

ZS-020

Stabilized Power Supply with Circuit Isolation without/with Transfer Communicating Signal HART

- Galvanic isolation of 4 to 20 mA current loop and transmitter supply
- With 0.1 % accuracy isolates 4 (0) to 20 mA signal or converts 4 to 20 mA signal into 0 to 20 mA signal, active or passive output
- Two-way converting of HART protokol through galvanic isolation
- Dielectric rating 4000 V AC against mains and 2500 V AC output against transmitter supply
- Housing IP 20 (to DIN rails TS 35 and TS 32)
- Meet harsh industrial requirements and EMC standards according to EN 61326-1/A1



Application

The stabilized power supply ZS-020 galvanically isolates a 4 to 20 mA linear current signal and supplies transmitters in two-wire connection in areas without explosion hazard. It can also be used for a conversion of a 4 to 20 mA linear current signal into a 0 to 20 mA signal or for the galvanic isolation of a 4 (0) to 20 mA signal. The power supply can communicate with SMART transmitters through HART protocol by galvanic isolation.

Description

ZS-020 is designed for rail mounting (DIN TS 35 and TS 32). Both the transmitter and the indicator can be connected to the power supply without any additional terminals. Plastic box used is highly mechanically resistant and temperature stable.

Technical Specifications

Application:

galvanically isolating of current signal and supplying of transmitter

Input Signal:

4 (0) to 20 mA

Output Signal:

active output - 4 (0) to 20 mA, max. 600 Ω
passive output - 4 (0) to 20 mA, max. 30 V

Conversion Accuracy:

≤ ±0.1 % (for 0.5 to 20 mA input current)

Voltage Output for Two-wire Transmitter Supply:

(between terminals 2 and 3)
without HART communication 16 to 19 V DC / 21 mA
with HART communication 15 to 19 V DC / 21 mA

Voltage Drop between Terminals 1 and 2:

without HART communication < 230 mV / 21 mA
with HART communication < 2 V / 21 mA

Supply Voltage:

230 V AC (±10 %), 48 to 62 Hz

Power Consumption:

Max. 5 VA

Dielectric Rating:

4000 V AC, input and output circuits against mains circuit
2500 V AC, output circuit against input circuit and transmitter supply

Supplementary Specifications

The power supply is produced as a device of 2nd class of protection, installation overvoltage class 3 according to EN 61010-1. Type of supply circuit for transmitters is SELV. The power supply is resistant against long-term short circuit of output and is protected by a reversible temperature fuse. The power supply is designed for continuous operation and has no cut-out fuse in power input and circuit breaker. Therefore mains supply voltage has to allow switching off.

Effect of Ambient Temperature:

≤ ±0.1 % / 10 °C for signal conversion
≤ ±1.1 % / 10 °C for transmitter supply voltage

Effect of Mains Supply Voltage Change:

without effect on signal conversion

EMC (Electromagnetic Compatibility):

According to EN 61326-1:98/A1:99

Isolation:

Min. 50 MΩ

Operation Conditions

Ambient Temperature:

-30 to +60 °C

Humidity:

10 to 80 % rh

Elevation:

up to 2000 m above sea level

Other Data

Housing According to EN 60529:

IP 20

Weight:

270 g

Material of Boxes:

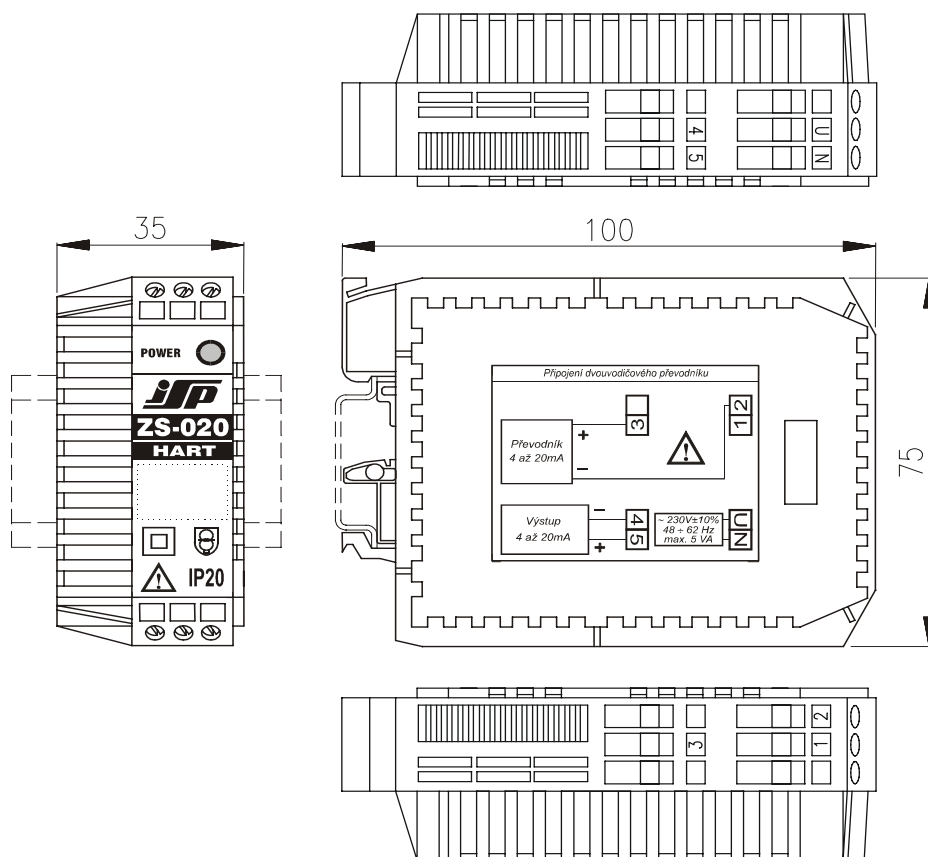
polyamide

Stabilized Power Supply ZS-020 with Circuit Isolation

Dimensional Drawings

Appropriate Mounting Rails:

- 35 x 27 x 7.5 mm EN 50022
- 35 x 24 x 15 mm EN 50022
- 35 x 27 x 15 mm
- 32 mm EN 50035 G-32



Screw terminals for connection of wires with 0.5 to 1.5 mm² cross-section.

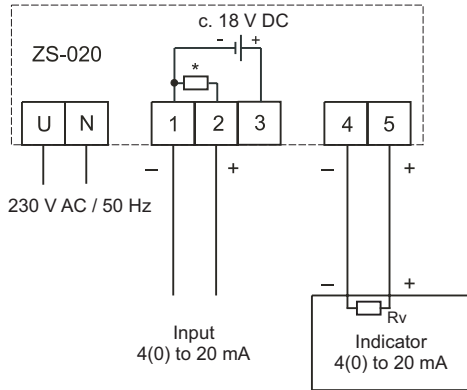
The minimum distance between mains terminals and the metal panel is 8 mm!

