

# Power supply unit - ESSENTIAL-PS/3AC/24DC/480W/EE - 1018299

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>)



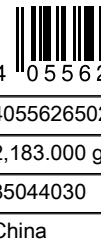
Primary-switched ESSENTIAL POWER power supply for DIN rail mounting, input: 3-phase, output: 24 V DC / 480 W

## 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 convention cooling



## Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 502465
GTIN	4055626502465
Weight per Piece (excluding packing)	2,183.000 g
Custom tariff number	85044030
Country of origin	China

## Technical data

### Dimensions

Width	115 mm
Height	130 mm
Depth	152.5 mm
Installation distances left/right	0 mm
Installation distances top/bottom	50 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)

# Power supply unit - ESSENTIAL-PS/3AC/24DC/480W/EE - 1018299

## Technical data

### Ambient conditions

Climatic class	3K3 (in acc. with EN 60721)
Degree of pollution	2

### Input data

Nominal input voltage range	3x 400 V AC ... 500 V AC
Input voltage range	3x 320 V AC ... 575 V AC (Derating < 360 V AC: 1,5 %/V)
Extended input voltage range in operation	3x 320 V AC ... 575 V AC (Derating < 360 V AC: 1,5 %/V)
AC frequency range	45 Hz ... 65 Hz
Discharge current to PE	< 3.5 mA
Current consumption	3x 1.1 A (400 V AC) 3x 0.8 A (480 V AC)
Nominal power consumption	666.33 VA
Inrush current	< 15 A
Mains buffering time	> 17 ms (3x 400 V AC)
Recommended breaker for input protection	6 A ... 16 A
Power factor (cos phi)	0.67
Type of protection	Transient surge protection
Protective circuit/component	Varistor

### Output data

Nominal output voltage	24 V DC $\pm$ 1 %
Setting range of the output voltage ( $U_{Set}$ )	22.5 V DC ... 29.5 V DC (> 24 V DC, constant capacity restricted)
Nominal output current ( $I_N$ )	20 A ( $U_{OUT} = 24$ V DC)
Derating	55 °C ... 70 °C (2.5%/K)
Connection in parallel	Yes, for redundancy and increased capacity
Connection in series	yes
Feedback voltage resistance	35 V DC
Protection against overvoltage at the output (OVP)	< 35 V DC
Max. capacitive load	unlimited
Active current limitation	Approx. 25 A
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	< 10 mV <sub>PP</sub>
Output power	480 W
Typical response time	< 1 s
Peak switching voltages nominal load	< 30 mV <sub>PP</sub>
Maximum power dissipation in no-load condition	< 6 W
Power loss nominal load max.	< 48 W

### General

Net weight	2 kg
------------	------

# Power supply unit - ESSENTIAL-PS/3AC/24DC/480W/EE - 1018299

## Technical data

### General

Operating voltage display	Green LED
Efficiency	91 % (at 400 V AC and nominal values)
Insulation voltage input/output	3 kV AC (type test)
	1.5 kV AC (routine test)
Insulation voltage output / PE	500 V DC
Protection class	I (with PE connection)
Degree of protection	IP20
MTBF (IEC 61709, SN 29500)	> 700000 h
Mounting position	horizontal DIN rail NS 35, EN 60715
Assembly instructions	alignable: horizontally 0 mm, vertically 50 mm

### 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.	14
Stripping length	9 mm
Screw thread	M2,5

### Connection data, output

Connection method	Screw connection
Conductor cross section solid min.	0.5 mm <sup>2</sup>
Conductor cross section solid max.	6 mm <sup>2</sup>
Conductor cross section flexible min.	0.5 mm <sup>2</sup>
Conductor cross section flexible max.	4 mm <sup>2</sup>
Conductor cross section AWG min.	12
Conductor cross section AWG max.	10
Stripping length	14 mm
Screw thread	M3

### Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 55011 (EN 55022) Class B
Noise immunity	EN 61000-6-2:2005
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

