

# TRIO-PS-2G/1AC/48DC/5 Single-Phase DIN Rail Power Supply

 [perle.com/products/industrial-power-supply/trio-ps-2g-1ac-48dc-5-29031598.shtml](https://www.perle.com/products/industrial-power-supply/trio-ps-2g-1ac-48dc-5-29031598.shtml)

## 48V Industrial Power Supply for Regulated AC/DC or DC/DC Conversion

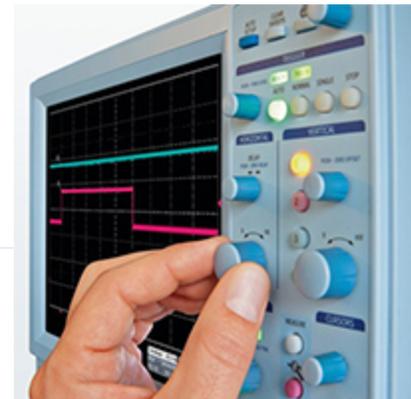
- 48 DC Output Voltage
- 5 Amps
- 240 Watts
- Single phase AC or DC Input
- Input Voltage Range: 85 ... 264 V AC and 99 ... 275 V DC



The **TRIO-PS-2G/1AC/48DC/5 Industrial Power Supply** is a rugged AC to DC and DC to DC Converter built to meet the high stability and efficiency expectations of industrial, machine automation and process control environments. This Switching (switch mode) Power Supply ensures a regulated output voltage even in the event of voltage fluctuations in the power supply network. With all required safety certifications to support ITE (Information Technology Equipment), ruggedized packaging, extended operating temperatures, high peak load capabilities and high isolation voltages, TRIO Industrial Power Supply is designed to meet the needs of your industrial application.

## 150% Dynamic Power Boost

The dynamic boost provides additional power for starting difficult loads. By supplying up to 150% of the nominal current for 5 seconds, the TRIO-PS-2G/1AC/48DC/5 power supply starts difficult loads reliably.



## 36 to 55 V DC Adjustable Output Voltage Range

Using the rotary potentiometer on the front face of the TRIO-PS-2G/1AC/48DC/5 power supply, the output voltage can be optimally adjusted to meet specific application environment requirements. For example, you can easily adjust to compensate for a voltage drop caused by a long cable length.

## Industrial operating temperature of -25°C to +70°C with reliable device start-up at -40°C

Equipment found in traffic management, oil and gas pipelines, weather tracking, industrial and outdoor applications must function in temperatures that cannot be supported by a commercial power supplies. With an operating temperature of -25°C to +70°C and reliable device start-up at -40°C, the TRIO-PS-2G/1AC/48DC/5 Industrial Power Supply is ideal for use with equipment subjected to harsh environments and severe temperatures.

## High efficiency and low no load power consumption

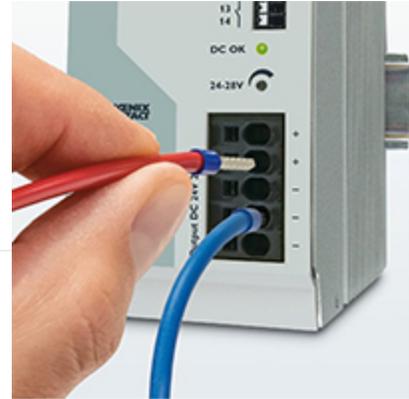
Compared with other products on the market, the TRIO Industrial Power Supply provides excellent energy savings. With a very low no load power consumption and high efficiency at nominal load, just a small amount of electrical energy is converted into undesired heat energy making these very ECO friendly power supplies.

## Easy & efficient installation

The tool-free Push-in connection will save time and make installation quick and easy. And, the DIN Rail mount narrow housing will save space in the control cabinet.

