

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



1018299

<https://www.phoenixcontact.com/au/products/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 documentation. Our General Terms of Use for Downloads are valid.



Primary-switched ESSENTIAL edition 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 convection cooling

## Commercial Data

Item number	1018299
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CMPB33
Product Key	CMPB33
GTIN	4055626502465
Weight per Piece (including packing)	2,149 g
Weight per Piece (excluding packing)	2,183 g
Customs tariff number	85044083
Country of origin	CN

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



1018299

<https://www.phoenixcontact.com/au/products/1018299>

## Technical Data

### Input data

#### AC operation

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)
Input voltage range AC	3x 320 V AC ... 575 V AC (Derating < 360 V AC: 1,5 %/V) 2x 360 V AC ... 575 V AC (for 2-phase operation)
Voltage type of supply voltage	AC
Inrush current	< 15 A
Inrush current integral ( $I^2t$ )	0.5 A <sup>2</sup> s
AC frequency range	45 Hz ... 65 Hz
Mains buffering time	> 17 ms (3x 400 V AC)
Current consumption	3x 1.1 A (400 V AC) 3x 0.8 A (480 V AC)
Nominal power consumption	666.33 VA
Protective circuit	Transient surge protection; Varistor
Power factor (cos phi)	0.67
Typical response time	< 1 s
Permissible backup fuse	B6 B10 B16
Recommended breaker for input protection	6 A ... 16 A
Discharge current to PE	< 3.5 mA

### Output data

Efficiency	91 % (at 400 V AC and nominal values)
Output characteristic	U/I
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)
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>
Short-circuit-proof	yes
No-load proof	yes
Output power	480 W
Peak switching voltages nominal load	< 30 mV <sub>PP</sub>

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



1018299

<https://www.phoenixcontact.com/au/products/1018299>

Maximum no-load power dissipation	< 6 W
Power loss nominal load max.	< 48 W
Rise time	< 2 ms ( $U_{OUT}$ (10 % ... 90 %))
Connection in parallel	yes, for redundancy and increased capacity
Connection in series	yes

## 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
Tightening torque, min	0.4 Nm
Tightening torque max	0.5 Nm

### 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
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

## LED signaling

Types of signaling	LED
Operating voltage display	Green LED

### Signal output

Status display	"DC OK" LED green
Note on status display	$U_{OUT} > 21.5$ V: LED lights up

## Electrical properties

Number of phases	3.00
Insulation voltage input/output	3 kV AC (type test)
	1.5 kV AC (routine test)

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



1018299

<https://www.phoenixcontact.com/au/products/1018299>

Insulation voltage output / PE	500 V DC
--------------------------------	----------

## Product properties

Product type	Power supply
Product family	ESSENTIAL POWER
MTBF (IEC 61709, SN 29500)	> 700000 h

## Insulation characteristics

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

## Dimensions

### Installation dimensions

Installation distance right/left	0 mm / 0 mm
Installation distance top/bottom	50 mm / 50 mm

## Mounting

Mounting type	DIN rail mounting
Assembly instructions	alignable: horizontally 0 mm, vertically 50 mm
Mounting position	horizontal DIN rail NS 35, EN 60715
With protective coating	No

## Material specifications

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

## Environmental and real-life conditions

### 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
Climatic class	3K3 (in acc. with EN 60721)
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, non-condensing)
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.

## 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)

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



1018299

<https://www.phoenixcontact.com/au/products/1018299>

## Approval data

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

## Conformity/Approvals

SIL in accordance with IEC 61508	0
Performance level according to ISO 13849	without

## EMC data

Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
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
Noise emission	EN 55011 (EN 55022) Class B
Noise immunity	EN 61000-6-2:2005

## Electrostatic discharge

Standards/regulations	EN 61000-4-2
-----------------------	--------------

## Electrostatic discharge

Contact discharge	8 kV (Test Level 4)
Discharge in air	8 kV (Test Level 3)
Comments	Criterion A

## Electromagnetic HF field

Standards/regulations	EN 61000-4-3
-----------------------	--------------

## Electromagnetic HF field

Frequency range	80 MHz ... 1 GHz
Test field strength	10 V/m
Frequency range	1 GHz ... 2 GHz
Test field strength	10 V/m
Frequency range	2 GHz ... 3 GHz
Test field strength	10 V/m
Comments	Criterion A

## Fast transients (burst)

Standards/regulations	EN 61000-4-4
-----------------------	--------------

## Fast transients (burst)

Input	4 kV (Test Level 4 - asymmetrical)
Output	4 kV (Test Level 4 - asymmetrical)
Signal	2 kV (Test Level 3 - asymmetrical)

