ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Phoenix Contact Quint-PS-100-240AC/24DC/10* at our website: *Click HERE*

Compact Power Supply Units

QUINT-PS-120AC/24DC/10 (... 10/F)

QUINT-PS-230AC/24DC/10 (... 10/F)

- **Electronically short-circuit/idle proof**
- **Extended input voltage range**
- **Reliable isolation (DIN VDE0100-410, EN 60 950)**
- **Mains buffer > 20 ms**
- **LED function display in primary and secondary circuit**
- **COMBICON connecting plug**
- **Redundant circuits can be set up**
- **Small depth of housing**
- **Sturdy high-grade steel housing**



1. Short Description

Compact power supply units from Phoenix Contact have proven themselves for years in the distributed power supply for electrotechnical components. Designed to supply 24 V peripheral devices, QUINT POWER provides output currents of 1, 2.5 and 10 A with a precisely regulated fixed-voltage of 24 V DC and 10, 20, 30 and 40 A, with a regulated, adjustable output voltage of 22.5 to 28.5 VDC. All devices from 10 A upwards have a U/I-characteristic-curve-controlled output. Instead of switching off if a consumer short circuits, they reduce the output voltage if there is an overload, whilst still providing full output current. This ensures that both heavily capacitive loads and devices with DC/DC converters in the primary circuit can be fed without problems using QUINT POWER. Downstream fuses are also triggered reliably. Selectivity in the design of your system is thus guaranteed at all times.

2. Area of Application

The rail-mountable power supply unit QUINT POWER is designed as a primary switched-mode regulator and limits the heat loss to a minimum thanks to an efficiency of about 90%. The low design and high efficiency make the power supply units particularly suitable for installation in decentral distributor boards. Each module keeps the limit values for interference suppression class B, and can thus be used universally – in both extreme industrial conditions and in office and residential environments susceptible to interference.

Headquarters: © Phoenix Contact GmbH & Co. KG • Flachsmarktstraße 8-28 • 32825 Blomberg • Germany
Phone +49-(0) 52 35-3-00 • Fax +49-(0) 52 35-3-4 1200 • http://www.phoenixcontact.com

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

3. Technical Data

Type / Order No.

QUINT-PS-120AC/24DC/10	29 39 072
QUINT-PS-120AC/24DC/10/F	29 39 276
QUINT-PS-230AC/24DC/10	29 39 179
QUINT-PS-230AC/24DC/10/F	29 39 373

Input data		**QUINT-PS-120...10(... 10F)**	**QUINT-PS-230...10(... 10F)**
Input voltage		120 V AC	230 V AC
• input voltage range		93 - 132 V AC (98 - 132 V AC)	187 - 264 V AC (196 - 264 V AC)
• short-term input voltage range (1 min)		75 - 135 V AC	150 -270 V AC
Frequency		47 - 63 Hz	47 - 63 Hz
Inrush surge current at 25 °C		< 24 A	< 24 A
Current consumption at nominal input voltage		approx 3 A	approx 1.6 A
Input fuse, soldered internally		6.3 AT	6.3 AT
Power factor		0.65 (0.75)	0.65 (0.75)
Mains buffering		> 20 ms	> 20 ms
Transient surge voltage protection		varistor (response voltage 150 VAC)	varistor (response voltage 275 VAC)
Output data			
Nominal output voltage/current		24 V DC / 10 A	24 V DC / 10 A
Tolerance		± 1 %	± 1 %
Setting range		22.5 –28.5 V (>24 V constant capacity)	22.5 –28.5 V (>24 V constant capacity)
Starting delay			
• ohmic load / capacitive load		approx. 100 ms	approx. 100 ms
Switching on after applying the mains voltage		approx. 2.5 s	approx. 2.5 s
Startup of capacitive loads		unlimited	unlimited
Surge voltage protection against internal surge voltages		yes	yes
Function display		LED	LED
Connection in parallel		yes, for the design of redundant systems and to increase capacity	yes, for the design of redundant systems and to increase capacity
Current limitation		>1.1 X $I_{nominal}$ ± 5%	>1.1 X $I_{nominal}$ ± 5%$_I$
System deviation with change in load:			
Static 10 - 90 %		< 1 %	< 1 %
Dynamic 10 - 90 %		< 5 %	< 5 %
System deviation with change in input voltage ±10 %		< 0.1 %	< 0.1 %
Ascent time U out (10 % - 90 %)		100 ms	100 ms
Residual ripple / peak switching voltages (1.2 MHz)	idling	10 mV pp / 10 mV pp	10 mV pp / 10 mV pp
	nominal load	150 mV pp / 100 mV pp	150 mV pp / 100 mV pp
Maximum power dissipation	idling	5 W	5 W
	nominal load	53 W	53 W
Climatic Data			
Ambient temperature	Operation	0 °C to +50 °C	0 °C to +50 °C
	Storage	-25 °C to +85 °C	-25 °C to +85 °C
Moisture, without condensation		95 %, 25 °C	95 %, 25 °C
Vibration in acc. with IEC 68-2-6		10 Hz-150 Hz, 0.15 mm or 2 g	10 Hz-150 Hz, 0.15 mm or 2 g
Shock in acc. with IEC 68-2-27		30 g for 18 ms in 3 directions	30 g for 18 ms in 3 directions
Contamination class in acc. with EN 50 178		2	2

