

# Power supply unit - TRIO-PS-2G/1500DC/24DC/1.5



1107892

<https://www.phoenixcontact.com/us/products/1107892>

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Primary-switched TRIO POWER DC/DC converter with Push-in connection for DIN rail mounting, input: 1,500 V DC, output: 24 V DC / 1.5 A

## Commercial Data

Item number	1107892
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	C13
Product Key	CMDO43
GTIN	4063151010546
Weight per Piece (including packing)	567.3 g
Weight per Piece (excluding packing)	567.3 g
Customs tariff number	85044083
Country of origin	CN

## Technical Data

### Input data

#### DC operation

Nominal input voltage range	500 V DC ... 1500 V DC
Input voltage range	450 V DC ... 1650 V DC
Wide-range input	no
Input voltage range DC	600 V DC ... 1500 V DC -15 % ... +10 %
Electric strength, max.	≤ 1800 V DC 1 s
Typical national grid voltage	500 V DC 1500 V DC
Voltage type of supply voltage	DC
Inrush current integral ( $I^2t$ )	typ. 0.15 A <sup>2</sup> s
Current consumption	typ. 85 mA (450 V DC) typ. 30 mA (1500 V DC)
Recommended breaker for input protection	2 A (1500 V DC)

### Output data

Efficiency	typ. 88 % (500 V DC)
	typ. 87 % (900 V DC)
	typ. 83 % (1500 V DC)
Nominal output voltage	24 V DC ±3 %
Nominal output current ( $I_N$ )	1.5 A
Derating	> 60 °C ... 70 °C (2.5%/K)
Feedback voltage resistance	≤ 35 V DC
Protection against overvoltage at the output (OVP)	≤ 30 V DC
Control deviation	< 1 % (change in load, static 10 % ... 90 %)
	< 3 % (Dynamic load change 10 % ... 90 %, 10 Hz)
	< 0.1 % (change in input voltage ±10 %)
Residual ripple	< 40 mV <sub>PP</sub> (Ripple)
	< 50 mV <sub>PP</sub> (Noise)
Short-circuit-proof	yes
No-load proof	yes
Output power	36 W
Maximum no-load power dissipation	< 1.1 W (500 V DC)
	< 1.4 W (900 V DC)
	< 2.4 W (1500 V DC)
Power loss nominal load max.	< 4.2 W (500 V DC)
	< 5.5 W (900 V DC)
	< 7.5 W (1500 V DC)
Rise time	≤ 30 ms ( $U_{OUT}$ (10 % ... 90 %))
Connection in parallel	yes, for redundancy and increased capacity
Connection in series	No

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## Connection data

### Input

Connection method	Push-in connection
Conductor cross section solid min.	1 mm <sup>2</sup>
Conductor cross section solid max.	4 mm <sup>2</sup>
Conductor cross section flexible min.	1 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule with plastic sleeve, min.	1 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule with plastic sleeve, max.	2.5 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule without plastic sleeve, min.	1 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule without plastic sleeve, max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	18
Conductor cross section AWG max.	12
Stripping length	10 mm

### Output

Connection method	Push-in connection
Conductor cross section solid min.	1 mm <sup>2</sup>
Conductor cross section solid max.	4 mm <sup>2</sup>
Conductor cross section flexible min.	1 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule with plastic sleeve, min.	1 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule with plastic sleeve, max.	2.5 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule without plastic sleeve, min.	1 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule without plastic sleeve, max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	18
Conductor cross section AWG max.	12
Stripping length	10 mm

## LED signaling

Types of signaling	LED
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### Signal output: LED status indicator

Signalization designation	DC OK
Status display	"DC OK" LED green
Note on status display	U <sub>OUT</sub> > 21.5 V: LED lights up
Color	green

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## Electrical properties

Number of phases	1.00
Insulation voltage input/output	4.2 kV DC (type test)
	2.6 kV DC (routine test)

