



IsoPower A 20900

24 V DC with broad-range power supply

The Task

Transmitters and signal conditioners which are not loop-powered require a stable and safe supply voltage. Power can be supplied to the series A 20XXX P0 and P 32XXX P0 devices 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 power grid is not always sufficiently ensured. The nominal voltages of the power grids vary from country to country and sometimes even within a country. Therefore, broad-range power supplies are ideal in order to meet all requirements with one device.

The Solution

The IsoPower A 20900 power supply provides a 24 V DC output voltage via two terminal pairs. Additional DIN rail bus connector contacts are located on the rear. When the IsoPower power supply is snapped onto the DIN rail, the DIN rail bus is automatically supplied with 24 V. The IsoPower A 20900 is equipped with a broad-range power supply. A floating signal contact indicates if the output voltage is out of range by more than 10 %.

The Advantages

The IsoPower A 20900 power supply is designed for a broad range of input voltages from 100 to 240 V AC (–15 % +10 %) which makes it suitable for all typical mains voltages. It ensures a high level of operational reliability in industrial networks that are influenced by large inductive loads as well as in countries with unstable power grids. DIN rail bus connectors can be used to configure a supply network for transmitters and isolators of the 6-mm class. 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.



IsoPower A 20900

Facts and Features

- **Slim design**
35 mm
- **Global use**
Broad-range power supply
100 ... 240 V AC
- **High availability**
even in fluctuating power networks
- **Easy, quick multiple supply**
Conveniently supply
up to twenty 6 mm devices
using DIN rail bus connectors
- **Floating switching output**
for monitoring output voltage
- **Pluggable screw terminals**
Simple and fast assembly
and prewiring of enclosures
- **2-year warranty**



Product Line

Devices

IsoPower A 20900

Input

100 ... 240 V AC

Output

24 V DC, 1 A

Order no.

A 20900 H4

Power supply

100 ... 240 V AC

Accessories

ZU 0678

DIN rail bus connector

Tapping of supply voltage, routing to ZU 0628 DIN rail bus connector,
required number: Supply towards left = 1,
Supply towards right = 2

Order no.

ZU 0678

ZU 0628

DIN rail bus connector

Power supply bridging for two isolators, A 20XXX P0 or P 32XXX P0

ZU 0628

IsoPower A 20900

Specifications

Input data

Rated 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 ² t (at 25 °C)	< 15 A / < 0.6 A ² s
Turn-on time after applying mains voltage	< 0.5 s

Output data

Rated output voltage	24 V DC, ±1 %
Output current	1 A
Short circuit current limiting	7 A
Start-up of capacitive loads	Unlimited
Typ. control deviation	With static load change 10 ... 90 %: < 1 % With dynamic load change 10 ... 90 %: < 3 % With input voltage change ±10 %: < 0.1 %
Power loss	No-load 2.5 W Nominal load 8 W
Efficiency	> 84 % (at 230 V AC and nominal values)
Rise time V _{out} (10 ... 90 %)	< 2 ms
Residual ripple	< 100 mV _{pp} (at nominal values)
Overvoltage protection against internal overvoltages	Yes, limited to approx. 30 V DC
Feedback strength	30 V DC
DC OK output, floating, max.: 30 V AC/DC, 1 A	V _{out} > 21.5 V DC Closed contact V _{out} ≤ 21.5 V DC Open contact

Display

Green LED	Indication of output voltage: V _{out} > 21.5 V DC LED on V _{out} ≤ 21.5 V DC LED off
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Isolation

Test voltage	3 kV AC across input and output
Protection against electric shock	Protective separation 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 II and pollution degree 2.