4. General Data

Insulation voltage input/output		1.8 kV (3 kV type test)	1.8 kV (3 kV type test)
Electric safety		VDE 0805, EN 60950 UL 1950, CSA 22.2 No. 950 VDE 160, EN 50178 UL 508 c, CSA 22.2 No. 14-M-91 VDE 0100-410 / DIN 57100-410	VDE 0805, EN 60950 UL 1950, CSA 22.2 No. 950 VDE 160, EN 50178 UL 508 c, CSA 22.2 No. 14-M-91 VDE 0100-410 / DIN 57100-410
Safe isolation		DIN VDE 0106-101	DIN VDE 0106-101
Limit for mains current harmonics in acc. with EN 61000-3-2		No (yes)	No (yes)
Installation position		horizontal mounting rail	horizontal mounting rail
Mounting		NS 35 / 7,5 in acc. with EN 50022 can be aligned: distance vertical > 10cm horizontal without spacing	NS 35 / 7,5 in acc. with EN 50022 can be aligned: distance vertical > 10cm horizontal without spacing
Connection / Cross section	Input	COMBICON /0.2- 2.5 mm^2 (AWG 24-12)/rigid/flexible	COMBICON /0.2- 2.5 mm^2 (AWG 24-12)/rigid/flexible
	Output	POWER COMBICON /0.2 - 4 mm^2 (AWG 24-10)/rigid/flexible	POWER COMBICON /0,2 - 4 mm^2 (AWG 24-10)/rigid/flexible
Protection type		IP 20	IP 20
Protection class		I, with PE connection	I, with PE connection
MTBF		> 500 000 h in acc. with SN 29 500	> 500 000 h in acc. with SN 29 500
Efficiency		> 84 % (82 %)	> 84 % (82 %)
Weight		approx. 1.4 kg (approx. 1.8 kg)	approx. 1.4 kg (approx. 1.8 kg)
Approx. dimensions (W x H x D) in mm		180 x 125 x 115	180 x 125 x 115

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Complies with EMC guideline 89/336/EEC and low voltage directive 73/23/EEC

Immunity to interference in acc. with EN 50082-2		
• Electrostatic discharge (ESD)	EN 61000-4-2	Level 3 (6/8 kV) [2]
• Electromagnetic HF field:	EN 61000-4-3	Level 3 (10 V/m) [1]
• Fast transients (Burst)	EN 61000-4-4	Level 3 (2 kV) [2]
• Surge voltage capacities (Surge)	EN 61000-4-5	Inst. class 3 (2 kV) [2] (1 kV normal/2 kV common) [2]
• Conducted disturbance	EN 61000-4-6	10 V, 150 kHz-80 MHz
• Simulation mobile phones	ENV 50204	20 V/m, 900 MHz ± 5 MHz, 50 % VT
Noise emission in acc. with EN 50081-1		
• Emitted radio interference	EN 55022	Class B
• Radio interference voltage at mains input	EN 55022	Class B