# Power supply unit - ESSENTIAL-PS/3AC/24DC/480W/EE - 1018299

## Technical data

### Standards and Regulations

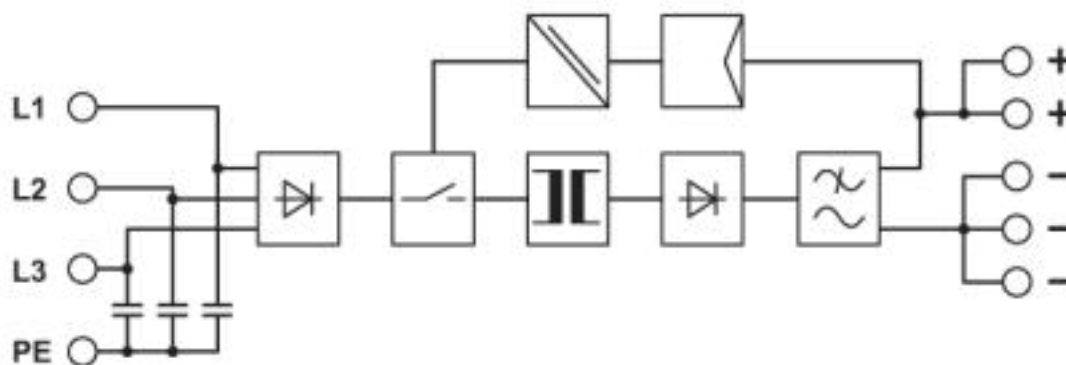
Frequency range	1.4 GHz ... 2 GHz
Test field strength	3 V/m
Standards/regulations	EN 61000-4-4
Comments	Criterion B
Standards/regulations	EN 61000-6-3
	EN 61000-4-6
Frequency range	0.15 MHz ... 80 MHz
Voltage	10 V (Test Level 3)
Standards/regulations	EN 61000-4-11
Low Voltage Directive	Conformance with LV directive 2006/95/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	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.
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
------------	----------------

