

# Power supply unit - UNO2-PS/1AC/24DC/480W



2910105

<https://www.phoenixcontact.com/pc/products/2910105>

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Primary-switched power supply unit, UNO POWER, Screw connection, DIN rail mounting, input: 1-phase, output: 24 V DC / 20 A

## Your advantages

- Save space in the control cabinet, thanks to an extremely narrow overall width of just 59 mm
- Save energy, thanks to a high degree of efficiency
- Outdoor installation possible, with a wide temperature range of -25°C ... +70°C
- Simple output voltage monitoring, thanks to the floating DC OK relay contact

## Commercial Data

Item number	2910105
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	CMPV13
Catalog Page	Page 268 (C-4-2019)
GTIN	4055626456652
Weight per Piece (including packing)	1,252.4 g
Weight per Piece (excluding packing)	1,084 g
Customs tariff number	85044083
Country of origin	TH

## Technical Data

### Input data

Supply system configuration	Star network (TN, TT, IT (PE))
Nominal input voltage range	100 V AC ... 240 V AC
Input voltage range	100 V AC ... 240 V AC -15 % ... +10 %
Derating	< 90 V AC (1 %/V)
Typical national grid voltage	120 V AC
	230 V AC
Voltage type of supply voltage	AC
Inrush current	typ. 15 A (at 25 °C)
Inrush current integral ( $I^2t$ )	< 1 A <sup>2</sup> s
Frequency range ( $f_N$ )	50 Hz ... 60 Hz $\pm$ 10 %
Mains buffering time	typ. 17 ms (120 V AC)
	typ. 18 ms (230 V AC)
Current consumption	5.4 A (100 V AC)
	4.4 A (120 V AC)
	2.3 A (230 V AC)
	2.2 A (240 V AC)
Protective circuit	Transient surge protection; Varistor, gas-filled surge arrester
Switch-on time	typ. 1 s
Device mains fuse	8 A internal (device protection), fast-blow
Recommended breaker for input protection	10 A ... 16 A (Characteristic B, C, D, K or comparable)
Discharge current to PE	< 3.5 mA

### Output data

Efficiency	typ. 93 % (120 V AC)
	typ. 94.6 % (230 V AC)
Nominal output voltage	24 V DC
Setting range of the output voltage ( $U_{Set}$ )	24 V DC ... 28 V DC (> 24 V DC, constant capacity restricted)
Nominal output current ( $I_N$ )	20 A
Short-circuit-proof	yes
No-load proof	yes
Derating	55 °C ... 70 °C
Crest factor	typ. 1,667 (120 V AC)
	typ. 1,75 (230 V AC)
Output power ( $P_N$ )	480 W
Connection in parallel	yes, for redundancy
Connection in series	yes, for increased output voltage
Feedback voltage resistance	$\leq$ 35 V DC
Protection against overvoltage at the output (OVP)	$\leq$ 35 V DC
Residual ripple	typ. 70 mV <sub>pp</sub> (with nominal values)
	< 1 % (change in load, static 10 % ... 90 %)

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Control deviation	< 3 % (change in load, dynamic 10 % ... 90 %)
	< 0.1 % (change in input voltage $\pm 10$ %)
Rise time	< 1 s ( $U_{OUT} = 10$ % ... 90 %)
Minimum no-load power dissipation	< 2.9 W (120 V AC)
Maximum no-load power dissipation	< 3 W (230 V AC)
Minimum nominal load power dissipation	< 37 W (120 V AC)
Power loss nominal load max.	< 28 W (230 V AC)

## Signal relay 13/14

Connection level	3.x
Connection labeling	3.1 (13), 3.2 (14)
Switch contact (floating)	OptoMOS
Switching voltage	max. 30 V AC/DC
	max. 60 V DC
Current carrying capacity	max. 50 mA
State condition	$U_{OUT} > 0,9 \times U_N$ (Contact closed)
	$U_{OUT} < 0,9 \times U_N$ (Contact open)

## Connection data

### Input

Position	1.x
Identification	1.1 (□), 1.2 (L), 1.3 (N)

### Conductor connection

Connection method	Screw connection
rigid	0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>
flexible	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
flexible with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup>
flexible with ferrule with plastic sleeve	0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup>
rigid (AWG)	24 ... 10 (Cu)
Stripping length	8 mm
Tightening torque	0.5 Nm ... 0.6 Nm
	4 lb <sub>f</sub> -in. ... 5 lb <sub>f</sub> -in.
Drive form screw head	Slotted L

