

# TRIO-PS/600DC/24DC/20 - Power supply unit



2866530

<https://www.phoenixcontact.com/us/products/2866530>

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DIN rail power supply unit, primary-switched, 1-phase, input: 600 V DC, output: 24 V DC/20 A



## Product description

TRIO POWER is the power supply unit for the DIN rail with basic functionality at the highest level. TRIO POWER, 600 V DC, 24 V DC is ideally suited for connection to 600 V DC intermediate circuits of frequency inverters: In the event of a line supply failure, 24 V loads are supplied using the kinetic energy of the motor.

## Your advantages

- Compact buffer solution
- Fast tripping of standard circuit breakers
- Preventive function monitoring
- Reliable starting of difficult loads and easy system extension

## Commercial data

Item number	2866530
Packing unit	1 pc
Sales key	CM11
Product key	CMPT43
Catalog page	Page 245 (C-4-2019)
GTIN	4046356556163
Weight per piece (including packing)	1,957 g
Weight per piece (excluding packing)	1,780 g
Customs tariff number	85044083
Country of origin	CN

## Technical data

### Input data

#### DC operation

Nominal input voltage range	600 V DC
Input voltage range	450 V DC ... 840 V DC (Dielectric strength up to 900 V DC)
Voltage type of supply voltage	DC
Inrush current	< 26 A
Inrush current integral ( $I^2t$ )	0.8 A <sup>2</sup> s
Frequency range DC	0 Hz
Mains buffering time	typ. 15 ms (600 V DC)
Current consumption	0.9 A (600 V DC)
Nominal power consumption	527.3 VA
Protective circuit	Transient surge protection; Varistor
Power factor (cos phi)	1
Typical response time	< 1 s
Permissible backup fuse	4 A 6 A 1000 V DC
Recommended breaker for input protection	4 A ... 6 A (1000 V DC)
Discharge current to PE	< 3.5 mA

### Output data

Efficiency	> 91 % (With 600 V DC 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 ( $U_{IN} > 475$ V DC) 22.5 V DC ... 28 V DC ( $U_{IN} \leq 475$ V DC)
Nominal output current ( $I_N$ )	20 A (-25 °C ... 55 °C)
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 (for short-circuit)
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	< 40 mV <sub>PP</sub>
Output power	480 W
Peak switching voltages nominal load	< 10 mV <sub>PP</sub>
Maximum no-load power dissipation	3.8 W
Power loss nominal load max.	45 W
Rise time	< 2 ms ( $U_{OUT}$ (10 % ... 90 %))
Connection in parallel	yes, for redundancy and increased capacity
Connection in series	yes

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## Connection data

### Input

Connection method	Screw connection
Conductor cross section, rigid min.	0.2 mm <sup>2</sup>
Conductor cross section, rigid 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, rigid min.	0.5 mm <sup>2</sup>
Conductor cross section, rigid 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

## Signaling

Types of signaling	LED
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### Signal output

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

## Electrical properties

Insulation voltage input/output	4 kV AC (type test)
	2 kV AC (routine test)
Insulation voltage output / PE	500 V DC (routine test)
Insulation voltage input/output	2 kV (routine test)
Insulation voltage input / PE	2 kV AC (type test)
	2 kV AC (routine test)
Insulation voltage input, output / housing	4 kV

## Product properties

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Product type	Power supply
Product family	TRIO POWER
MTBF (IEC 61709, SN 29500)	> 701000 h (40 °C)

## Insulation characteristics

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

## Dimensions

Width	115 mm
Height	130 mm
Depth	152.5 mm

## 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

Rail applications	EN 50121-4
Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations	EN 50178/VDE 0160 (PELV)
Standard – Limitation of mains harmonic currents	EN 61000-3-2

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Standard - Electrical safety	EN 60950-1/VDE 0805 (SELV)
Standard – Protection against shock currents, basic requirements for protective separation in electrical equipment	EN 50178
Standard – Safety extra-low voltage	EN 60950-1 (SELV)
	EN 60204 (PELV)
Standard - Safe isolation	DIN VDE 0100-410

## Approvals

UL approvals	UL/C-UL listed UL 508
	UL/C-UL Recognized UL 60950-1

## Conformity/Approvals

SIL in accordance with IEC 61508	0
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## EMC data

Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
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
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU

## Electrostatic discharge

Standards/regulations	EN 61000-4-2
Housing	Level 3

## Electrostatic discharge

Contact discharge	8 kV (Test Level 4)
Discharge in air	15 kV (Test Level 4)
Comments	Criterion B

## 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	20 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
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## Fast transients (burst)

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

## Surge voltage load (surge)

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

## Conducted interference

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

Frequency range	10 kHz ... 15 kHz
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 61000-6-3
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

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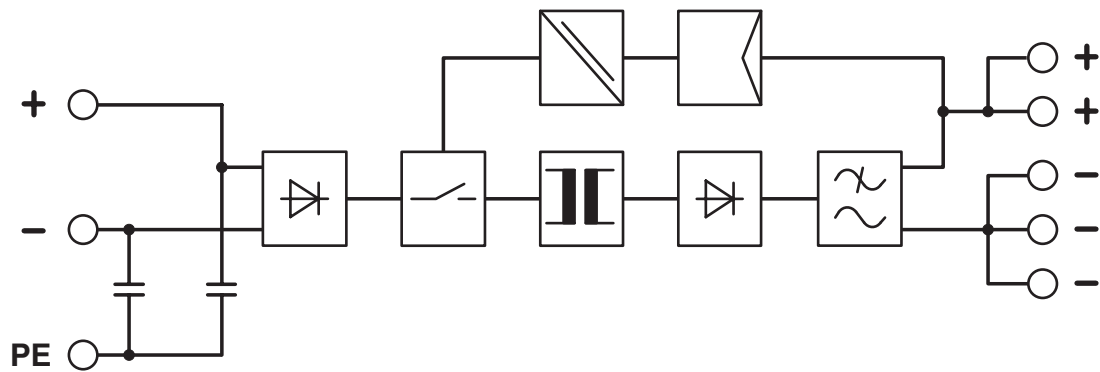


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## Drawings

Block diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2866530>



**cUL Recognized**  
Approval ID: FILE E 211944



**UL Recognized**  
Approval ID: FILE E 211944



**EAC**  
Approval ID: EAC-Zulassung



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



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



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## Classifications

### ECLASS

ECLASS-11.0	27040701
ECLASS-12.0	27040701

### ETIM

ETIM 9.0	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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