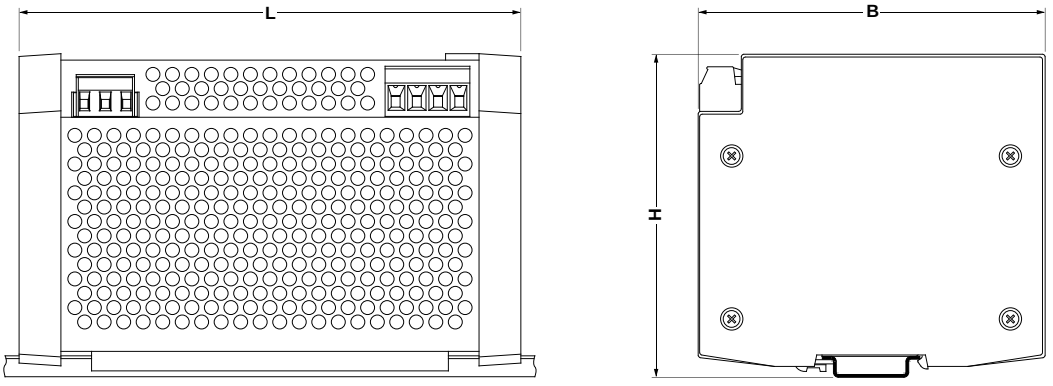
EN 61000 corresponds to IEC 1000 / EN 55011 corresponds to CISPR22

[1] Criterion A: Normal operating behavior within the defined limits.

[2] Criterion B: Temporary impairment to operational behavior that is corrected by the device itself.

Class B: Area of application industry and residential

5. Dimensioned Drawing



L= 180 mm
W= 125 mm
H= 115 mm

Fig. 2

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

6. Connection Scheme

Primary switched-mode compact power supply unit

QUINT-PS-120AC/24DC/10(...10/F)

QUINT-PS-230AC/24DC/10(...10/F)

① AC input
pluggable COMBICON screw terminal block
(0.2 mm^2 to 2.5 mm^2 rigid/flexible)
(AWG 24-12)

② DC output
pluggable POWER COMBICON screw terminal block
(0.2 mm^2 to 4 mm^2 rigid/flexible)
(AWG 24-10)