### Output

Position	2.x
Identification	2.1, 2.2 (+), 2.3, 2.4 (-)

### Conductor connection

Connection method	Screw connection
rigid	0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>
flexible	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
flexible with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup>
flexible with ferrule with plastic sleeve	0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup>

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rigid (AWG)	24 ... 10 (Cu)
Stripping length	8 mm
Tightening torque	0.5 Nm ... 0.6 Nm 4 lb <sub>f</sub> -in. ... 5 lb <sub>f</sub> -in.
Drive form screw head	Slotted L

## Signal

Position	3.x
Identification	3.1 (13), 3.2 (14)

## Conductor connection

Connection method	Screw connection
rigid	0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>
flexible	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
flexible with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup>
flexible with ferrule with plastic sleeve	0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup>
rigid (AWG)	24 ... 10 (Cu)
Stripping length	8 mm
Tightening torque	0.5 Nm ... 0.6 Nm 4 lb <sub>f</sub> -in. ... 5 lb <sub>f</sub> -in.
Drive form screw head	Slotted L

## LED signaling

Types of signaling	LED DC OK – signal state operation ( $U_N = 24 \text{ V DC}$ , $I_{Out} = I_N$ )
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## Electrical properties

Number of phases	1.00
Insulation voltage input/output	4 kV AC (type test) 3 kV AC (routine test)
Insulation voltage input / PE	3.5 kV AC (type test) 2.4 kV AC (routine test)

## Product properties

Product type	Power supply
Product family	UNO POWER
MTBF (IEC 61709, SN 29500)	> 900000 h (25 °C) > 530000 h (40 °C) > 280000 h (55 °C)
Environmental protection directive	RoHS Directive 2011/65/EU WEEE Reach

## Insulation characteristics

Protection class	I
Degree of pollution	2

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## Dimensions

Dimensional drawing	
Width	59 mm
Height	130 mm
Depth Device depth (DIN rail mounting)	125 mm (Device depth (DIN rail mounting))

### Installation dimensions

Installation distance right/left (active, passive)	0 mm / 0 mm ( $P_{Out} \geq 50\%$ )
Installation distance top/bottom (active, passive)	30 mm / 30 mm ( $P_{Out} \geq 50\%$ )

## Mounting

Mounting type	DIN rail mounting
Assembly instructions	alignable: 0 mm horizontally, 30 mm vertically
Mounting position	horizontal DIN rail NS 35, EN 60715
With protective coating	No

## Material specifications

Flammability rating according to UL 94	V0 (Housing, terminal blocks)
Housing material	Metal
Hood version	Stainless steel
Side element version	Aluminum
Foot latch material	Sheet steel, zinc-plated
Housing material	Aluminum (AlMg3) / sheet steel, zinc-plated

## 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
Ambient temperature (start-up type tested)	-40 °C
Maximum altitude	≤ 3000 m (> 2000 m, Derating: 10 %/1000 m)
Climatic class	3K3 (in acc. with EN 60721)
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, non-condensing)
Shock (operation)	18 ms, 30g, per spatial direction (IEC 60068-2-27)
Vibration (operation)	10 Hz ... 50 Hz, amplitude ±0.2 mm 50 Hz to 150 Hz, 2.3 g, 90 min.

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## Standards and regulations

### Overvoltage category

EN 61010-1	II ( $\leq 3000$ m)
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### Overvoltage category

EN 62477-1	III ( $\leq 3000$ m)
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### Safety of power supply units up to 1100 V (insulation distances)

Standards/specifications	DIN EN 61558-2-16
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### Electrical safety

Standards/specifications	IEC 61010-2-201 (SELV)
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### Electronic equipment for use in power installations

Standards/specifications	EN 50178/VDE 0160 (PELV)
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### Safety for measurement, control, and laboratory equipment

Standards/specifications	IEC 61010-1
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### Protective extra-low voltage

Standards/specifications	IEC 61010-1 (SELV)
	IEC 61010-2-201 (PELV)

### Safe isolation

Standards/specifications	IEC 61558-2-16
	IEC 61010-2-201

### Limitation of harmonic line currents

Standards/specifications	EN 61000-3-2
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### Mains voltage dips

Standards/specifications	SEMI F47 - 0706 (185 V AC)
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## Approval data

### UL

Identification	UL/C-UL Listed UL 61010-1
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### UL

Identification	UL/C-UL Listed UL 61010-2-201
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### UL

