

# Power supply unit - TRIO-PS-2G/3AC/24DC/20 - 2903155

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Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: 3-phase, output: 24 V DC/20 A

## Product Description

TRIO POWER power supplies with standard functionality

The TRIO POWER power supply range with push-in connection has been perfected for use in machine building. All functions and the space-saving design of the single and three-phase modules are optimally tailored to the stringent requirements. Under challenging ambient conditions, the power supply units, which feature an extremely robust electrical and mechanical design, ensure the reliable supply of all loads.

## Why buy this product

- Save time and costs, thanks to the Push-in connection and narrow design
- Increase system availability, thanks to dynamic boost with 150% of the nominal current for five seconds
- Maximum flexibility due to the wide temperature range from -25°C to +70°C and device startup at -40°C



## Key Commercial Data

Packing unit	1 STK
GTIN	
GTIN	4046356960861
Weight per Piece (excluding packing)	1,782.300 g
Custom tariff number	85044030
Country of origin	China

## Technical data

### Dimensions

Width	65 mm
Height	130 mm
Depth	160 mm

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C (> 60 °C Derating: 2,5 %/K)

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### Ambient conditions

Ambient temperature (storage/transport)	-40 °C ... 85 °C
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, non-condensing)
Noise immunity	EN 61000-6-2:2005
Maximum altitude	≤ 5000 m (> 4000 m, observe derating)

### Input data

Nominal input voltage range	3x 400 V AC ... 500 V AC -20 % ... +15 %
	2x 400 V AC ... 500 V AC -10 % ... +15 %
Input voltage range	3x 320 V AC ... 575 V AC
	2x 360 V AC ... 575 V AC
AC frequency range	50 Hz ... 60 Hz
Discharge current to PE	≤ 3.5 mA
Current consumption	3x 1.2 A (400 V AC)
	3x 1 A (500 V AC)
	2x 2.3 A (400 V AC)
	2x 1.9 A (500 V AC)
Inrush surge current	≤ 22 A (typical)
Power failure bypass	> 10 ms (400 V AC)
	> 20 ms (500 V AC)
Input fuse	3.15 A (internal (device protection), slow-blow)
Choice of suitable circuit breakers	6 A ... 16 A (Characteristics B, C, D, K)
Type of protection	Transient surge protection
Protective circuit/component	Varistor

### Output data

Nominal output voltage	24 V DC ±1 %
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
Dynamic Boost ( $I_{Dyn.Boost}$ )	30 A (5 s)
Derating	> 60 °C ... 70 °C (2.5%/K)
Connection in parallel	Yes, for redundancy and increased capacity
Connection in series	yes
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	≤ 20 mV <sub>PP</sub>
Output power	480 W
Typical response time	< 1 s
Maximum power dissipation in no-load condition	< 1.2 W

### General

Net weight	1.5 kg
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## Technical data

### General

Efficiency	> 93 % (at 400 V AC and nominal values)
Insulation voltage input/output	4 kV AC (type test)
	1.5 kV AC (routine test)
Protection class	I (in closed control cabinet)
MTBF (IEC 61709, SN 29500)	> 1800000 h (25 °C)
	> 1100000 h (40°C)
	> 510000 h (60°C)
Mounting position	On horizontal and vertical DIN rail
Assembly instructions	Can be aligned: Horizontally 0 mm ( $\leq 40\text{ °C}$ ) 10 mm ( $\leq 70\text{ °C}$ ), vertically 50 mm

### Connection data, input

Connection method	Push-in connection
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	4 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.	12
Stripping length	10 mm

### Connection data, output

Connection method	Push-in connection
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	10 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	6 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	8
Stripping length	15 mm

### Connection data for signaling

Connection method	Push-in connection
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	1.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	1.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

### Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
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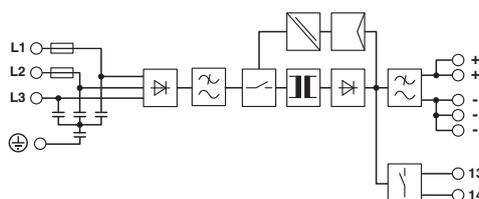
## Technical data

### Standards and Regulations

Shock	18 ms, 30g, in each space direction (according to IEC 60068-2-27)
Noise emission	EN 55011 (EN 55022)
Noise immunity	EN 61000-6-2:2005
Standards/regulations	EN 61000-4-2
	EN 61000-4-3
	EN 61000-4-4
	EN 61000-4-5
	EN 61000-4-6
Standard - Safety of transformers	EN 61558-2-16 (air clearances and creepage distances only)
Standard - Electrical safety	IEC 60950-1/VDE 0805 (SELV)
Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations	EN 50178/VDE 0160 (PELV)
Standard – Safety extra-low voltage	IEC 60950-1 (SELV) and EN 60204-1 (PELV)
Standard - Safe isolation	DIN VDE 0100-410
Standard – Limitation of mains harmonic currents	EN 61000-3-2
Shipbuilding approval	GL applied for
UL approvals	UL Listed UL 508
	UL/C-UL Recognized UL 60950-1
Vibration (operation)	< 15 Hz, amplitude ±2.5 mm (according to IEC 60068-2-6)
	15 Hz ... 150 Hz, 4g, 90 min.
Low Voltage Directive	Conformance with LV directive 2006/95/EC
Rail applications	EN 50121-4

## Drawings

Block diagram



## Classifications

eCl@ss

eCl@ss 4.0	27040702
eCl@ss 4.1	27040702
eCl@ss 5.0	27049002
eCl@ss 5.1	27049002
eCl@ss 6.0	27049002
eCl@ss 7.0	27049002

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## Classifications

### eCl@ss

eCl@ss 8.0	27049002
eCl@ss 9.0	27040701

### ETIM

ETIM 4.0	EC002540
ETIM 5.0	EC002540
ETIM 6.0	EC002540

## Approvals

### Approvals

#### Approvals

EAC / UL Recognized / UL Listed / cUL Recognized / cUL Listed / IECEE CB Scheme / cULus Recognized / cULus Listed

#### Ex Approvals

### Approval details

EAC 7500651.22.01.00242

UL Recognized  <http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm> FILE E 211944

UL Listed  <http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm> FILE E 123528

cUL Recognized  <http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm> FILE E 211944

cUL Listed  <http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm> FILE E 123528

IECEE CB Scheme  <http://www.iecee.org/> DK-44808-A1-UL

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## Approvals

cULus Recognized  <http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

cULus Listed 

## Accessories

### Accessories

#### Device circuit breakers

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



Multi-channel, electronic device 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.

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



Multi-channel, electronic device 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.

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



Multi-channel electronic device 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.

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



Multi-channel electronic device 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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#### Potential distributor

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