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



1018299

<https://www.phoenixcontact.com/au/products/1018299>

Comments	Criterion A
Surge voltage load (surge)	
Standards/regulations	EN 61000-4-5
Input	2 kV (Test Level 3 - symmetrical)
	4 kV (Test Level 4 - asymmetrical)
Output	1 kV (Test Level 2 - symmetrical)
	2 kV (Test Level 3 - asymmetrical)
Comments	Criterion A
Conducted interference	
Standards/regulations	EN 61000-4-6
Conducted interference	
Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V (Test Level 3)
Voltage dips	
Standards/regulations	EN 61000-4-11
Emitted interference	
Standards/regulations	EN 61000-6-3
Radio interference voltage in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential
Emitted radio interference in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential
Criteria	
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

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

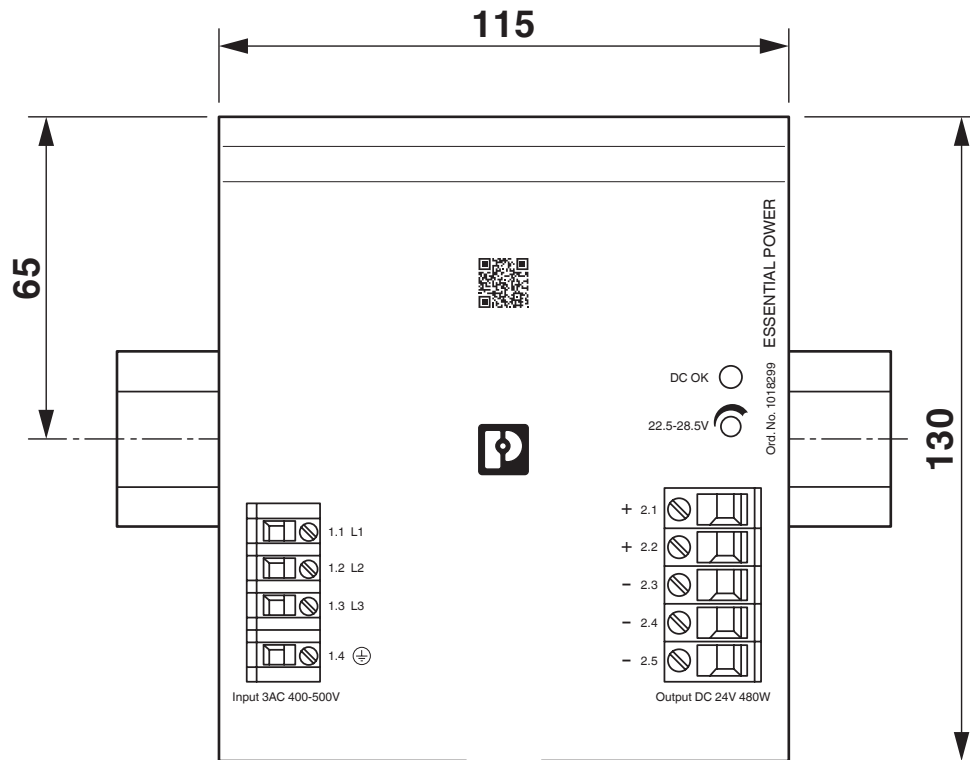


1018299

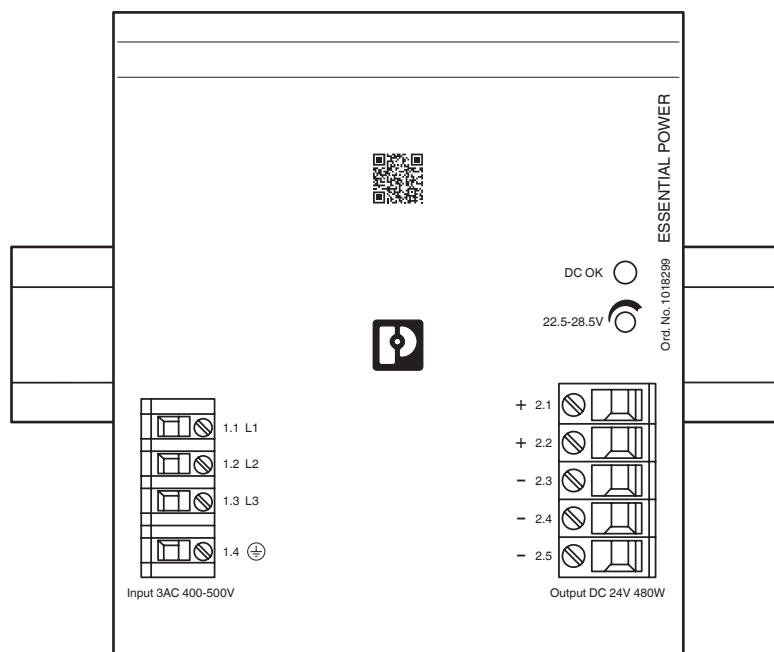
<https://www.phoenixcontact.com/au/products/1018299>