Identification	UL/C-UL Listed ANSI/UL 121201 Class I, Division 2, Groups A, B, C, D (Hazardous Location)
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### SIQ

Identification	CB scheme (IEC 61010-1, IEC 61010-2-201)
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## EMC data

# Power supply unit - UNO2-PS/1AC/24DC/480W



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Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
EMC requirements for noise immunity	EN 61000-6-2
Conducted noise emission	EN 55016
	EN 61000-6-3 (Class B)
Interference emission	Interference emission in accordance with EN 61000-6-3 (residential and commercial) and EN 61000-6-4 (industrial)
Noise emission	EN 55016
	EN 61000-6-3 (Class B)
Noise immunity	EN 61000-6-2:2005

## Harmonic currents

Standards/regulations	EN 61000-3-2
	EN 61000-3-2 (Class A)
Frequency range	0 kHz ... 2 kHz

## Flicker

Standards/regulations	EN 61000-3-3
Frequency range	0 kHz ... 2 kHz

## Electrostatic discharge

Standards/regulations	EN 61000-4-2
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## Electrostatic discharge

Contact discharge	6 kV (Test Level 3)
Discharge in air	8 kV (Test Level 3)
Comments	Criterion A

## Electromagnetic HF field

Standards/regulations	EN 61000-4-3
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## Electromagnetic HF field

Frequency range	80 MHz ... 1 GHz
Test field strength	10 V/m (Test Level 3)
Frequency range	1 GHz ... 6 GHz
Test field strength	10 V/m (Test Level 3)
Comments	Criterion A

## Fast transients (burst)

Standards/regulations	EN 61000-4-4
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## Fast transients (burst)

Input	4 kV (Test Level 4 - asymmetrical)
Output	2 kV (Test Level 3 - asymmetrical)
Comments	Criterion A

## Surge voltage load (surge)

Standards/regulations	EN 61000-4-5
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Input	2 kV (Test Level 4 - symmetrical)
	4 kV (Test Level 4 - asymmetrical)
Output	1 kV (Test Level 3 - symmetrical)
	2 kV (Test Level 3 - asymmetrical)
Comments	Criterion A

## Conducted interference

Standards/regulations	EN 61000-4-6
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## Conducted interference

Input/Output	asymmetrical
Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V (Test Level 3)

## Voltage dips

Standards/regulations	EN 61000-4-11
Voltage	230 V AC
Frequency	50 Hz
Voltage dip	70 %
Number of periods	25 / 30 periods
Comments	Criterion A
Voltage dip	40 %
Number of periods	12 periods
Additional text	Test Level 2
Comments	Criterion A
Voltage dip	0 %
Number of periods	1 period
Additional text	Test Level 2
Comments	Criterion B

