

TRIO-PS-2G/3AC/24DC/40 - Power supply unit



2903156

<https://www.phoenixcontact.com/au/products/2903156>

Please be informed that the data shown in this PDF document is generated from our Online Catalog. Please find the complete data in the user documentation. Our General Terms of Use for Downloads are valid.



Primary-switched TRIO power supply for DIN rail mounting, input: 3-phase, output: 24 V DC/40 A, dynamic boost, tool-free fast connection technology for solid and stranded conductors with ferrule

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.

Your advantages

- 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
- Electrically robust, thanks to high electric strength
- Mechanically robust, thanks to high vibration and shock resistance

Commercial Data

Item number	2903156
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CMPO33
Product Key	CMPO33
Catalog Page	Page 259 (C-4-2019)
GTIN	4046356960977
Weight per Piece (including packing)	2,976 g
Weight per Piece (excluding packing)	2,559 g
Customs tariff number	85044083
Country of origin	CN

Technical Data

Input data

AC operation

Network type	Star network
Nominal input voltage range	3x 400 V AC ... 500 V AC
Input voltage range	3x 400 V AC ... 500 V AC -20 % ... +15 %
Typical national grid voltage	3x 400 V AC
	3x 480 V AC
Voltage type of supply voltage	AC
Inrush current integral (I^2t)	$\leq 1.1 \text{ A}^2\text{s}$
Inrush current limitation	35 A (after 1 ms)
AC frequency range	50 Hz ... 60 Hz
Frequency range (f_N)	50 Hz ... 60 Hz ± 5 Hz
Mains buffering time	> 10 ms (400 V AC)
	> 20 ms (480 V AC)
Current consumption	3x 1.9 A (400 V AC)
	3x 1.7 A (500 V AC)
Nominal power consumption	1335.1 VA
Protective circuit	Transient surge protection; Varistor
Power factor (cos phi)	0.77
Typical response time	< 1 s
Input fuse	6.3 A (internal (device protection))
Recommended breaker for input protection	10 A ... 16 A (Characteristics B, C, D, K)
Discharge current to PE	< 3.5 mA
	< 2.5 mA (550 V AC, 60 Hz)
POWER factor	> 0.7 (400 V AC)
	> 0.7 (480 V AC)

Output data

Efficiency	typ. 93 % (400 V AC)
	typ. 93.3 % (480 V AC)
Output characteristic	U/I with dynamic load reserve
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)	40 A
Dynamic Boost ($I_{Dyn.Boost}$)	60 A (5 s)
Derating	> 60 °C ... 70 °C (2.5%/K)
POWER factor	> 0.7 (400 V AC)
	> 0.7 (480 V AC)
Feedback voltage resistance	< 35 V
Protection against overvoltage at the output (OVP)	≤ 30 V DC
	< 1 % (change in load, static 10 % ... 90 %)

TRIO-PS-2G/3AC/24DC/40 - Power supply unit



2903156

<https://www.phoenixcontact.com/au/products/2903156>

Control deviation	< 3 % (Dynamic load change 10 % ... 90 %, 10 Hz)
	< 0.1 % (change in input voltage ± 10 %)
Residual ripple	≤ 50 mV _{PP}
Short-circuit-proof	yes
No-load proof	yes
Output power	960 W
	1440 W
Maximum no-load power dissipation	typ. 14 W (400 V AC)
	typ. 17 W (480 V AC)
Power loss nominal load max.	< 70 W (480 V AC)
	typ. 72 W (480 V AC)
Short-circuit current	< 48 A DC (Permanent)
Rise time	≤ 1 s (U_{OUT} (10 % ... 90 %))
Connection in parallel	yes, for redundancy and increased capacity
Connection in series	yes

Signal: DC OK

Continuous load current	100 mA
-------------------------	--------

Signal relay 13/14

Default	closed
Digital	30 V AC 30 V DC 100 mA

Connection data

Input

Connection method	Push-in connection
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	4 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	2.5 mm ²
Single conductor/terminal point, stranded, with ferrule, min.	0.2 mm ²
Single conductor/terminal point, stranded, with ferrule, max.	2.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Stripping length	10 mm