## Drawings

Dimensional drawing



Schematic diagram



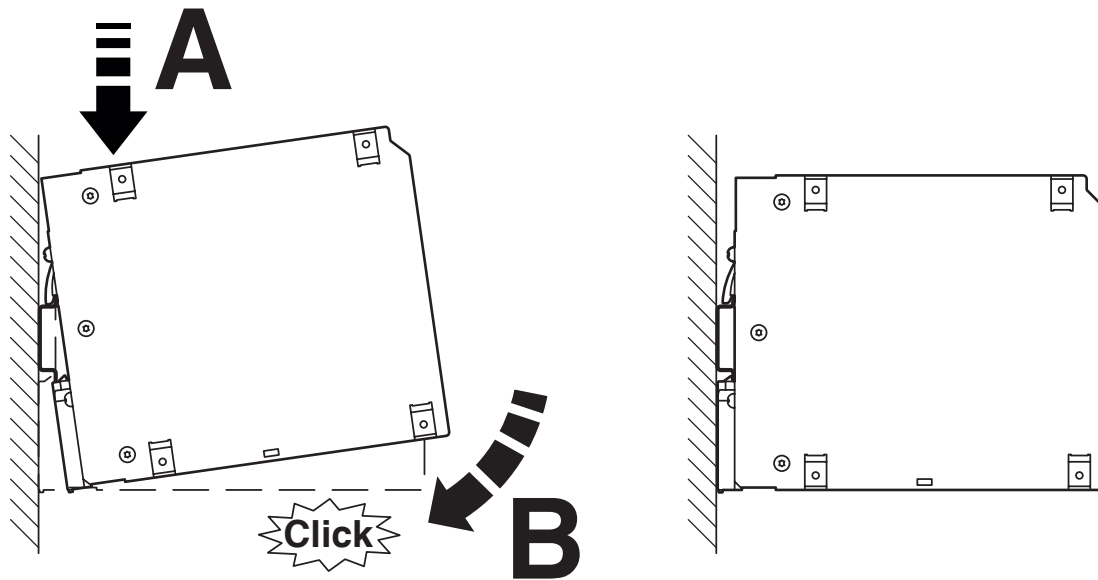
# ESSENTIAL-PS/3AC/24DC/480W/EE - Power supply unit