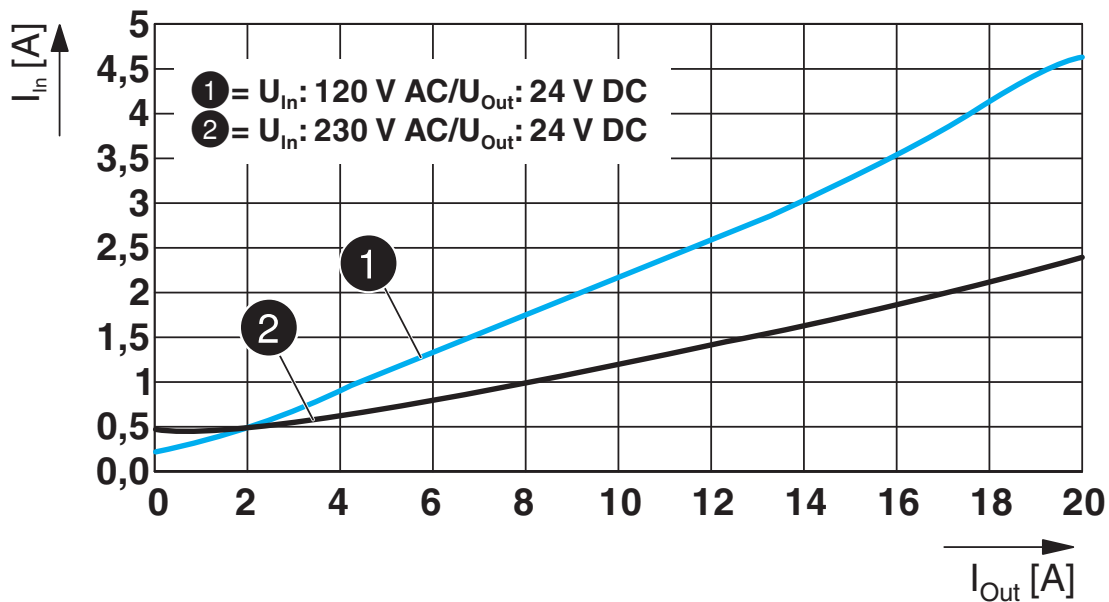
## Criteria

Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

