

Modular Housings

Knick ➤

**24 V DC power supply
with broad-range power
supply unit.**

IsoPower® A 20900



The Task

Transmitters and isolation amplifiers which are not loop-powered require a stable and safe supply voltage. The series A 20XXX P0 and P 32XXX P0 devices permit power supply through DIN rail bus connectors. Power supply shall be fed into the DIN rail bus as comfortably as these devices are supplied with power by being snapped onto the DIN rail.

The Problem

In many regions of the world the stability of the public mains supply is not always sufficiently ensured. The nominal voltages of the public mains systems vary from country to country and sometimes even within one country. Therefore, broad-range power supplies are ideal to cover all requirements with one device.

The Solution

The IsoPower® A 20900 power supply provides a 24 V DC output voltage via two terminal pairs. At the rear side there are contacts to the DIN rail bus connector. When the IsoPower® power supply is snapped on the DIN rail, the DIN rail bus is automatically supplied with 24 V. The IsoPower® A 20900 is equipped with broad-range power supply unit. A floating signal contact signalizes a drop in the output voltage of more than 10 %.



The Advantages

The IsoPower® A 20900 power supply is designed for a broad input voltage range of 100 to 240 V AC (–15 % +10 %) which makes it suitable for all typical mains voltages. It ensures a high safety of operation in industrial networks that are influenced by large inductive loads as well as in countries with unstable mains supplies. Using DIN rail bus connectors a supply network for transmitters and isolation amplifiers of the 6-mm class can be built up. The devices can be installed much faster and they can be replaced very easily.

The IsoPower® A 20900 is equipped with pluggable screw terminals for easy installation and replaceability.

Power Supplies

Isolation Amplifiers
Transmitters

Indicators

Process Analytics

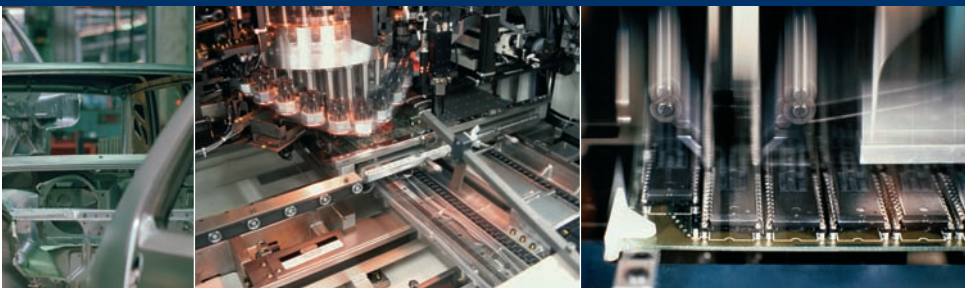
Portable Meters

Laboratory Meters

Sensors

Fittings

Knick ➤



■ The Facts

Slim design 35 mm

World-wide application

100 ... 240 V AC
broad-range power supply

High availability

even in fluctuating mains supply
systems

**Low-priced, fast multiple
supply**

Feeding up to twenty 6-mm
devices conveniently via DIN rail
bus connectors

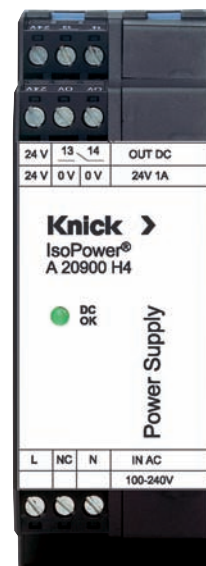
Floating relay output

for monitoring the output
voltage

Pluggable screw terminals

Simple and fast assembly and
prewiring of enclosures

2-year warranty



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■ Product Line

Devices	Input	Output	Order No.
IsoPower® A 20900	100 ... 240 V AC	24 V DC, 1 A	A 20900 H4
Power supply			
100 ... 240 V AC			
Accessories			
DIN rail bus connector ZU 0678	Tapping of supply voltage, routing to ZU 0628 DIN rail bus connector, required number: supply towards left = 1, supply towards right = 2		ZU 0678
DIN rail bus connector ZU 0628	Power supply bridging for two devices, A 20XXX P0 or P 32XXX P0		ZU 0628

■ Specifications

Input data

Nominal input voltage	100 ... 240 V AC (broad-range input)
Input voltage range	85 ... 264 V AC
Frequency	45 ... 65 Hz
Current consumption	Approx. 0.5 A (at 120 V AC) Approx. 0.3 A (at 230 V AC)
Peak inrush current/ I^2t (at 25 °C)	< 15 A/<0.6 A ² s
Turn-on time after applying the mains voltage	< 0.5 s

Output data

Nominal output voltage	24 V DC, ± 1 %
Output current	1 A
Current limitation at short-circuits	7 A
Startup of capacitive loads	Unlimited
Typ. deviation	With static load change 10 ... 90 %: < 1 % With dynamic load change 10 ... 90 %: < 3 % With input voltage change ± 10 % : < 0.1 %
Power loss	Idling Approx. 1 W Nominal load Approx. 5 W

Specifications (continued)

Output data (continued)

Efficiency	> 84 % (at 230V AC and nominal values)	
Rise time V_{OUT} (10 ... 90 %)	< 2 ms	
Residual ripple	< 100 mV _{pp} (at nominal values)	
Surge voltage protection against internal surge voltages	Yes, limited to approx. 30 V DC	
Resistance to reverse feed	30 V DC	
DC OC output, floating, max.: 30 V AC/DC, 1 A	$V_{OUT} > 21.5 \text{ V DC}$	Contact closed
	$V_{OUT} \leq 21.5 \text{ V DC}$	Contact open