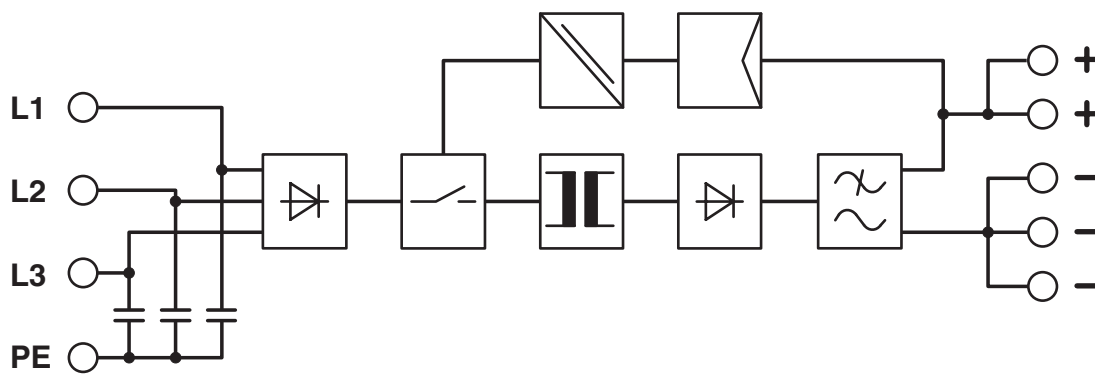
1018299

<https://www.phoenixcontact.com/au/products/1018299>

Schematic diagram



Block diagram





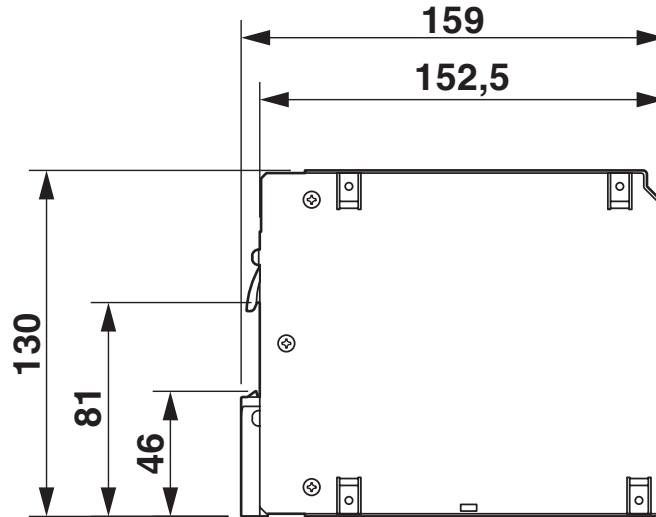
# ESSENTIAL-PS/3AC/24DC/480W/EE - Power supply unit



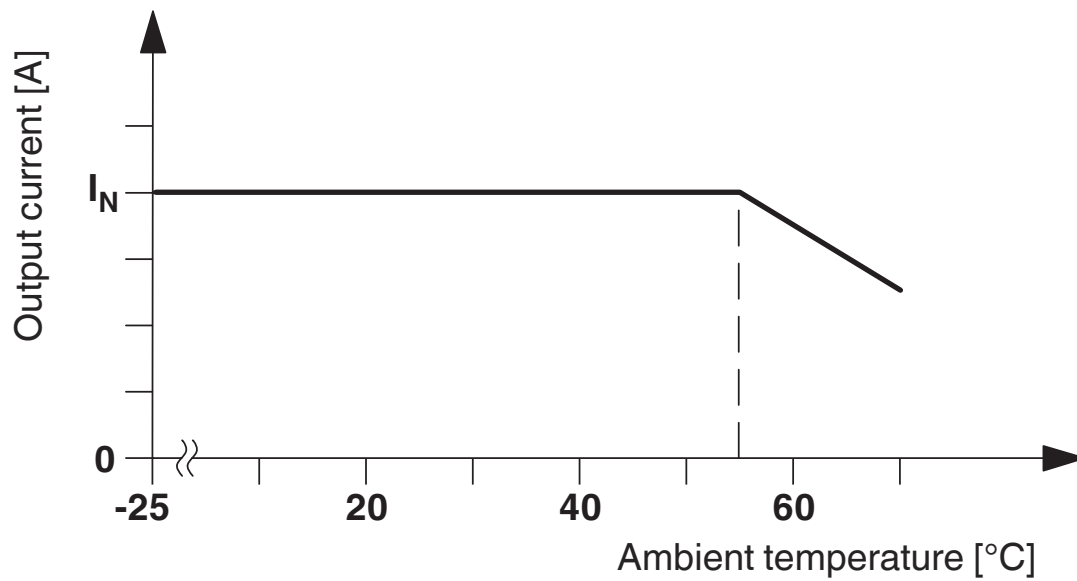
1018299

<https://www.phoenixcontact.com/au/products/1018299>

Dimensional drawing



Diagram



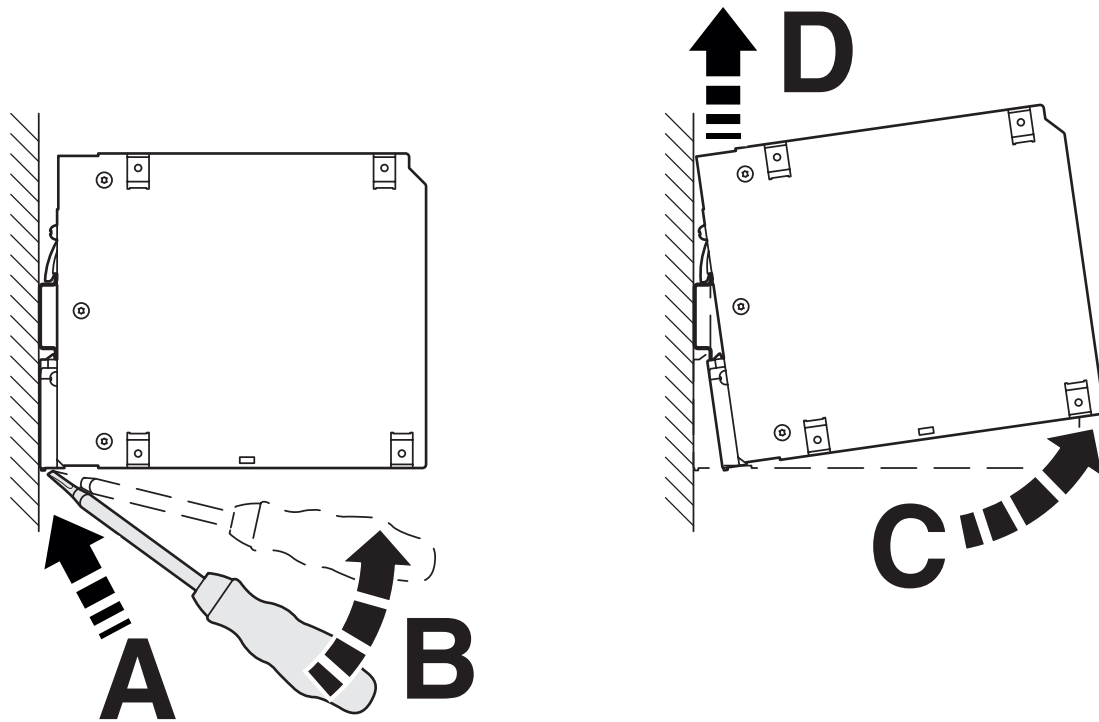
# ESSENTIAL-PS/3AC/24DC/480W/EE - Power supply unit