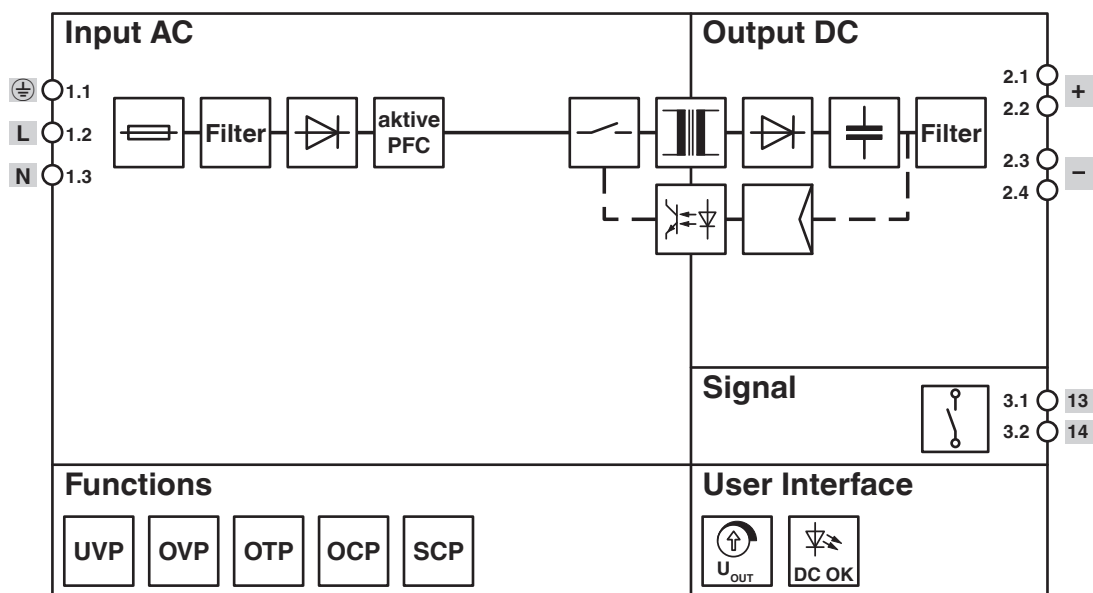


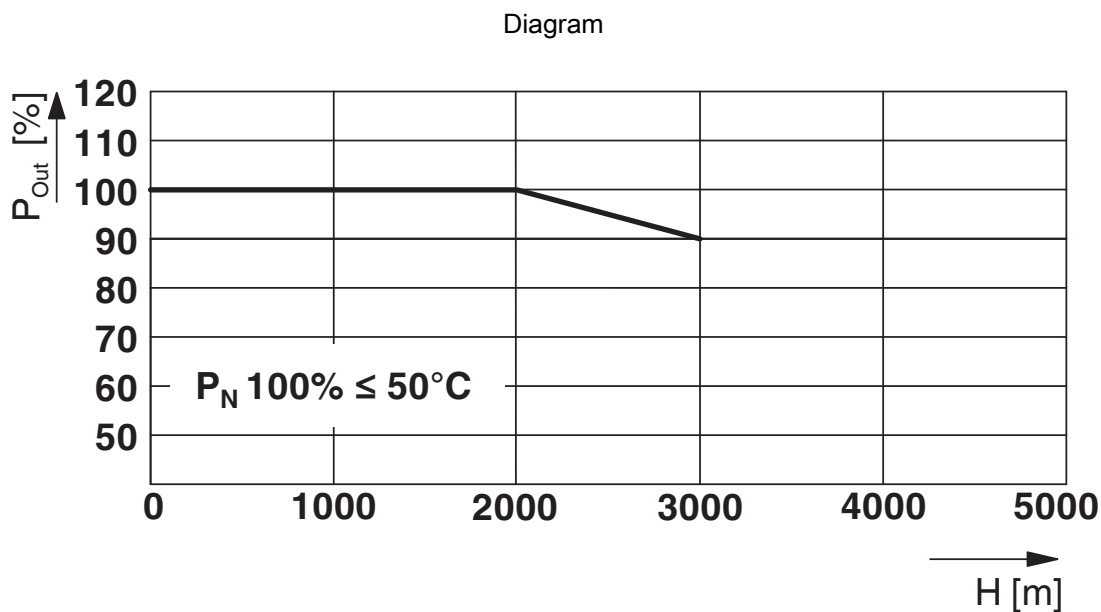
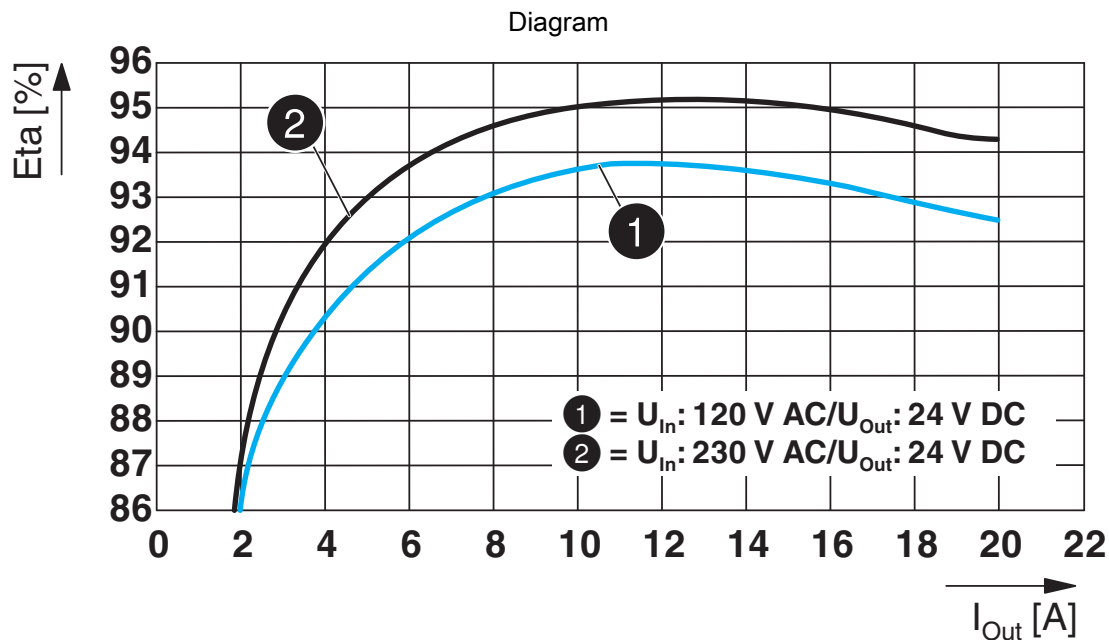
## Drawings