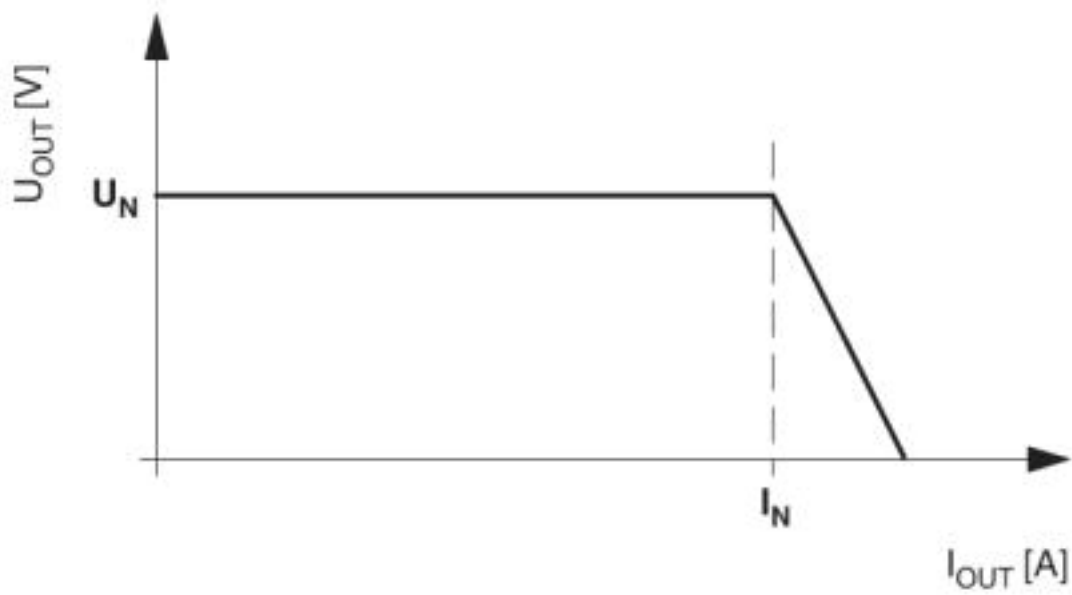
## Drawings

Block diagram

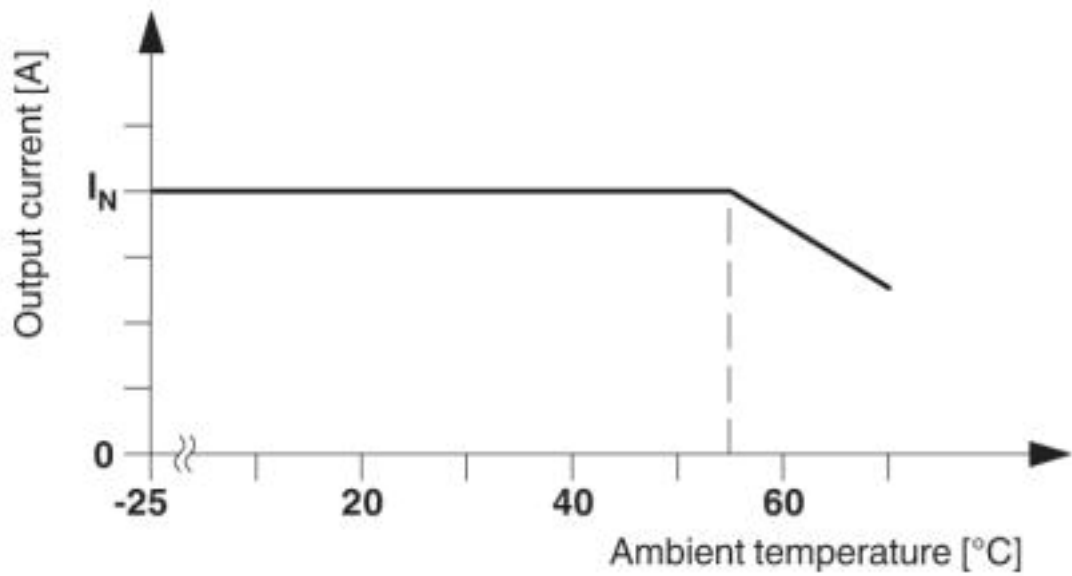


# Power supply unit - ESSENTIAL-PS/3AC/24DC/480W/EE - 1018299

Diagram