## Ideal application environments for a TRIO-PS-2G DIN Rail Power Supply

- machine building
- automated production process
- industrial control, automation, assembly, and test equipment
- building control, security and surveillance, and climate control systems.
- power countless industrial automation devices such as sensors, controllers and valves



## Other reasons to choose this TRIO-PS-2G Industrial Power Supply

- Contact signal output and LED indicator for voltage out failure: If the output voltage is below the operational range, the LED turns off and the contact opens.
- Vibration resistance up to 4 kg
- Shock resistance up to 30g
- Voltage Isolation input/output: 3 kV AC
- Protections: Short-circuit, Overload, Over voltage, Over-temperature
- High MTBF (Mean Time Between Failure) values of more than 1 million hours at +40°C ensure maximum availability

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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China RoHS	Environmentally Friendly Use Period = 25;
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### General

Net weight	0.9 kg
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Efficiency	typ. 90.5 % (120 V AC)
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	typ. 91 % (230 V AC)
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Insulation voltage input/output	3 kV AC (type test)
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	1.5 kV AC (routine test)
Protection class	I (in closed control cabinet)
Degree of protection	IP20
MTBF (IEC 61709, SN 29500)	> 2000000 h (25 °C)
	> 1200000 h (40 °C)
	> 620000 h (60 °C)
Mounting position	horizontal DIN rail NS 35, EN 60715
Assembly instructions	alignable: horizontally 0 mm ( $\leq 40$ °C) 10 mm ( $\leq 70$ °C), vertically 50 mm
<b>Standards and Regulations</b>	
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 55011 (EN 55022)
Noise immunity	Immunity according to EN 61000-6-1 (residential), EN 61000-6-2 (industrial)
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 61000-6-3
	EN 61000-4-6
Frequency range	0.15 MHz ... 80 MHz
Voltage	10 V (Test Level 3)
Conducted noise emission	EN 55016 EN 61000-6-4 (Class A)

Standard - Electrical safety	IEC 60950-1/VDE 0805 (SELV)
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
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)
Vibration (operation)	DNV GL CG-0339 / Class B 2 Hz - 100 Hz resonance search, 90 min. in resonance, 2 Hz - 25 Hz, ±1.6 mm amplitude, 25 Hz - 100 Hz, 4g acceleration
Rail applications	EN 50121-4
Overvoltage category (EN 60950-1)	II
Overvoltage category (EN 62477-1)	III
<b>Connection data, input</b>	
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
<b>Output data</b>	
Nominal output voltage	48 V DC ±1 %
Setting range of the output voltage ( $U_{Set}$ )	36 V DC ... 55 V DC (> 48 V DC, constant capacity restricted)
Nominal output current ( $I_N$ )	5 A
Dynamic Boost ( $I_{Dyn.Boost}$ )	7.5 A (5 s)

Connection in series	yes
Feedback resistance	$\leq 60$ V DC
Protection against surge voltage on the output	$\leq 60$ 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 $\pm 10$ %)
Residual ripple	< 20 mV <sub>PP</sub> (with nominal values)
Output power	240 W
Peak switching voltages nominal load	< 15 mV <sub>PP</sub>
Maximum power dissipation in no-load condition	typ. 4 W (120 V AC)
	typ. 4.1 W (230 V AC)
Power loss nominal load max.	typ. 24.5 W (120 V AC)
	typ. 20.1 W (230 V AC)
Short-circuit current	< 7 A DC (Permanent)
<b>Connection data for signaling</b>	
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
<b>Dimensions</b>	
Width	42 mm
Height	130 mm
Depth	160 mm
Weight per piece	1120.0 GRM

<b>Input data</b>	
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 $\pm$ 10 %
Dielectric strength maximum	$\leq$ 300 V AC 15 s
AC frequency range	50 Hz ... 60 Hz $\pm$ 10 %
Discharge current to PE	< 3.5 mA
Current consumption	2.9 A (100 V AC)
	2.3 A (120 V AC)
	1.2 A (230 V AC)
	1.2 A (240 V AC)
Nominal power consumption	285.7 VA
Mains buffering	typ. 15 ms (120 V AC)
	typ. 15 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)
Power factor (cos phi)	0.91
<b>Connection data, onput</b>	
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	8 mm

**Ambient conditions**

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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, Derating: 10 %/1000 m)

### Approvals

- cULus Listed
- cULus Recognized
- EAC
- UL Recognized
- cUL Recognized
- cUL Listed
- UL Listed

### TRIO-PS-2G/1AC Industrial Power Supply Block Diagram