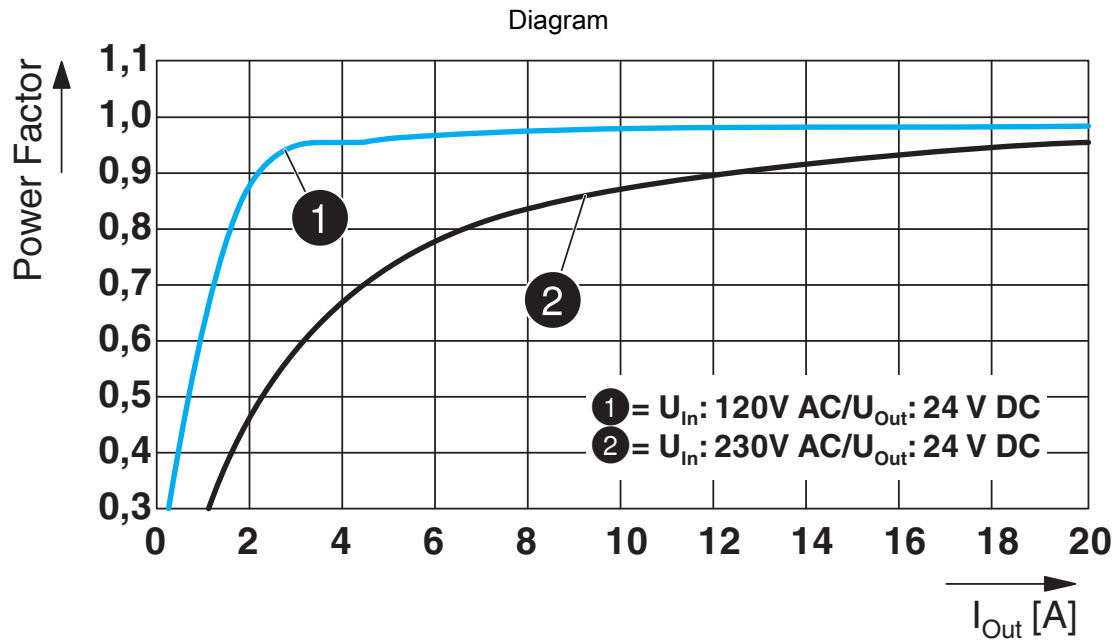
Diagram



Block diagram

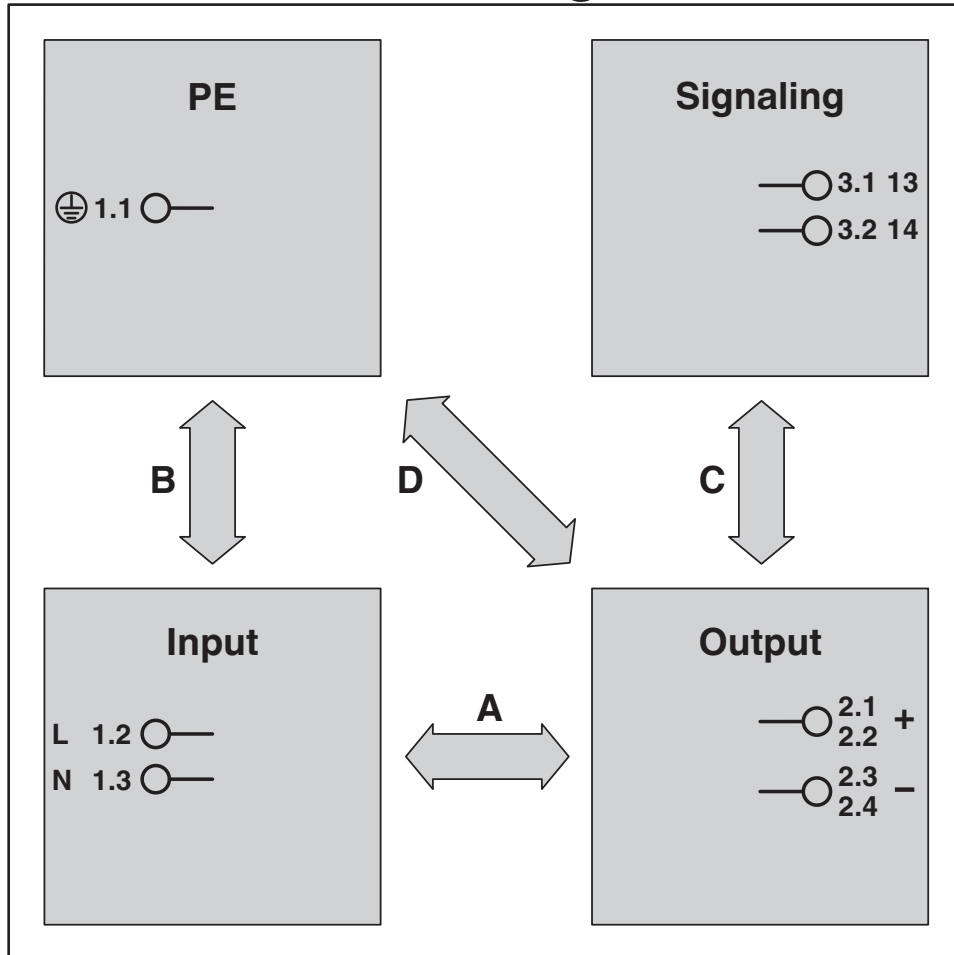






Schematic diagram