Display

Green LED	Signaling of output voltage: $V_{OUT} > 21.5 \text{ V DC}$ LED on $V_{OUT} \leq 21.5 \text{ V DC}$ LED off	
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Isolation

Test voltage	3 kV AC input against output and DC OK output	
Protection against electric shock	Safe Isolation according to EN 50178 by reinforced insulation. Rated isolation voltage 300 V AC across input and output and across input and DC OK output with overvoltage category III and pollution degree 2	
Rated isolation voltage (basic insulation)	Up to 150 V AC/DC across output and DC OK output with overvoltage category III and pollution degree 2	

Standards and approvals

EMC	In conformance with EMC directive 89/336/EEC and low voltage directive 73/23/EEC	
Electrical equipment of machines	EN 60204 (overvoltage category III)	
Safety transformers for switched-mode power supplies	EN 61558-2-17	
Electrical safety	EN 69950 / VDE 0805	
Electronic equipment for use in electric power plants	EN 50178/VDE 0160	
Protective low voltage	PELV (EN 60204)	SELV (EN 60950)

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Specifications (continued)

Standards and approvals (continued)

Limitation of mains
harmonic currents

According to EN 61000-3-2

Approvals

UL/C-UL Recognized UL 60 950
UL/C-UL Listed UL 508

Other data

MTBF ¹⁾

Approx. 57 years

Ambient temperature

Operation: -25 ... +70 °C
Transport and storage: -40 ... +85 °C

Humidity

Up to 95 % at +25 °C, no condensation

Climatic class

3K3 to EN 60 721

Design

Modular housing, width 35 mm, screw terminals, polyamide PA
See dimension drawings for further measurements

Ingress protection

IP20

Mounting

Metal lock for mounting on 35 mm top hat rail according to EN 50022
See dimension drawings for conductor cross section

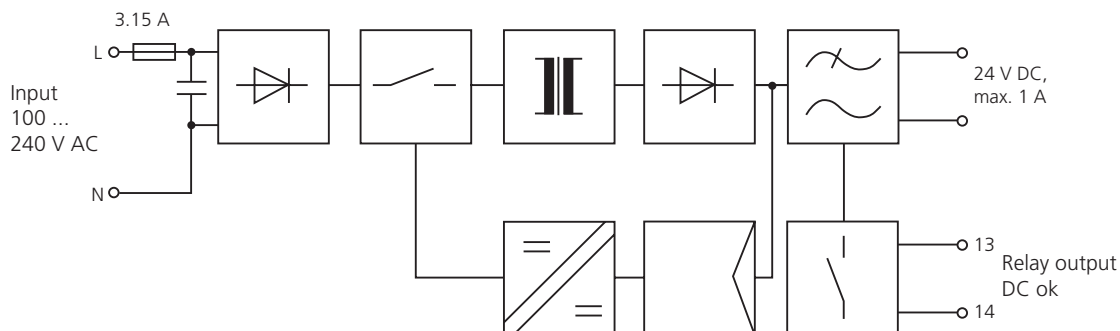
Weight

Approx. 250 g

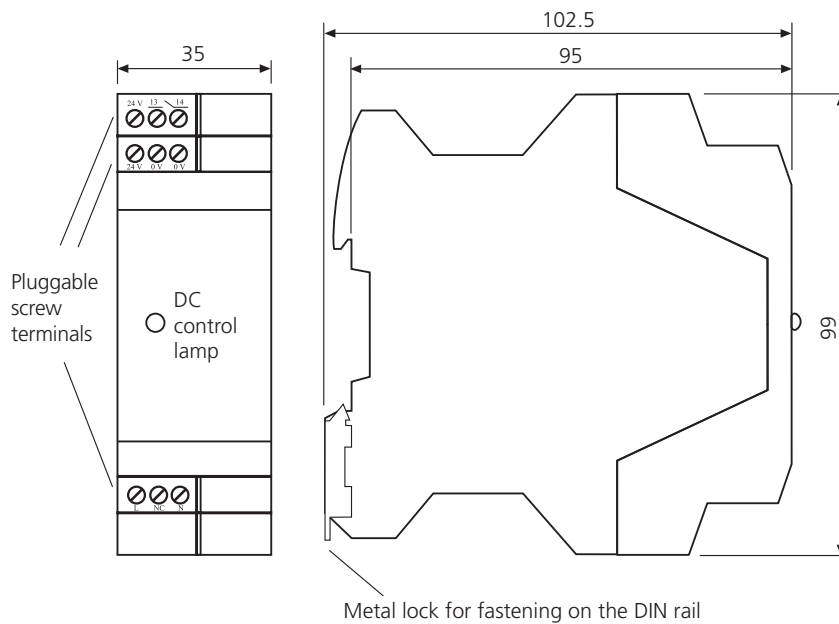
1) Mean Time Between Failures – MTBF – according to EN 61709 (SN 29500).

Conditions: stationary operation in well-kept rooms, average ambient temperature 40 °C, no ventilation, continuous operation

■ Block Diagram



■ Dimension Drawings and Terminal Assignments



Terminal Assignments

- L L conductor input (single-phase AC networks)
- L1 conductor input (three-phase networks)
- NC Not connected
- N (PE)N conductor input (single-phase AC networks)
- L2 conductor input (three-phase networks)
- 24 V 24 V DC outputs
- 0 V 0 V outputs
- 13 Floating relay output
- 14

All dimensions in mm!