Output

Connection method	Push-in connection
Conductor cross section solid min.	0.75 mm ²
Conductor cross section solid max.	16 mm ²
Conductor cross section flexible min.	0.75 mm ²
Conductor cross section flexible max.	10 mm ²
Single conductor/terminal point, stranded, with ferrule, min.	0.75 mm ²
Single conductor/terminal point, stranded, with ferrule, max.	10 mm ²
Conductor cross section AWG min.	20

TRIO-PS-2G/3AC/24DC/40 - Power supply unit



2903156

<https://www.phoenixcontact.com/au/products/2903156>

Conductor cross section AWG max.	4
Stripping length	18 mm

Signal

Connection method	Push-in connection
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	1.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	1.5 mm ²
Single conductor/terminal point, stranded, with ferrule, min.	0.2 mm ²
Single conductor/terminal point, stranded, with ferrule, max.	1.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

LED signaling

Types of signaling	LED
	Floating signal contact

Signal output: LED status indicator

Signalization designation	DC OK
Status display	LED
Color	green
DC OK	$U_{OUT} > 0.9 \times U_N$ ($U_N = 24$ V DC)
	$U_{OUT} > 0.9 \times U_N$ ($U_N = 24$ V DC)

Electrical properties

Number of phases	3.00
Insulation voltage input/output	3 kV AC (type test)
	1.5 kV AC (routine test)

Product properties

Product type	Power supply
Product family	TRIO POWER
MTBF (IEC 61709, SN 29500)	> 1730000 h (25 °C)
	> 1051000 h (40 °C)
	> 510000 h (60 °C)

Insulation characteristics

Protection class	I (in closed control cabinet)
Degree of pollution	2

Dimensions

Width	110 mm
Height	130 mm
Depth	160 mm

TRIO-PS-2G/3AC/24DC/40 - Power supply unit



2903156

<https://www.phoenixcontact.com/au/products/2903156>

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 ($\leq 40\text{ }^{\circ}\text{C}$) 10 mm ($\leq 70\text{ }^{\circ}\text{C}$), 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	Metal
Type of housing	Aluminum (AlMg3)
Hood version	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
Ambient temperature (start-up type tested)	-40 °C
Maximum altitude	$\leq 4000\text{ m}$ (> 2000 m, Derating: 10 %/1000 m)
Climatic class	3K3 (in acc. with EN 60721)
Max. permissible relative humidity (operation)	$\leq 95\text{ }%$ (at 25 °C, non-condensing)
Shock	11 ms, 15 g, in each space direction (according to IEC 60068-2-27)
Vibration (operation)	DNV GL CG-0339 / Class B 2 Hz - 100 Hz resonance search, 90 min. in resonance, 2 Hz - 13.2 Hz, $\pm 1\text{ mm}$ amplitude, 13.2 Hz - 100 Hz, 0.7g acceleration

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
Standard - Electrical safety	IEC 62368-1 (SELV)
Standard – Safety extra-low voltage	IEC 62368-1 (SELV) und EN 60204-1 (PELV)
Standard - Safe isolation	DIN VDE 0100-410
Standard - Safety of power supply units up to 1100 V (insulation distances)	DIN EN 61558-2-16

Overvoltage category

TRIO-PS-2G/3AC/24DC/40 - Power supply unit



2903156

<https://www.phoenixcontact.com/au/products/2903156>

EN 60950-1	II
EN 62477-1	III

Approval data

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

Conformity/Approvals

SIL in accordance with IEC 61508	0
----------------------------------	---

EMC data

Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
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
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 55011 (EN 55022)
Noise emission	EN 55016
	EN 61000-6-3 (Class B)
Noise immunity	Immunity in accordance with EN 61000-6-1 (residential), EN 61000-6-2 (industrial)