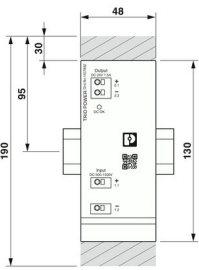
## Product properties

Product type	DC/DC converters
Product family	TRIO POWER
MTBF (IEC 61709, SN 29500)	> 3300000 h (25 °C)
	> 1760000 h (40 °C)
	> 740000 h (60 °C)

## Insulation characteristics

Protection class	II
Degree of pollution	2

## Dimensions

Dimensional drawing	
Width	48 mm
Height	130 mm
Depth Device depth (DIN rail mounting)	115 mm (Device depth (DIN rail mounting))

## 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 ( $\leq 40$ °C) 10 mm ( $\leq 70$ °C), vertically 50 mm
Mounting position	horizontal DIN rail NS 35, EN 60715
With protective coating	No

## Material specifications

Flammability rating according to UL 94 (housing / terminal blocks)	V0
Housing material	Plastic
Type of housing	Polycarbonate

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C (> 60 °C Derating: 2,5 %/K)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 4000 m (> 2000 m, Derating: 10 %/1000 m)
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, non-condensing)
Shock	11 ms, 15 g, 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 62109-1:2011
Standard – Safety extra-low voltage	IEC 62109-1:2011 (SELV)
Standard - Safe isolation	DIN VDE 0100-410

### Overvoltage category

IEC 62109-1	II
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### Approval data

UL approvals	UL 62109-1:2014
	UL 1741

### EMC data

Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Conducted noise emission	EN 55016
	EN 61000-6-4 (Class A)
Noise emission	EN 55016
	EN 61000-6-4 (Class A)
Noise immunity	EN 61000-6-2:2005

### Electrostatic discharge

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

Contact discharge	4 kV (Test Level 2)
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
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Test field strength	10 V/m (> Test intensity 3)
Frequency range	1 GHz ... 2.7 GHz
Test field strength	10 V/m (Test Level 2)
Frequency range	2.7 GHz ... 6 GHz
Test field strength	3 V/m (Test Level 1)
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	4 kV (Test Level 4 - asymmetrical)
Comments	Criterion A

## Surge voltage load (surge)

Standards/regulations	EN 61000-4-5
Input	3 kV (Test intensity >4 - symmetrical) 4 kV (Test Level 4 - asymmetrical)
Output	0.5 kV (Test Level 2 - symmetrical) 1 kV (Test Level 2 - 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
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## Emitted interference

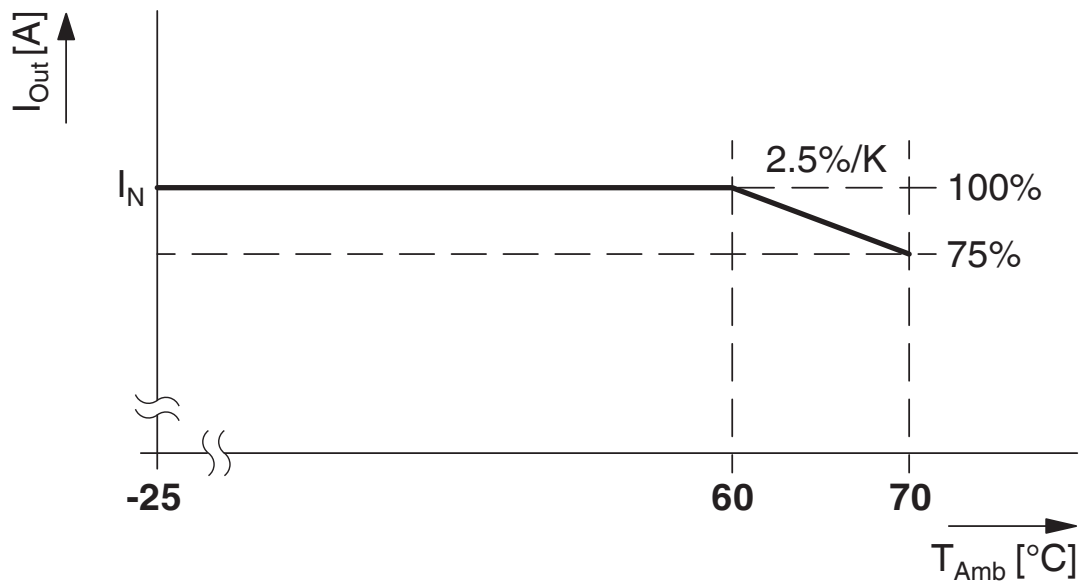
Standards/regulations	EN 61000-6-4
Radio interference voltage in acc. with EN 55011	EN 55011 (EN 55022) Class A industrial area of application
Emitted radio interference in acc. with EN 55011	EN 55011 (EN 55022) Class A industrial area of application