Specifications (continued)

Standards and approvals

EMC	In conformance with EMC directive 89/336/EEC and low voltage directive 73/23/EEC
Electrical equipment of machines	EN 60 204 (overvoltage category III)
Safety isolating transformers for switch mode power supplies	EN 61 558-2-17
Electrical safety	EN 50 69950
Electronic equipment for use in power installations	EN 50 178
Safety extra-low voltage	PELV (EN 60 204) SELV (EN 60 950)
Limits for harmonic current emissions	According to EN 61000-3-2
Approvals	UL/C-UL Recognized UL 60 950 UL/C-UL Listed UL 508

Further data

MTBF ¹⁾	Approx. 57 years
Ambient temperature	Operation: -25 ... +70 °C Transport and storage: -40 ... +85 °C
Ambient conditions	Indoor use ²⁾ Relative humidity 5 ... 95 %, no condensation Altitude up to 2000 m (air pressure: 790 ... 1060 hPa) ³⁾
Humidity	Up to 95 % at +25 °C, no condensation
Climatic class	3K3 according to EN 60 721
Design	Modular housing, 35 mm wide, screw terminals, polyamide PA See dimension drawings for other measurements
Tightening torque	0.6 Nm
Ingress protection	IP 20
Mounting	Metal interlock to attach to 35 mm DIN rail according to EN 60715
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

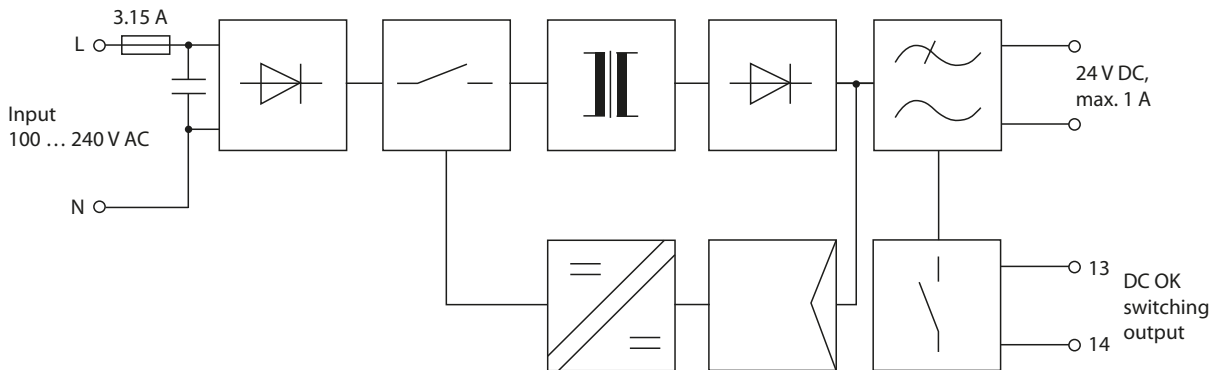
2) Closed, weather-protected operating areas (stationary operation), water or wind-driven precipitation (rain, snow, hail, etc.) excluded

3) Lower air pressure reduces the allowable working voltages.

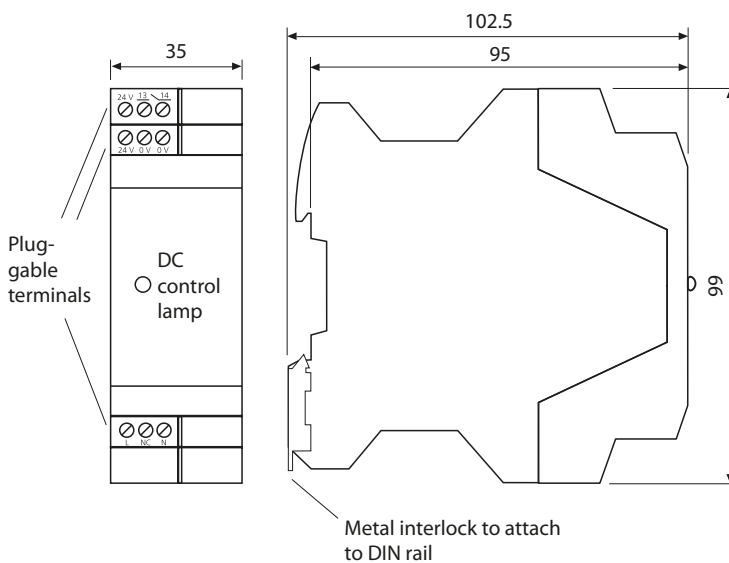
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Block Diagrams

AC/DC Transmitter with Current Input



Dimension Drawing and Terminal Assignments



Terminal assignments

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

All dimensions in mm