③ DC o.k. control lamp

④ Power o.k. control lamp

⑤ Potentiometer 22.5 –28.5 V

⑥ Retaining bracket for mounting rail

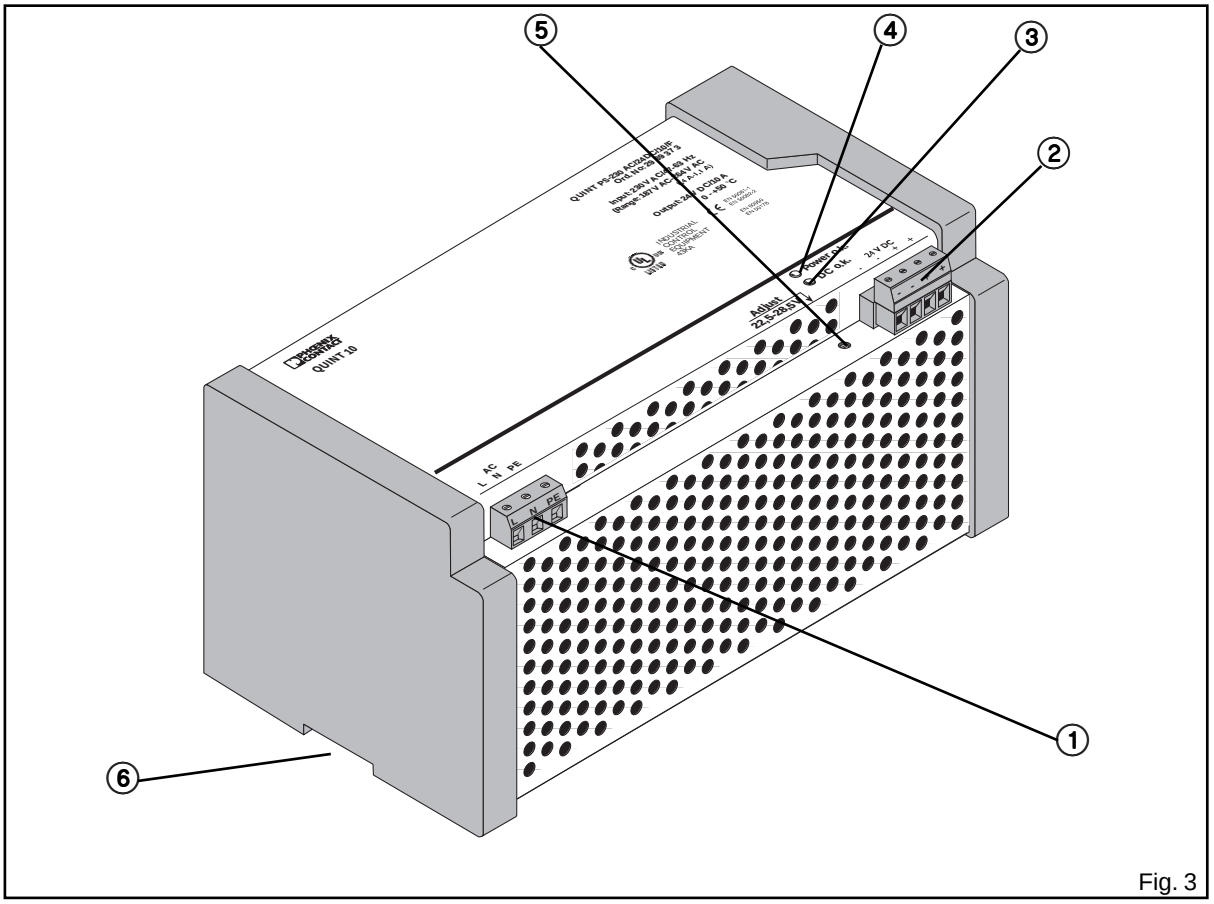


Fig. 3

7. Block Diagram: Primary Switched-Mode Power Supply Unit

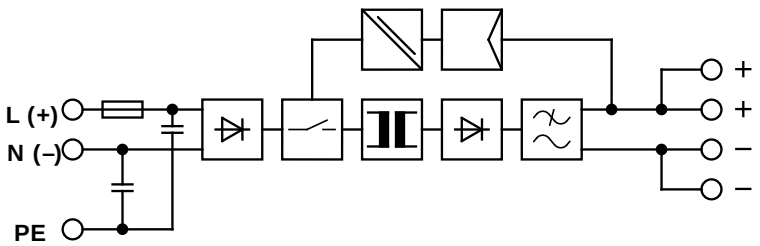


Fig. 4

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

8. Connection and Operating Instructions

In the vertical direction, a minimum distance of 10 cm between other modules and this power supply unit is necessary in order to guarantee sufficient convection. If they are lined up horizontally, no minimum distance must be observed!

8.1. Rail mounting

The power supply units can be snapped onto top-hat rails
NS 35 / 7,5 in acc. with EN 50022-35.

Assembly: Position the module with the mounting rail guide on the **lower edge** of the mounting rail, and snap it in with an **upward motion** (fig. 5a).

Dismantling: Press the module upward against the existing spring resistance ① and slide the module out at the **top edge** of the mounting rail ② (fig. 5b)

8.2. Cable connection

The device is equipped with COMBICON plug connectors. This method of connection, so convenient for installation allows equipment to be replaced quickly and the electrical connection to be visibly separated.

Attention: Never carry out work on live parts Danger!

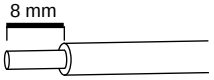
Connecting cable:
You can use the following cable cross sections:
Input

0.2 mm^2 to 2.5 mm^2 rigid/flexible (AWG 24-12).

Output

0.2 mm^2 to 4.0 mm^2 rigid/flexible (AWG 24-10).

In order to comply with the UL, use copper cables that are designed for operating temperatures of 75 °C. **To achieve reliable and shockproof contacts**, strip the connecting ends as shown here!



Input (fig. 6): The 120 V/230 V AC connection is made using the L, N and PE screw connections on the COMBICON plug connection (torque 0.5 Nm) (fig.6). The connection to the various network types is shown in fig. 7.

Power o.k. control lamp signalizes that the device is functioning (page 6, fig. 8 ③).

