)	IEC 60068-2-6, sinusoidal waves: 10 Hz ... 500 Hz, 19,6 m/s² (2g peak), 10 min. per cycle, 60 min. in the X direction

Standards and regulations

Standard - Electrical safety	EN 60950-1
Standard – Safety extra-low voltage	EN 60950-1 (SELV)
Approval - requirement of the semiconductor industry with regard to mains voltage dips	SEMI F47 - 0706 (200 V AC)

Approvals

CSA	CSA-C22.2 Nr. 107.1-01
	CSA-C22.2 Nr. 60950-01
UL approvals	UL/C-UL listed UL 508

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

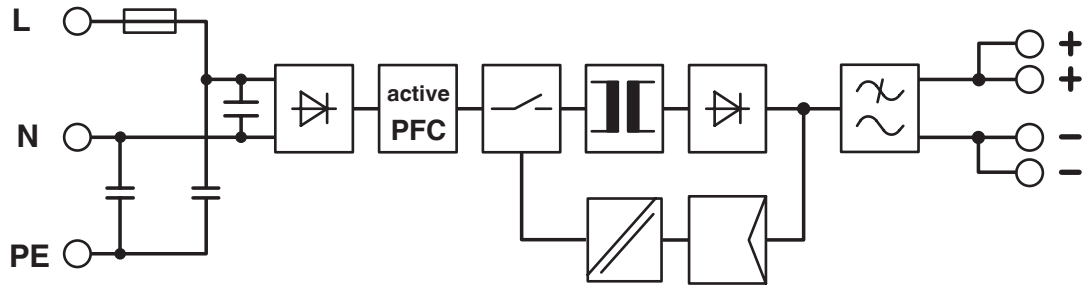
EMC requirements for noise immunity	EN 61000-6-1
	EN 61000-6-2
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 55011 (EN 55022) Class B