Harmonic currents

Frequency range	Class A, B
-----------------	------------

Flicker

Frequency range	0 kHz ... 2 kHz
-----------------	-----------------

Electrostatic discharge

Standards/regulations	EN 61000-4-2
-----------------------	--------------

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
-----------------------	--------------

Electromagnetic HF field

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

TRIO-PS-2G/3AC/24DC/40 - Power supply unit



2903156

<https://www.phoenixcontact.com/au/products/2903156>

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

Fast transients (burst)

Standards/regulations	EN 61000-4-4
-----------------------	--------------

Fast transients (burst)

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

Surge voltage load (surge)

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

Conducted interference

Standards/regulations	EN 61000-4-6
-----------------------	--------------

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

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

Criteria

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

TRIO-PS-2G/3AC/24DC/40 - Power supply unit



2903156

<https://www.phoenixcontact.com/au/products/2903156>

Criterion C

Temporary adverse effects on the operating behavior, which the device corrects automatically or which can be restored by actuating the operating elements.

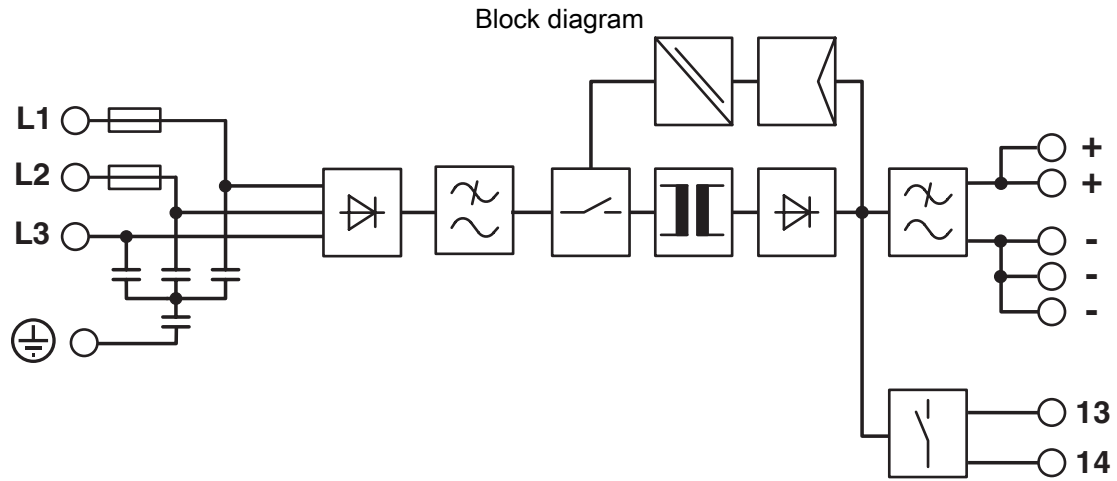
TRIO-PS-2G/3AC/24DC/40 - Power supply unit