# Housing



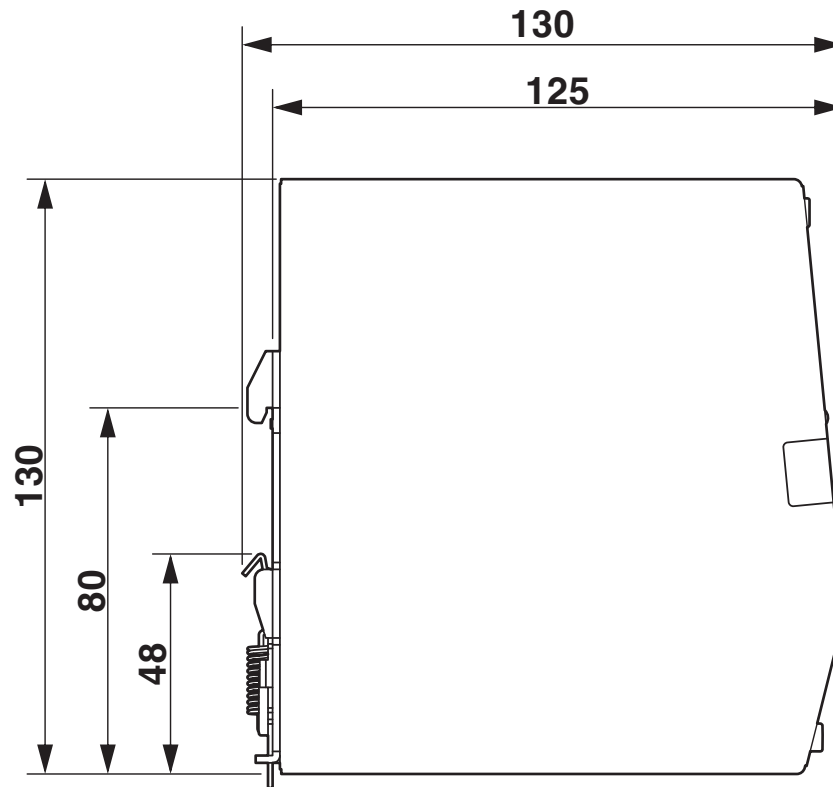
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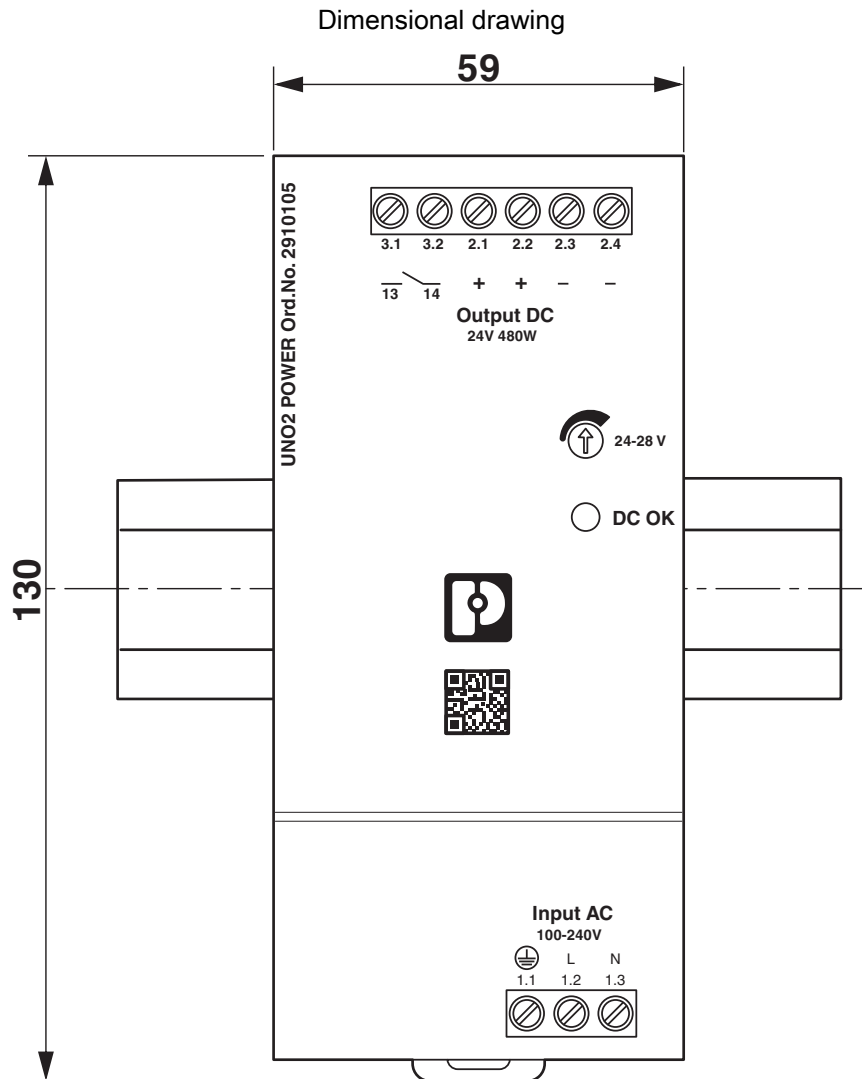
Dimensional drawing