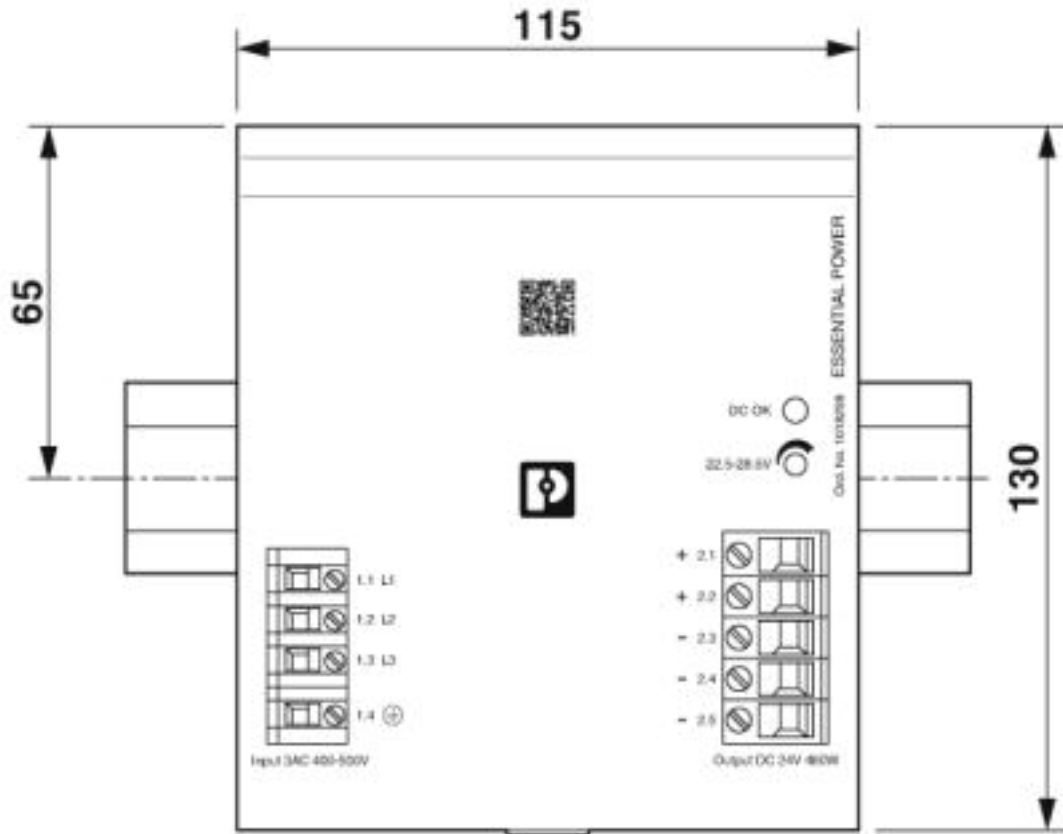


Diagram



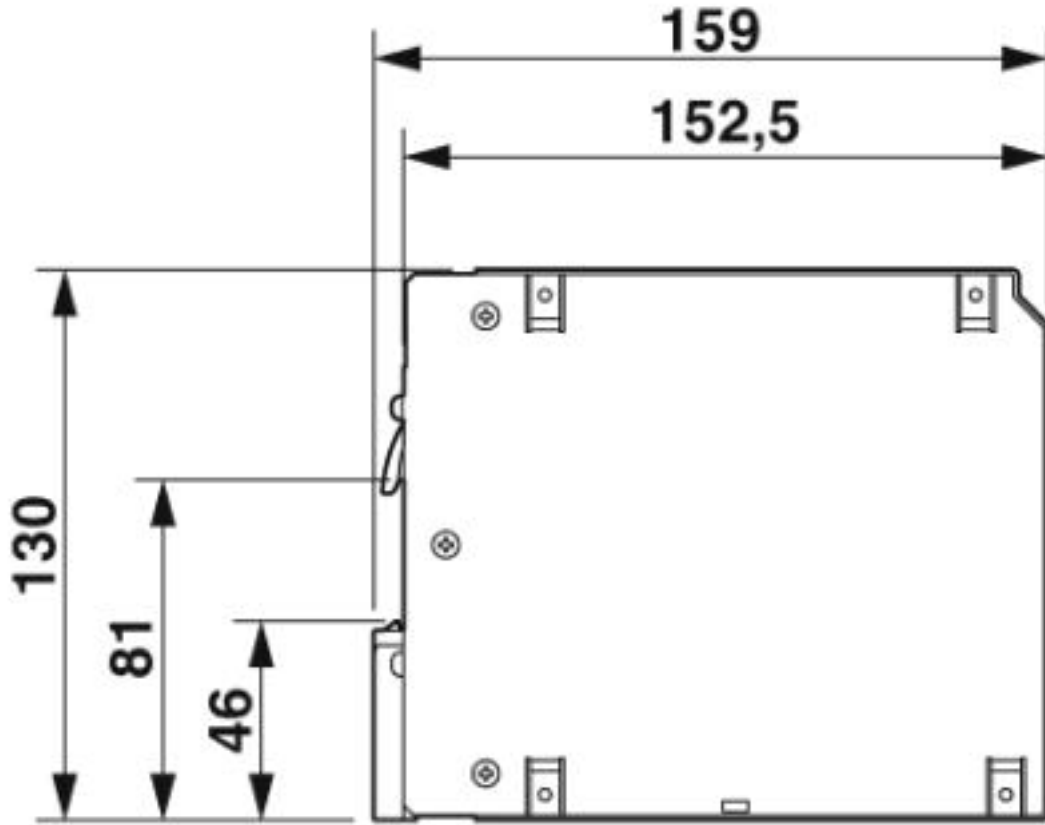
# Power supply unit - ESSENTIAL-PS/3AC/24DC/480W/EE - 1018299