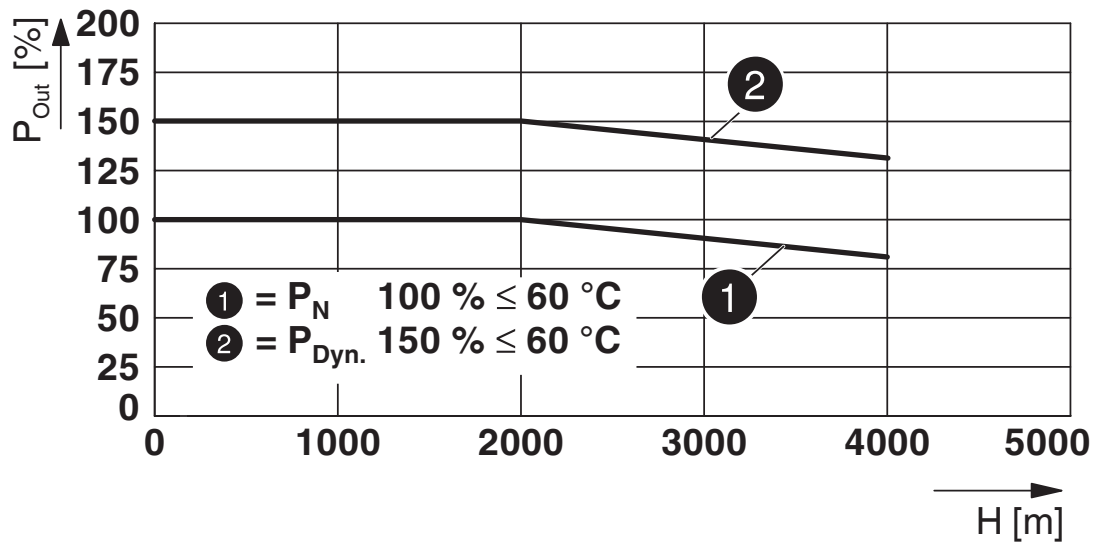
2903156

<https://www.phoenixcontact.com/au/products/2903156>

Drawings



Diagram



TRIO-PS-2G/3AC/24DC/40 - Power supply unit



2903156

<https://www.phoenixcontact.com/au/products/2903156>

Approvals



cUL Recognized
Approval ID: FILE E 211944



UL Recognized
Approval ID: FILE E 211944



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



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 Recognized

cULus Listed

cULus Listed

TRIO-PS-2G/3AC/24DC/40 - Power supply unit



2903156

<https://www.phoenixcontact.com/au/products/2903156>

Classifications

ECLASS

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

ETIM

ETIM 8.0	EC002540
----------	----------

UNSPSC

UNSPSC 21.0	39121000
-------------	----------

TRIO-PS-2G/3AC/24DC/40 - Power supply unit



2903156

<https://www.phoenixcontact.com/au/products/2903156>

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"

TRIO-PS-2G/3AC/24DC/40 - Power supply unit



2903156

<https://www.phoenixcontact.com/au/products/2903156>

Accessories

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

2905743

<https://www.phoenixcontact.com/au/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.

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

2905744

<https://www.phoenixcontact.com/au/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.

TRIO-PS-2G/3AC/24DC/40 - Power supply unit



2903156

<https://www.phoenixcontact.com/au/products/2903156>

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

2315269

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



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

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

2903798

<https://www.phoenixcontact.com/au/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

TRIO-PS-2G/3AC/24DC/40 - Power supply unit

2903156

<https://www.phoenixcontact.com/au/products/2903156>



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

2906031

<https://www.phoenixcontact.com/au/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.

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

2906032

<https://www.phoenixcontact.com/au/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.

TRIO-PS-2G/3AC/24DC/40 - Power supply unit

2903156

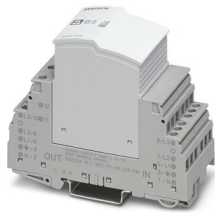
<https://www.phoenixcontact.com/au/products/2903156>



PLT-SEC-T3-3S-230-FM - Type 3 surge protection device

2905230

<https://www.phoenixcontact.com/au/products/2905230>



Plug-in device protection, according to type 3/class III, for 3-phase power supply networks with separate N and PE (5-conductor system: L1, L2, L3, N, PE), with integrated surge-proof fuse and remote indication contact.

PLT-SEC-T3-24-FM-PT - Type 3 surge protection device

2907925

<https://www.phoenixcontact.com/au/products/2907925>



Type 3 surge protection, consisting of protective plug and base element, with integrated status indicator and remote signaling for single-phase power supply networks. Nominal voltage: 24 V AC/DC

Phoenix Contact 2023 © - all rights reserved
<https://www.phoenixcontact.com>

PHOENIX CONTACT PTY Ltd
Unit 7, 2-8 South Street
Rydalmere NSW 2116
1300 786 411
customerservice@phoenixcontact.com.au