Assembly Instructions

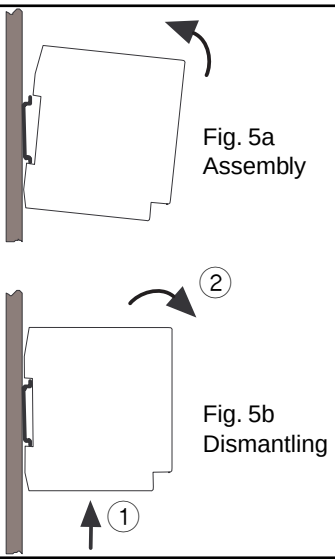


Fig. 5a
Assembly

Fig. 5b
Dismantling

Fig. 5

AC cable connection

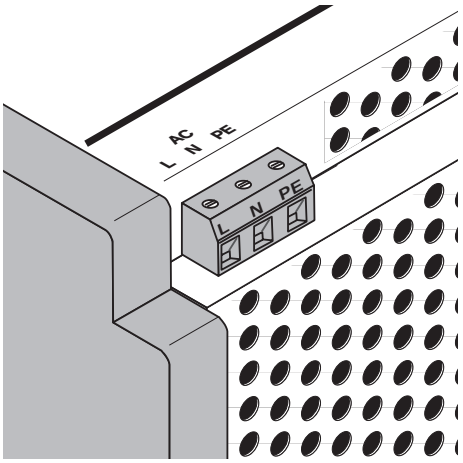


Fig. 6

Network types

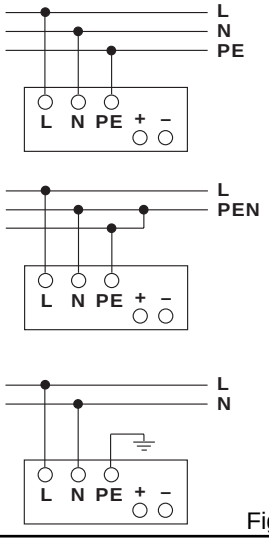


Fig. 7

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Output (fig. 8): The 24 V DC connection is made using the "+" and "–" screw connections on the POWER COMBICON plug connection (torque 0.5 Nm).

At the time of delivery, the output voltage is 24 V DC. The output voltage can be set from 22.5 to 28.5 V DC on the potentiometer ①.
If the DC o.k. control lamp ②goes out, this signalizes a drop in the output voltage as set of more than 2 V DC. If the Power o.k. signal ③ is active and the D:C: o.k. control lamp is off, the device is in the overload range (see also point 4.1. short-circuit/overload). If both LEDs are off, the 120 V/230 V V AC power supply is interrupted.

DC cable connection

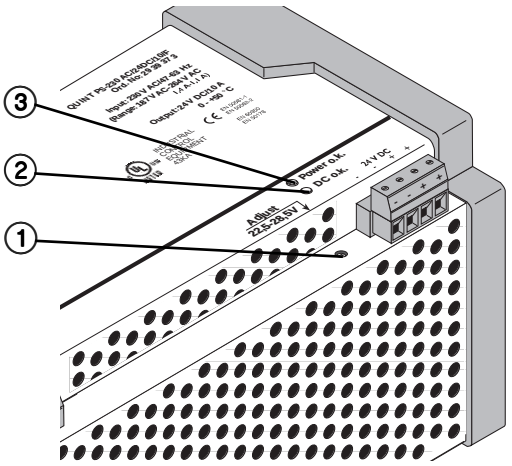


Fig. 8

8.3. Fusing

Primary side: The device is equipped **internally** with a T 6,3 A/250 V fine-wire fuse.

If the internal fuse on the primary side is triggered, there is most probably a malfunction in the device.In this case, the device must be inspected in the factory!

Secondary side: The device is electronically protected against short-circuit and idling. In the event of a malfunction, the output voltage is limited to 35 V ± 5%.

8.4. Redundant operation

If a fault occurs in the primary circuit of device no. 1, device no. 2 automatically takes over the entire power supply, without interruption, and vice versa.

Redundant operation

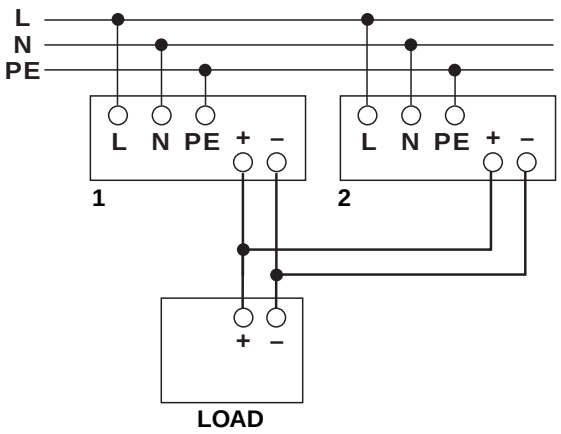


Fig. 9

8.5. Parallel operation to increase capacity

There are no restrictions to parallel connection of the device. For n parallel connected devices, the output current can be increased to **n x I_N** (fig. 9).