Dimensional drawing



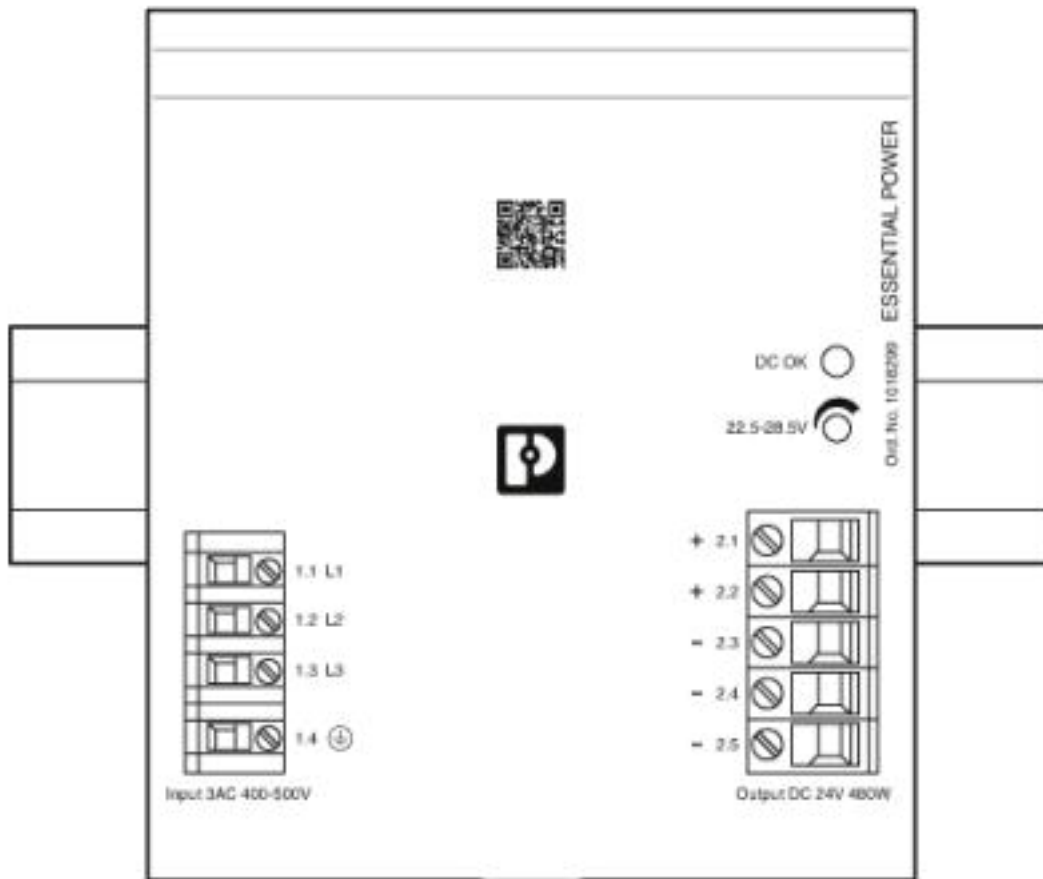
# Power supply unit - ESSENTIAL-PS/3AC/24DC/480W/EE - 1018299

Dimensional drawing

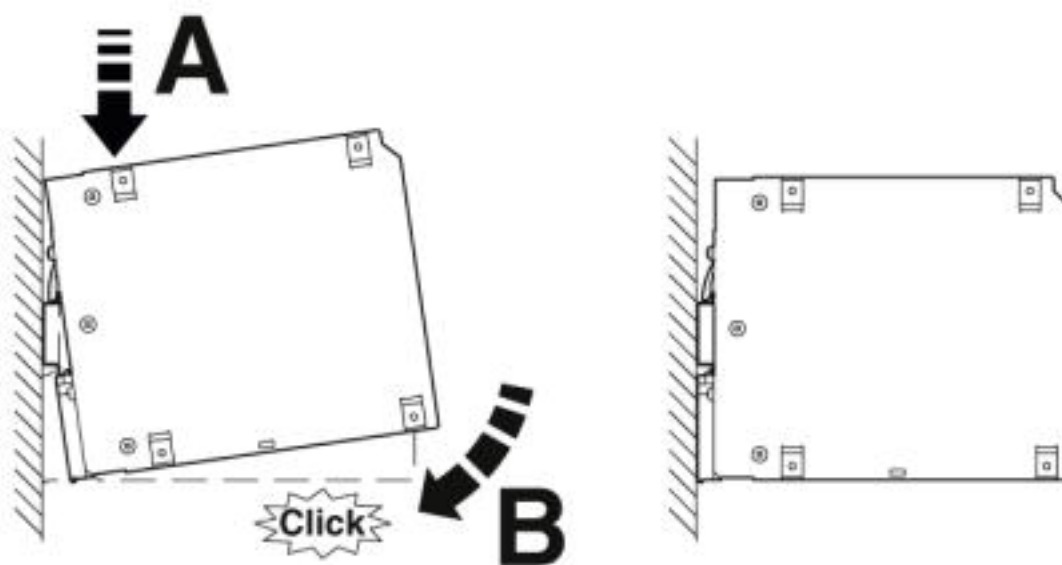


# Power supply unit - ESSENTIAL-PS/3AC/24DC/480W/EE - 1018299

Schematic diagram



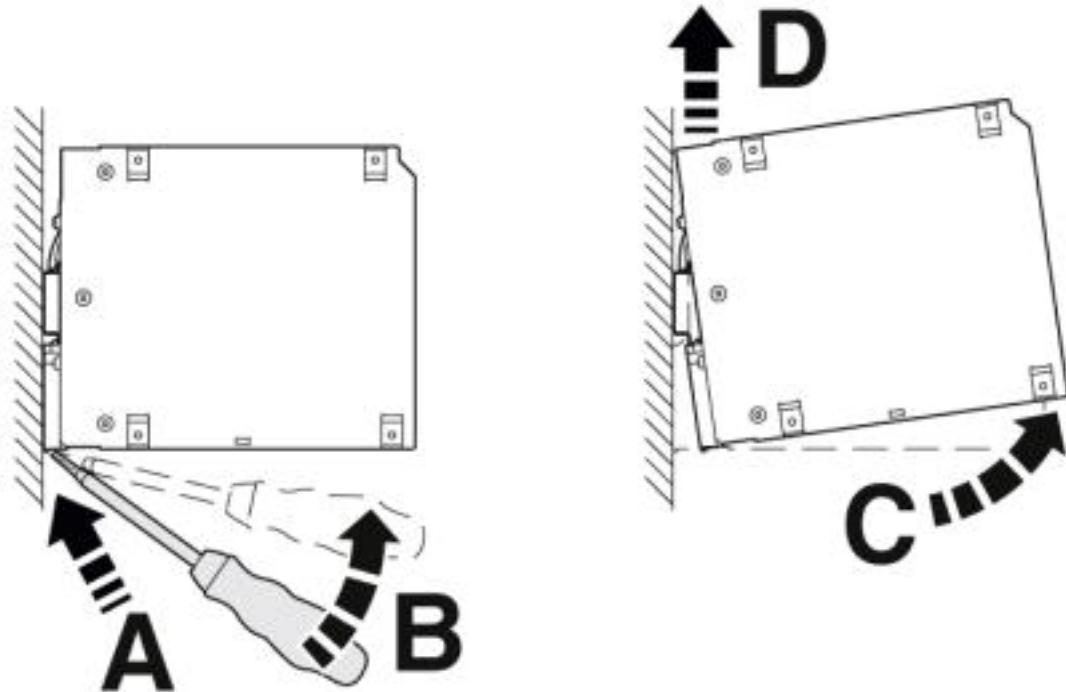
Schematic diagram





# Power supply unit - ESSENTIAL-PS/3AC/24DC/480W/EE - 1018299

Schematic diagram



## Classifications

eCl@ss

eCl@ss 6.0	27049000
eCl@ss 7.0	27049002
eCl@ss 9.0	27040701

ETIM

ETIM 6.0	EC002540
ETIM 7.0	EC002540

## Approvals

Approvals

---

Approvals

EAC

---


Ex Approvals

---

Approval details

# Power supply unit - ESSENTIAL-PS/3AC/24DC/480W/EE - 1018299

## Approvals

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

## Accessories

### Accessories

#### Device protection

Type 3 surge protection device - PLT-SEC-T3-3S-230-FM - 2905230



Plug-in device protection, according to type 3/class III, for 3-phase power supply networks with separate N and PE (5-conductor system: L1, L2, L3, N, PE), with integrated surge-proof fuse and 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.