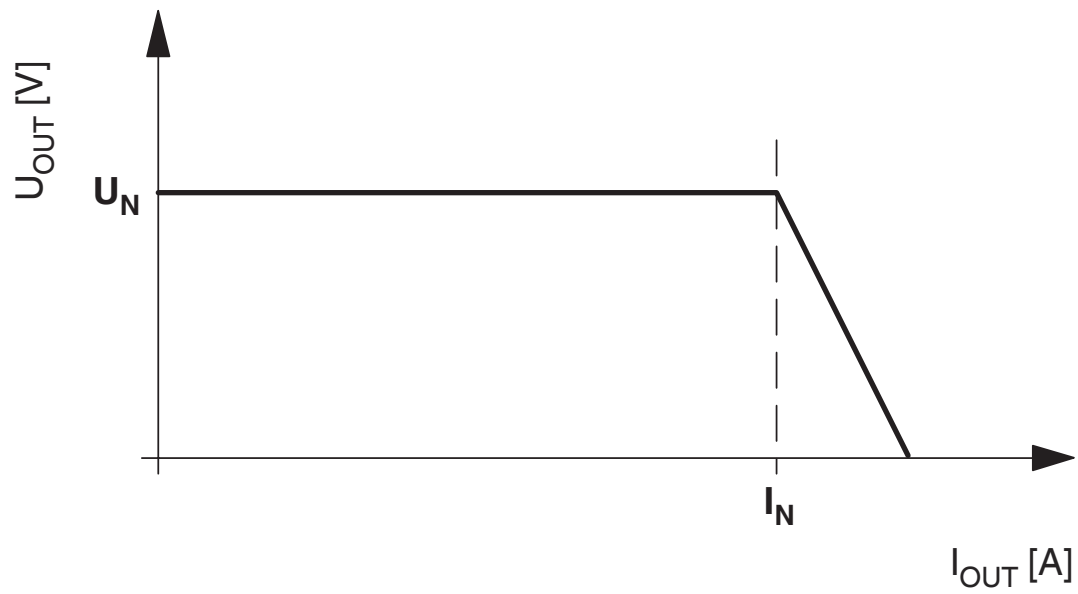
1018299

<https://www.phoenixcontact.com/au/products/1018299>

Schematic diagram



Diagram



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



1018299

<https://www.phoenixcontact.com/au/products/1018299>

## Classifications

### ECLASS

ECLASS-10.0.1	27040701
ECLASS-11.0	27040701
ECLASS-12.0	27040701

### ETIM

ETIM 8.0	EC002540
----------	----------

### UNSPSC

UNSPSC 21.0	39121000
-------------	----------

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



1018299

<https://www.phoenixcontact.com/au/products/1018299>

## Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 25;
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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



1018299

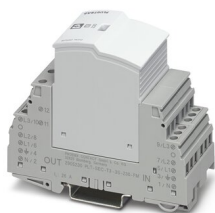
<https://www.phoenixcontact.com/au/products/1018299>

## Accessories

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

2905230

<https://www.phoenixcontact.com/au/products/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.

---

Phoenix Contact 2023 © - all rights reserved  
<https://www.phoenixcontact.com>

PHOENIX CONTACT PTY Ltd  
Unit 7, 2-8 South Street  
Rydalmere NSW 2116  
1300 786 411  
[customerservice@phoenixcontact.com.au](mailto:customerservice@phoenixcontact.com.au)