Power supply unit - TRIO-PS-2G/1AC/24DC/10/B+D - 2903145

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Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: single phase, output: 24 V DC/10 A

Product Description

TRIO POWER power supplies for more stringent EMC requirements in shipbuilding
The TRIO POWER power supply range with Push-in connection has been perfected for use in shipbuilding. 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

- Can be used on the bridge of a ship in accordance with EN 60945
- 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
- Rugged design
- Save time and costs, thanks to the Push-in connection and narrow design

Key Commercial Data

Packing unit	1 STK
GTIN	4 046356 726948
GTIN	4046356726948
Weight per Piece (excluding packing)	1,188.200 g
Custom tariff number	85044030
Country of origin	China

Technical data

Dimensions

Width	42 mm
Height	130 mm
Depth	160 mm

Ambient conditions

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Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C (> 60 °C Derating: 2.5 %/K)
Ambient temperature (start-up type tested)	-40 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, non-condensing)
Climatic class	3K3 (in acc. with EN 60721)
Degree of pollution	2
Installation height	≤ 5000 m (> 2000 m, observe derating)

Input data

Nominal input voltage range	100 V AC ... 240 V AC
	110 V DC ... 250 V DC
Input voltage range	100 V AC ... 240 V AC -15 % ... +10 %
	110 V DC ... 250 V DC -10 % ... +10 %
Dielectric strength maximum	300 V AC 15 s
AC frequency range	50 Hz ... 60 Hz ±5 Hz
Discharge current to PE	< 3.5 mA
Current consumption	3.1 A (100 V AC)
	2.4 A (120 V AC)
	1.3 A (230 V AC)
	1.4 A (240 V AC)
Nominal power consumption	21.8 W
Inrush surge current	typ. 20 A
Power failure bypass	> 20 ms (120 V AC)
	> 20 ms (230 V AC)
Input fuse	6.3 A (internal (device protection))
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 (constant capacity)
Nominal output current (I_N)	10 A
Dynamic Boost ($I_{Dyn.Boost}$)	15 A (5 s)
Derating	> 60 °C ... 70 °C (2.5%/K)
Connection in parallel	Yes, for redundancy and increased capacity
Connection in series	yes
Feedback resistance	≤ 35 V DC
Circuit breaker against surge voltage at output by invasive foreign matter	≤ 30 V DC
Control deviation	< 1 % (change in load, static 10 % ... 90 %)
	< 3 % (Dynamic load change 10 % ... 90 %, 10 Hz)

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Output data

	< 0.1 % (change in input voltage ±10 %)
Residual ripple	< 20 mV_{PP} (with nominal values)
Output power	240 W
Typical response time	< 1 s
Maximum power dissipation in no-load condition	< 5.1 W
Power loss nominal load max.	< 25 W

General

Net weight	1 kg
Efficiency	typ. 90 % (120 V AC)
	typ. 91.5 % (230 V AC)
Insulation voltage input/output	3 kV AC (type test)
	1.5 kV AC (routine test)
Protection class	I (in closed control cabinet)
Degree of protection	IP20
MTBF (IEC 61709, SN 29500)	> 1800000 h (25 °C)
	> 1000000 h (40 °C)
	> 480000 h (60 °C)
Mounting position	horizontal DIN rail NS 35, EN 60715
Assembly instructions	Can be aligned: Horizontally 0 mm (≤ 40 °C) 10 mm (≤ 70 °C), vertically 50 mm

Connection data, input

Connection method	Push-in connection
Conductor cross section solid min.	0.2 mm²
Conductor cross section solid max.	4 mm²
Conductor cross section flexible min.	0.2 mm²
Conductor cross section flexible max.	2.5 mm²
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 mm²
Conductor cross section solid max.	4 mm²
Conductor cross section flexible min.	0.2 mm²
Conductor cross section flexible max.	2.5 mm²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Stripping length	8 mm

Connection data for signaling

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Technical data

Connection data for signaling

Connection method	Push-in connection
Conductor cross section solid min.	0.2 mm²
Conductor cross section solid max.	1.5 mm²
Conductor cross section flexible min.	0.2 mm²
Conductor cross section flexible max.	1.5 mm²
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
Noise emission	EN 55011 (EN 55022)
Noise immunity	EN 61000-6-2:2005
Standards/regulations	EN 61000-4-2
Contact discharge	4 kV (Test Level 2)
Standards/regulations	EN 61000-4-3
Frequency range	80 MHz ... 1 GHz
Test field strength	10 V/m (Test Level 3)
Frequency range	1.4 GHz ... 2 GHz
Test field strength	3 V/m (Test Level 2)
Standards/regulations	EN 61000-4-4
Comments	Criterion B
Standards/regulations	EN 61000-4-5
Signal	1 kV (Test Level 2 - asymmetrical)
Standards/regulations	EN 61000-6-3
	EN 61000-4-6
Frequency range	0.15 MHz ... 80 MHz
Voltage	10 V (Test Level 3)
Low Voltage Directive	Conformance with LV directive 2006/95/EC
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	DNV GL (EMC B)
UL approvals	UL Listed UL 508
	UL/C-UL Recognized UL 60950-1
Shock	18 ms, 30g, in each space direction (according to IEC 60068-2-27)
	15 Hz ... 150 Hz, 4g, 90 min.

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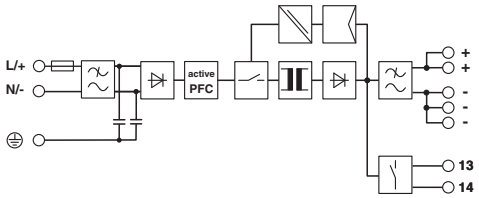
Standards and Regulations

Approval - requirement of the semiconductor industry with regard to mains voltage dips	Semi F47-0706
Rail applications	EN 50121-4

Drawings

Block diagram



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.

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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Accessories

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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Redundancy module

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

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

Diode - TRIO2-DIODE/12-24DC/2X10/1X20 - 2907380

Redundancy module, 12 V - 24 V DC, 2 x 10 A, 1 x 20 A