Stabilized Power Supply ZS-020 with Circuit Isolation

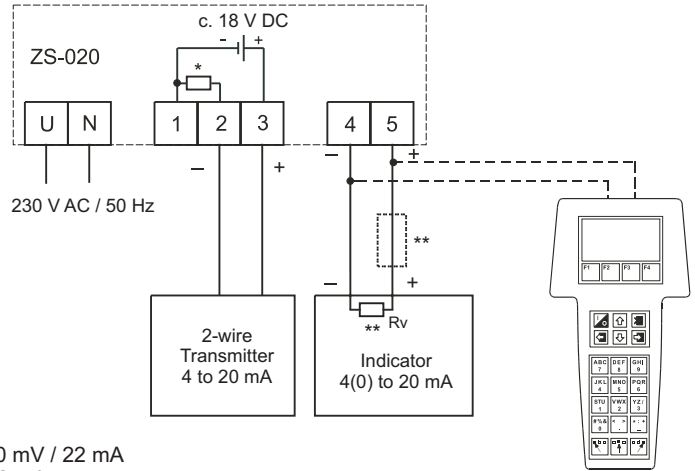
Electrical Connections

Active output

Galvanic Isolation of 4(0) to 20 mA Loop



Galvanic Isolation of 2-wire Transmitter Output Signal



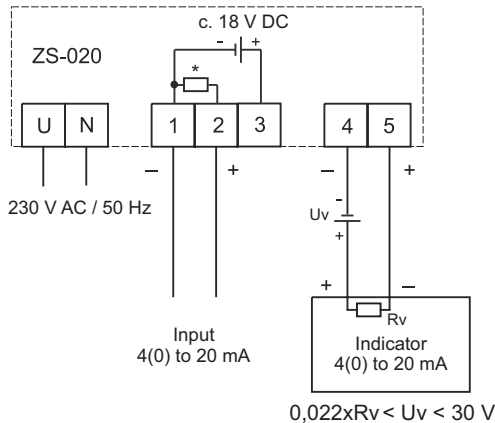
* Voltage Drop without HART communication < 230 mV / 22 mA
Voltage Drop with HART communication < 2 V / 22 mA

** HART communication requires between terminals 4 and 5 a minimum loop resistance of 250 ohms

HART Communicator

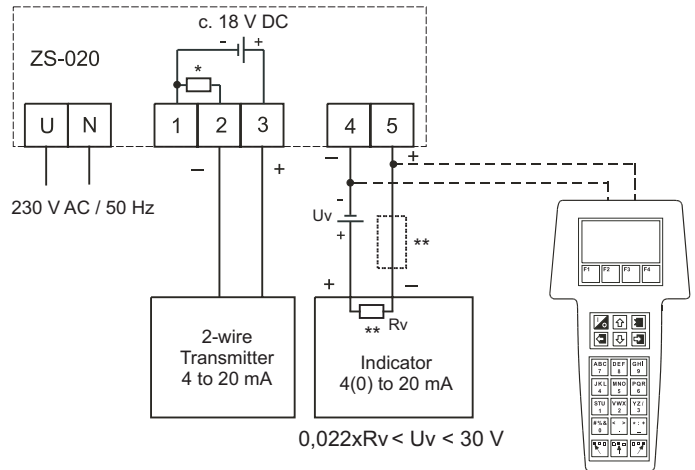
Passive output

Galvanic Isolation of 4(0) to 20 mA Loop



$$0,022xRv < Uv < 30 V$$

Galvanic Isolation of 2-wire Transmitter Output Signal



$$0,022xRv < Uv < 30 V$$

* Voltage Drop without HART communication < 230 mV / 22 mA
Voltage Drop with HART communication < 2 V / 22 mA

** HART communication requires between terminals 4 and 5 a minimum loop resistance of 250 ohms

HART Communicator

Type	Description
• 119 020 →	Stabilized Power Supply ZS-020 with Circuit Isolation (Rail Mounted Version, DIN TS 35 and TS 32)
Code	Signal Conversion
• 0 →	4 to 20 mA into 4 to 20 mA or 0 to 20 mA into 0 to 20 mA without HART Communication
• 1	4 to 20 mA into 0 to 20 mA without HART Communication
2	4 to 20 mA into 4 to 20 mA or 0 to 20 mA into 0 to 20 mA with HART Communication
3	4 to 20 mA into 0 to 20 mA with HART Communication
4	4 to 20 mA into 0 to 5 mA without HART Communication
Code	Optional Version
PV	Passive output
Code	Optional Accessories
S55	Box for Wall Mounting (170x145x85 mm, Housing IP 55)
Example of Order: 119 0200	
• ... Ex Stock Version	