Emitted interference

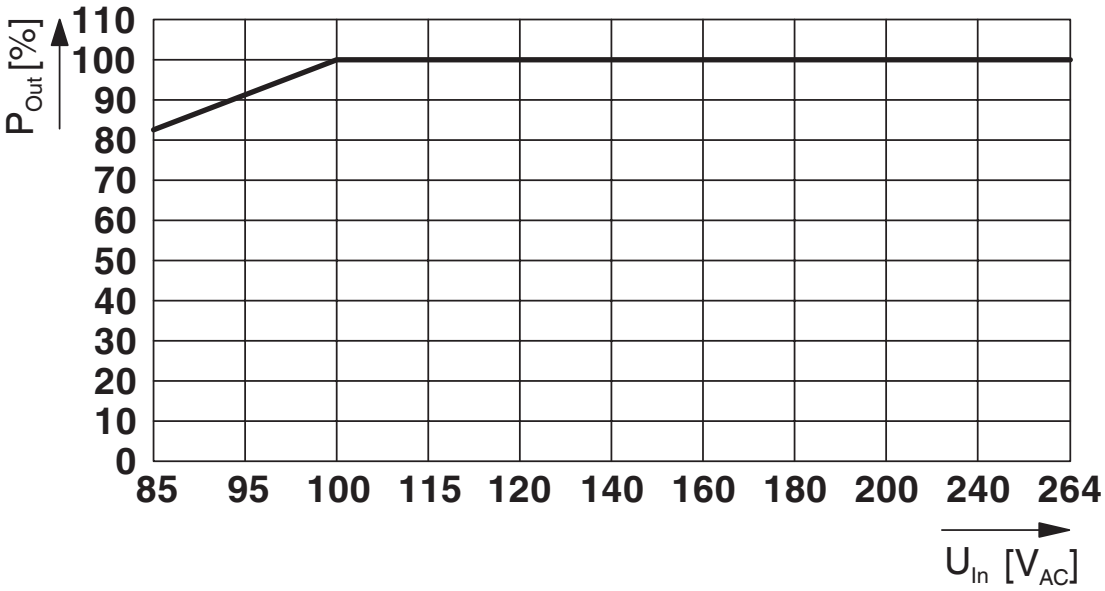
Standards/regulations	EN 61000-6-3

Drawings

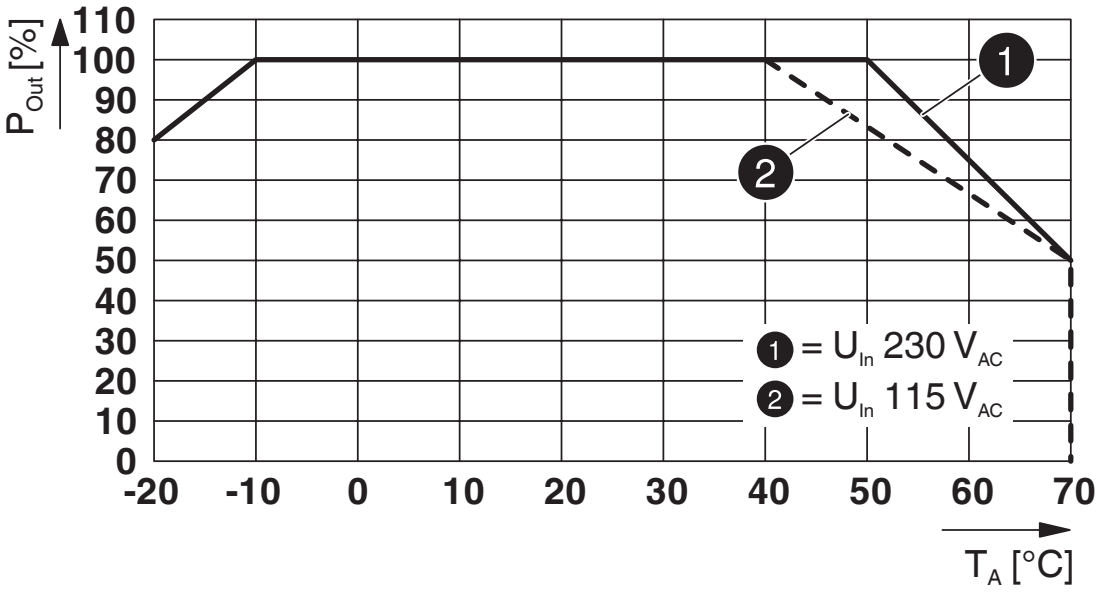
Block diagram



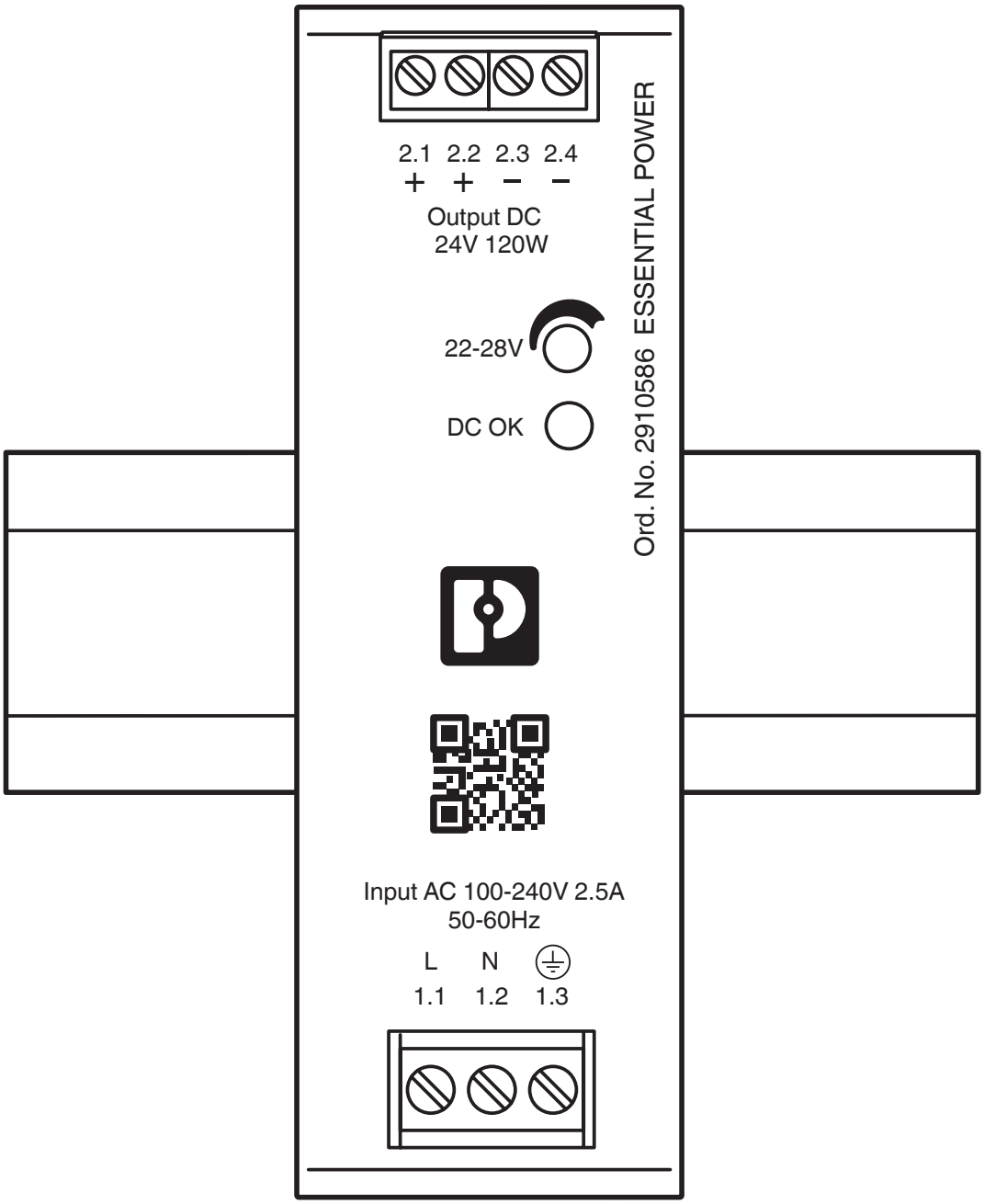
Diagram



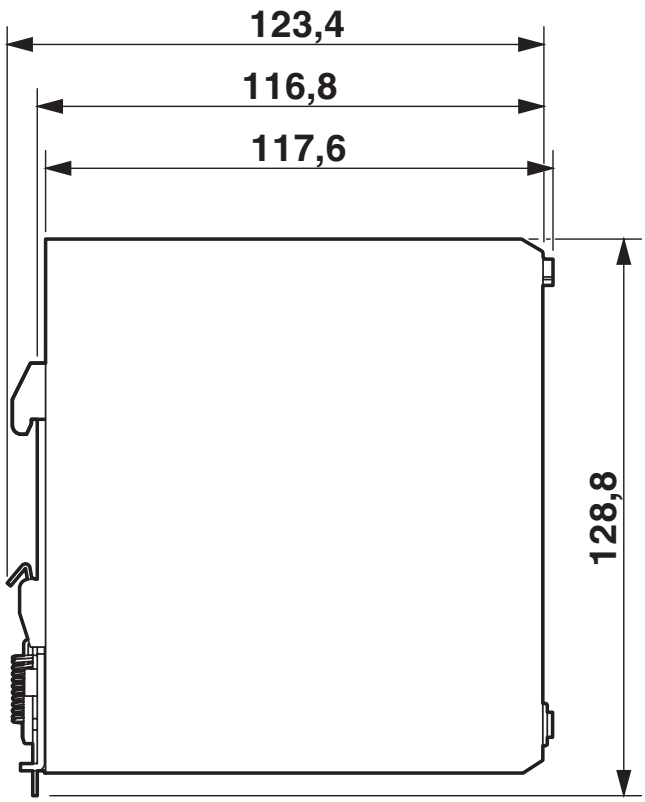
Diagram


P Out [%]
110
100
90
80
70
60
50
40
30
20
10
0
-20
-10
0
10
20
30
40
50
60
70
T A [°C]
1
2
1 = U In 230 V AC
2 = U In 115 V AC

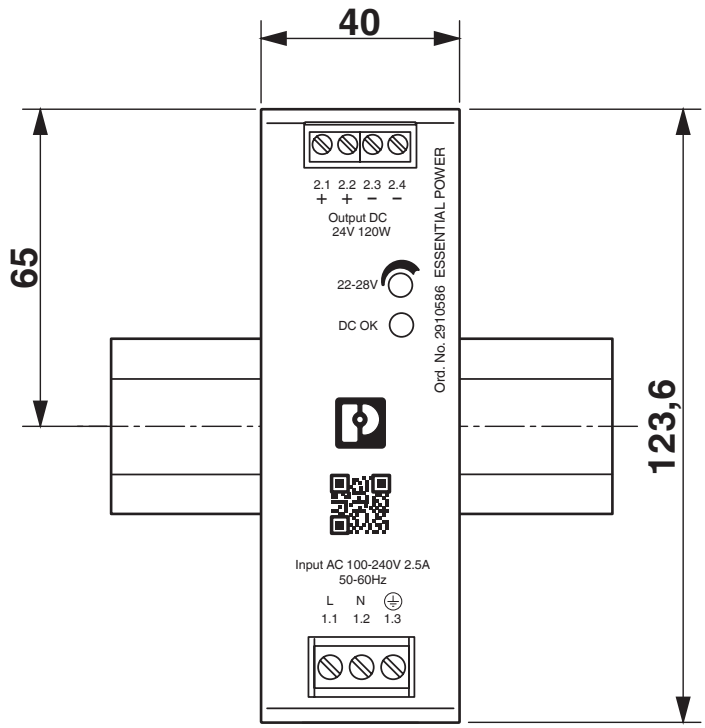
Schematic diagram



Dimensional drawing



Dimensional drawing



Approvals

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cULus Listed
Approval ID: E211944-20170721

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Approval ID: E211944-20170721

cULus Listed
Approval ID: E123528-20170721

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Approval ID: E123528-20170721

Classifications

ECLASS

ECLASS-11.0	27040701
ECLASS-13.0	27040701
ECLASS-12.0	27040701

ETIM

ETIM 8.0	EC002540

UNSPSC

UNSPSC 21.0	39121000

Environmental Product Compliance

REACh SVHC	Lead 7439-92-1

China RoHS	Environmentally Friendly Use Period = 10;
	For information on hazardous substances, refer to the manufacturer’s declaration available under “Downloads”

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