## 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



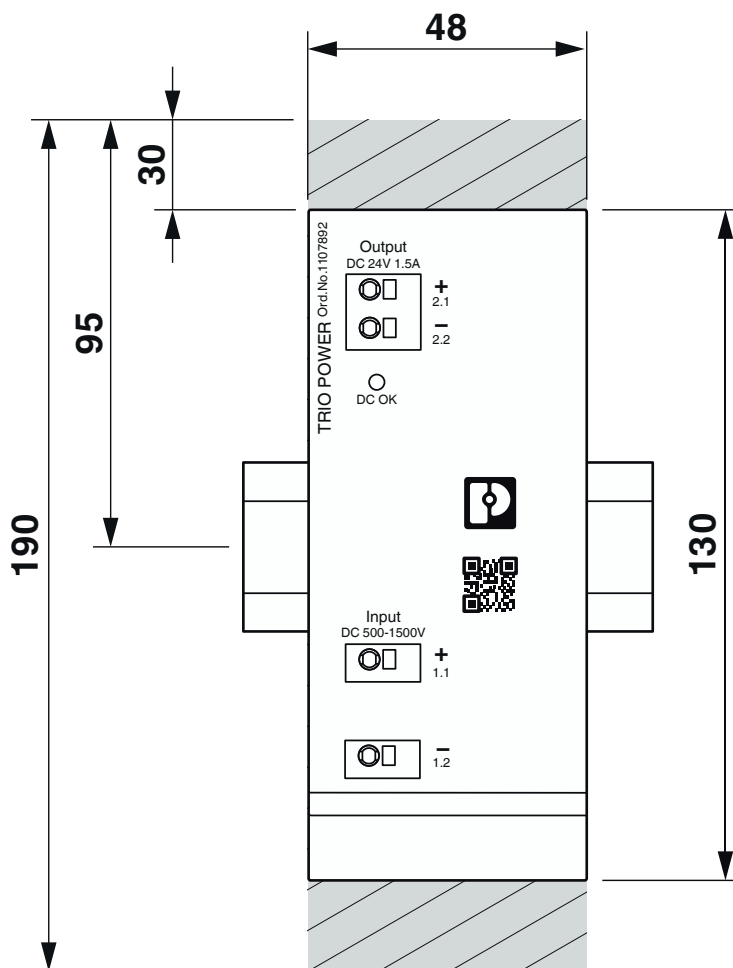
# Power supply unit - TRIO-PS-2G/1500DC/24DC/1.5



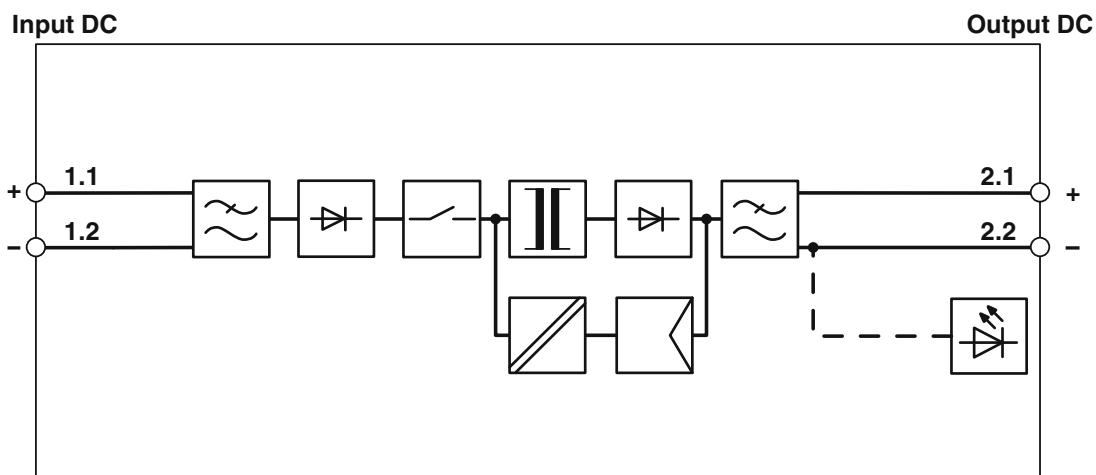
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Dimensional drawing



