

# Power supply unit - ESSENTIAL-PS/1AC/24DC/480W/EE - 2910588

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)




Primary-switched ESSENTIAL POWER power supply for DIN rail mounting, input: 1-phase, output: 24 V DC / 480 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 463391
GTIN	4055626463391
Weight per Piece (excluding packing)	1,480.000 g
Custom tariff number	85044030
Country of origin	Thailand

## Technical data

### Dimensions

Width	85.5 mm
Height	123.6 mm
Depth	128.5 mm
Installation distance right/left	10 mm / 10 mm (100 V AC, up to 90% load)
Installation distance top/bottom	50 mm / 50 mm (100 V AC, up to 90% load)

### 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

# Power supply unit - ESSENTIAL-PS/1AC/24DC/480W/EE - 2910588

## Technical data

### Ambient conditions

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

### Input data

Nominal input voltage range	100 V AC ... 240 V AC
Input voltage range	85 V AC ... 264 V AC
AC frequency range	47 Hz ... 63 Hz
Discharge current to PE	< 1 mA (264 V AC)
Current consumption	5.4 A (115 V AC)
	2.7 A (230 V AC)
Nominal power consumption	523.27 VA
Inrush current	typ. 40 A (115 V AC)
	typ. 80 A (230 V AC)
Mains buffering time	typ. 10 ms (115 V AC)
	typ. 16 ms (230 V AC)
Input fuse	10 A (fast 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 <sub>Set</sub> )	22 V DC ... 28 V DC (max. power ≤ 480 W)
Nominal output current (I <sub>N</sub> )	20 A
Derating	> 40 °C (1.67 % / °C, 115 V AC)
	> 50 °C (2.5 % / °C, 230 V AC)
Max. capacitive load	8000 µF
Active current limitation	109% - 130% 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	480 W
Typical response time	1000 ms
Maximum power dissipation in no-load condition	5 W (115 V AC)
	4 W (230 V AC)
Power loss nominal load max.	50 W (115 V AC)
	40 W (230 V AC)

### General

Net weight	1.3 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

# Power supply unit - ESSENTIAL-PS/1AC/24DC/480W/EE - 2910588

## Technical data

### General

Insulation voltage input / PE	2 kV AC
Insulation voltage output / PE	0.5 kV AC
Degree of protection	IP20
Protection class	I (with PE connection)
Housing material	Aluminum

### Connection data, input

Connection method	Screw connection
Conductor cross section AWG min.	16
Conductor cross section AWG max.	12
Stripping length	7 mm

### Connection data, output

Connection method	Screw connection
Conductor cross section AWG min.	16
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)

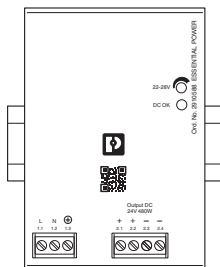
### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 10;
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

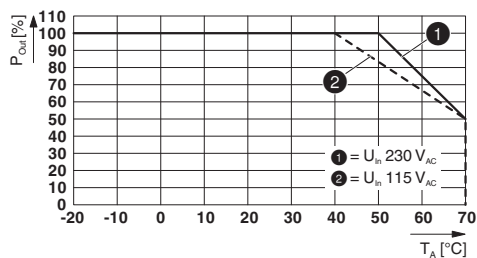
## Drawings

# Power supply unit - ESSENTIAL-PS/1AC/24DC/480W/EE - 2910588

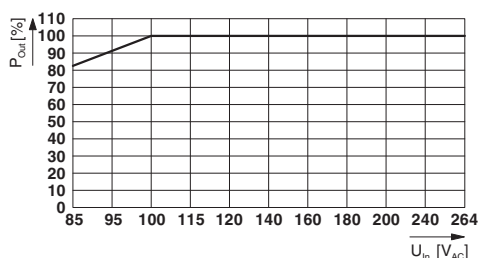
Schematic diagram



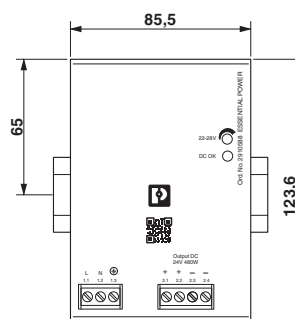
Diagram



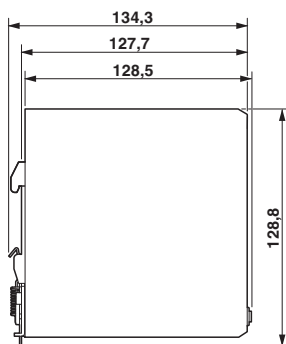
Diagram



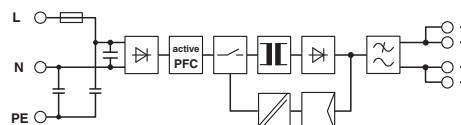
Dimensional drawing



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

ETIM

ETIM 6.0	EC002540
ETIM 7.0	EC002540

# Power supply unit - ESSENTIAL-PS/1AC/24DC/480W/EE - 2910588

## Approvals

Approvals

---

Approvals

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

---

Ex Approvals

---

## Approval details

EAC		EAC*DE*08*02578
-----	--	-----------------

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
--------------	--	---	---------------

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
--------------	--	---	---------------

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 338991
--------------	--	---	---------------

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 338991
--------------	--	---	---------------

EAC		EAC*DE*08*02578
-----	--	-----------------

## Accessories

Accessories

Device protection

## Power supply unit - ESSENTIAL-PS/1AC/24DC/480W/EE - 2910588

### Accessories

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.

---

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.

---

---