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## Approvals



**IECEE CB Scheme**  
Approval ID: SI-8862



**UL Listed**  
Approval ID: FILE E 123528



**cUL Listed**  
Approval ID: FILE E 123528



**EAC**  
Approval ID: RU S-DE.BL08.W.00764



**cUL Listed**  
Approval ID: FILE E 199827



**UL Listed**  
Approval ID: FILE E 199827

**cULus Listed**

**cULus Listed**

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## Classifications

### ECLASS

ECLASS-9.0	27040701
ECLASS-10.0.1	27040701
ECLASS-11.0	27040701

### ETIM

ETIM 8.0	EC002540
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### UNSPSC

UNSPSC 21.0	39121000
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## 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"

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## Accessories

### Redundancy module

Redundancy module - QUINT4-DIODE/12-24DC/2X20/1X40 - 2907719

<https://www.phoenixcontact.com/pc/products/2907719>



DIN rail diode module 12-24 V DC/2x20 A or 1x40 A. Uniform redundancy up to the consumer.

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### Redundancy module

Redundancy module - QUINT4-ORING/12-24DC/2X20/2X20 - 1088207

<https://www.phoenixcontact.com/pc/products/1088207>



Active redundancy module QUINT ORING with decoupling MOSFET, ACB Technology, DIN rail mounting, 12 V DC ... 24 V DC, 2x 20 A, 2x 20 A

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## Redundancy module

Redundancy module - TRIO2-DIODE/12-24DC/2X20/1X40 - 2907379

<https://www.phoenixcontact.com/pc/products/2907379>

Redundancy module, 12 V - 24 V DC, 2 x 20 A, 1 x 40 A



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## Type 3 surge protection device

Type 3 surge protection device - PLT-SEC-T3-230-FM-UT - 2907919

<https://www.phoenixcontact.com/pc/products/2907919>

Type 2/3 surge protection, consisting of protective plug and base element with screw connection. For single-phase power supply network with integrated status indicator and remote signaling. Nominal voltage: 230 V AC/DC



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## Electronic circuit breaker

Electronic circuit breaker - CBMC E4 24DC/1-4A NO - 2906031

<https://www.phoenixcontact.com/pc/products/2906031>



Multi-channel electronic circuit breaker for protecting four loads at 24 V DC in the event of overload and short circuit. With electronic locking of the set nominal currents. For installation on DIN rails.

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## Electronic circuit breaker

Electronic circuit breaker - CBMC E4 24DC/1-10A NO - 2906032

<https://www.phoenixcontact.com/pc/products/2906032>



Multi-channel electronic circuit breaker for protecting four loads at 24 V DC in the event of overload and short circuit. With electronic locking of the set nominal currents. For installation on DIN rails.

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## Electronic circuit breaker

Electronic circuit breaker - CBMC E4 24DC/1-4A+ IOL - 2910410

<https://www.phoenixcontact.com/pc/products/2910410>



Multi-channel electronic circuit breaker with IO-Link interface for protecting four loads at 24 V DC in the event of overload and short circuit. With electronic locking of the set nominal currents. For installation on DIN rails.

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## Electronic circuit breaker

Electronic circuit breaker - CBMC E4 24DC/1-10A IOL - 2910411

<https://www.phoenixcontact.com/pc/products/2910411>



Multi-channel electronic circuit breaker with IO-Link interface for protecting four loads at 24 V DC in the event of overload and short circuit. With electronic locking of the set nominal currents. For installation on DIN rails.

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## Electronic circuit breaker

Electronic circuit breaker - CBM E4 24DC/0.5-10A NO-R - 2905743

<https://www.phoenixcontact.com/pc/products/2905743>



Multi-channel, electronic circuit breaker with active current limitation for protecting four loads at 24 V DC in the event of overload and short circuit. With nominal current assistant and electronic locking of the set nominal currents. For installation on DIN rails.

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## Electronic circuit breaker

Electronic circuit breaker - CBM E8 24DC/0.5-10A NO-R - 2905744

<https://www.phoenixcontact.com/pc/products/2905744>



Multi-channel, electronic circuit breaker with active current limitation for protecting eight loads at 24 V DC in the event of overload and short circuit. With nominal current assistant and electronic locking of the set nominal currents. For installation on DIN rails.

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