Block diagram





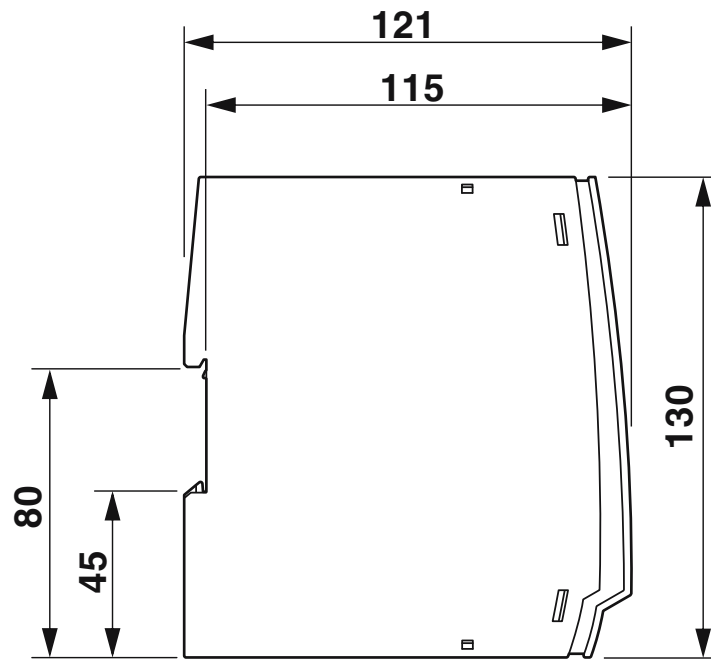
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Dimensional drawing



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## Approvals



**EAC**

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



**cULus Recognized**

Approval ID: FILE E 476951



**EAC**

Approval ID: C-DE.BL08.W.00764/20

# Power supply unit - TRIO-PS-2G/1500DC/24DC/1.5



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## Classifications

### ECLASS

ECLASS-11.0

27040701

### ETIM

ETIM 8.0

EC002046

### 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

### Electronic circuit breaker

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

<https://www.phoenixcontact.com/us/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/us/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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## Potential distributors

Potential distributors - VIP-2/SC/PDM-2/24 - 2315269

<https://www.phoenixcontact.com/us/products/2315269>



VARIOFACE module, with two equipotential busbars (P1, P2) for potential distribution, for mounting on NS 35 rails. Module width: 70.4 mm

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## Potential distributors

Potential distributors - VIP-3/PT/PDM-2/24 - 2903798

<https://www.phoenixcontact.com/us/products/2903798>



VARIOFACE module with push-in connection and two equipotential busbars (P1, P2) for potential distribution, for mounting on NS 35 rails. Module width: 57.1 mm

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## Type 2 surge arrester

Type 2 surge arrester - VAL-MS 1500DC-PV/2+V - 1033708

<https://www.phoenixcontact.com/us/products/1033708>



Surge protective device for 2-pos. isolated and grounded 1500 V DC PV systems, for DIN rail mounting, 3-pos. base element, three pluggable temperature-monitored protective elements, status message on each plug.

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## Lightning/surge arrester type 1/2

Lightning/surge arrester type 1/2 - VAL-MB-T1/T2 1500DC-PV/2+V - 2905641

<https://www.phoenixcontact.com/us/products/2905641>



Lightning current arrester/surge protective device for 2-pos. isolated and grounded 1500 V DC PV systems, for DIN rail mounting, temperature-monitored protective elements, status message on the module.

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