

# Power supply unit - ESSENTIAL-PS/1AC/24DC/120W/EE - 2910586

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Primary-switched ESSENTIAL POWER 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 convection cooling



## Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 464411
GTIN	4055626464411
Weight per Piece (excluding packing)	530.000 g
Custom tariff number	85044030
Country of origin	Thailand

## Technical data

### Dimensions

Width	40 mm
Height	123.6 mm
Depth	117.6 mm
Installation distance right/left	10 mm / 10 mm
Installation distance top/bottom	50 mm / 50 mm

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-20 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, non-condensing)
Degree of pollution	2

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## Technical data

### Ambient conditions

Installation height	≤ 5000 m (> 2000 m, Derating: 10 %/1000 m)
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### Input data

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)
AC frequency range	47 Hz ... 63 Hz
Discharge current to PE	< 0.25 mA (264 V AC)
Current consumption	2.2 A (115 V AC)
	1.2 A (230 V AC)
Nominal power consumption	249.56 VA
Inrush current	typ. 20 A (115 V AC)
	typ. 40 A (230 V AC)
Mains buffering time	typ. 20 ms (115 V AC)
	typ. 90 ms (230 V AC)
Input fuse	4 A (slow-blow, internal)
Type of protection	Transient surge protection
Protective circuit/component	Varistor

### Output data

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)
Residual ripple	< 120 mV <sub>PP</sub> (-10 °C ... +70 °C)
	< 240 mV <sub>PP</sub> (-20 °C ... -10 °C)
Output power	120 W
Typical response time	200 ms
Maximum power dissipation in no-load condition	0.65 W (115 V AC / 230 V AC)
Power loss nominal load max.	13.3 W (115 V AC / 230 V AC)

### General

Net weight	0.54 kg
Operating voltage display	Green LED
Efficiency	85 % (115 V AC)
	88 % (230 V AC)
MTBF (Telcordia SR-332)	> 700000 h
Insulation voltage input/output	3 kV AC
Insulation voltage input / PE	2 kV AC

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## Technical data

### General

Insulation voltage output / PE	0.5 kV AC
Degree of protection	IP20
Protection class	I (with PE connection)
Housing material	Aluminum
Assembly instructions	alignable: horizontally 10 mm, vertically 50 mm

### Connection data, input

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

### Connection data, output

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

### Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 55011 (EN 55022) Class B
Noise immunity	EN 61000-6-2
	EN 61000-6-1
Standards/regulations	EN 61000-6-3
Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Standard - Electrical safety	EN 60950-1
Standard – Safety extra-low voltage	EN 60950-1 (SELV)
UL approvals	UL/C-UL listed UL 508
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/s <sup>2</sup> (2g peak), 10 min. per cycle, 60 min. in the X direction
Approval - requirement of the semiconductor industry with regard to mains voltage dips	SEMI F47 - 0706 (200 V AC)

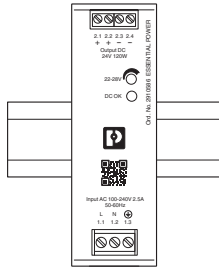
### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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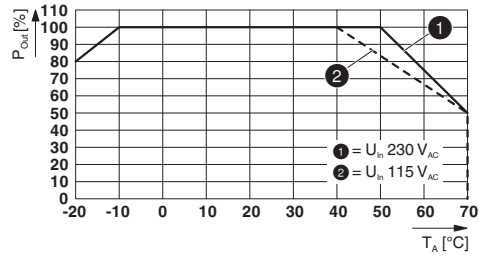
## Drawings

# Power supply unit - ESSENTIAL-PS/1AC/24DC/120W/EE - 2910586

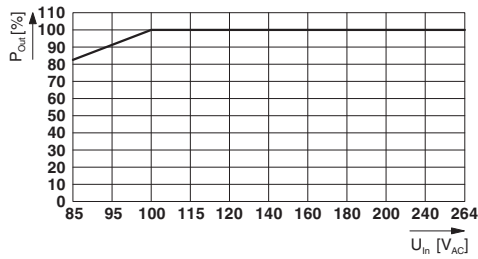
Schematic diagram



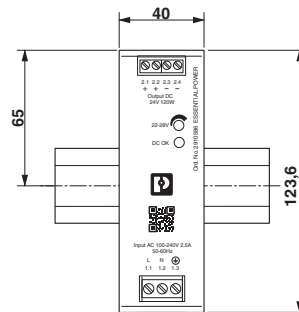
Diagram



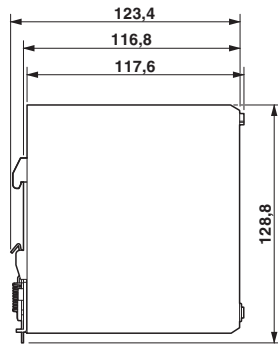
Diagram



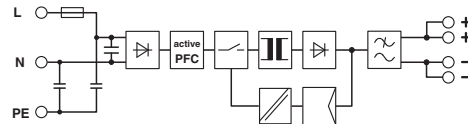
Dimensional drawing



Dimensional drawing



Block diagram



## Classifications

eCl@ss

eCl@ss 10.0.1	27040701
eCl@ss 11.0	27040701
eCl@ss 5.1	27049002
eCl@ss 9.0	27040701

## Approvals

Approvals

# Power supply unit - ESSENTIAL-PS/1AC/24DC/120W/EE - 2910586

## Approvals

Approvals

EAC / cULus Listed / cULus Listed / cULus Listed / cULus Listed / EAC

Ex Approvals

## Approval details

EAC		EAC*DE*08*02578
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cULus 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 131881
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EAC		EAC*DE*08*02578
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## Accessories

Accessories

Device protection

Type 3 surge protection device - PLT-EE-T3-230-FM - 2910544



Pluggable device protection, according to type 3/Class III, for 1-phase power supply networks with separate N and PE (3-conductor system: L1, N, PE) with remote indication contact.

## Power supply unit - ESSENTIAL-PS/1AC/24DC/120W/EE - 2910586

### Accessories

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Type 3 surge protection device - PLT-EE-T3-24-FM - 2910540



Pluggable device protection, according to type 3/Class III, for 1-phase power supply networks with separate N and PE (3-conductor system: L1, N, PE) with remote indication contact.

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