9. Characteristic Curves

9.1. Short circuit/overload

The output of the device is **electronically** protected against overload and short-circuiting.
The device can provide 1.1x the nominal current, without switching off. In the event of a high overload, the operating point follows the curve depicted in figure 10. As the overload increases, the output voltage is reduced. The full output current of 11 A remains available.
The output voltage remains reduced until the short circuit on the secondary side has been remedied.

Output characteristic curve

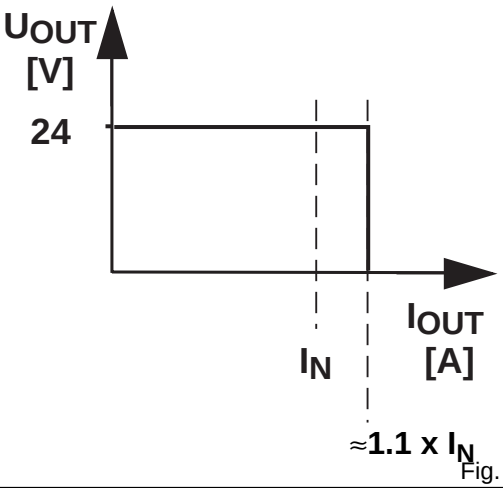


Fig. 10

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

9.2. Thermal behavior

The device supplies a maximum output current of 10 A with ambient temperatures of up to 50 °C. In the case of ambient temperatures above 50 °C, the output current must be reduced by 1 % per Kelvin increase in temperature.
Depending on the load and the environmental conditions, the temperature of the housing can be up to 70 °C.

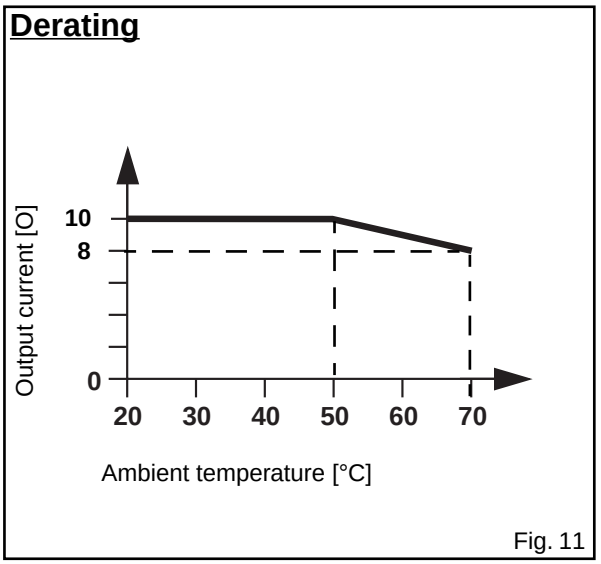


Fig. 11

10. Standards Certifications

10.1. Electric safety

Electrical safety is guaranteed by the construction of the device in acc. with EN 60950 (VDE 0805) and EN 50178 (VDE 0160). The device is certified in accordance with EN 60950/VDE 0805, UL 1950, CSA 22.2 No. 950, and EN 50178/VDE 0160, UL 508 c, CSA 22.2 No. 14-M-91. The requiremnts made of reliable isolation in accordance with VDE 0100-410 und VDE 0106-101 are fulfilled.
• Radio interference suppression in acc. with EN 55 022 class B (industry and residential area)
• Compliance with the EN 61 000-3-2 (mains harmonic currents) for all devices of type .../F (filtered).
The device must be installed in acc. with the regulations as in EN 60950. It must be possible to disconnect the device using a suitable **isolating facility outside the power supply unit**.

10.2. Mechanical safety

• The devices have been tested for shock resistance in acc. with IEC 68 part 2-27 and for vibrations in acc. with IEC 68 part 2-6.
• Protection class I, IP 20 protection.

© PHOENIX CONTACT 15.05.00 TNR: 5087329-01 http://www.phoenixcontact.com

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP