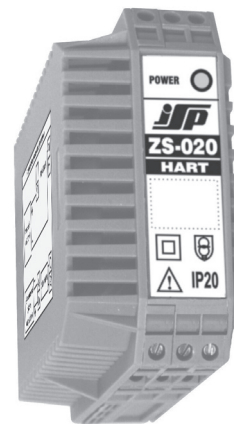


ZS-020 Isolator and Stabilized Power Supply without/with HART Communication Signal Transparency

- Galvanic isolation of current signal and power supply for intrinsically safe transmitter.
- Isolation of 4(0) to 20 mA signal with accuracy of 0,1 %, or conversion of 4 to 20 mA signal to 0 to 20 mA, 4 to 20 mA signal to 0 to 5 mA, active or passive output.
- Two-way transmission of the HART communication signal across galvanic isolation.
- Housing IP 20 (mounted on rail DIN TS 35 and TS 32).
- Dielectric strength 4000 VAC against power supply circuit and 2500 VAC against transmitter powering circuit.
- High resistance to interference according to EN 61326-1/A1 (industrial environment)



Application

The isolation device ZS-020 is designed for galvanic isolation of 4 to 20 mA current signal and for power supply of transmitters in two-wire connection in areas without explosion hazard. It can be also used for conversion of a 4 to 20 mA current signal to 0 to 20 mA current signal or as galvanic isolation of 4(0) to 20 mA. The device supports communication with SMART transmitters using HART protocol across galvanic isolation.

Description

The device is designed for rail mounting – DIN TS 35 and TS 32 with IP 20 housing. Transmitter or indicator can be connected to the power supply device. Used plastic housing features with high mechanical resistance and temperature stability.

Dielectric strength:

- 4000 VAC, input and output circuits against power supply circuit
- 2500 VAC, output circuit against input or transmitter powering circuit

Supplementary parameters

The power supply is designed as insulation class II, installation overvoltage category 3 acc to EN 61010-1 (CAT III - 300 V). The powering circuit for transmitter is type SELV and is resistant against long-term short-circuit and is protected by resettable thermal protection. The device is intended for continuous operation and has no mains power switch, therefore a switch or circuit-breaker must be installed in lead in power line. The manufacturer issued EC Declaration of Conformity.

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ZS-020, Isolator and Stabilized Power Supply

Technical specifications

- Application:** isolating of current signal and power supply of transmitter
- Input signal:** 4 (0) to 20 mA
- Output signal:**
active output 4 (0) to 20 mA, max load 600 Ohm
passive output 4 (0) to 20 mA, max 30 V
- Output signal accuracy:**
 $\leq \pm 0.1 \%$ (for input current 0.5 to 20 mA)
- Voltage for powering of two-wire transmitter:**
(between terminals 2 and 3)
without HART transparency 16 to 19 VDC / 21 mA
with HART transparency 15 to 19 VDC / 21 mA
- Voltage drop between terminals 1 and 2:**
without HART transparency $< 230 \text{ mV} / 21 \text{ mA}$
with HART transparency $< 2 \text{ V} / 21 \text{ mA}$

- Influence of ambient temperature:**
for signal accuracy $\leq \pm 0.1 \%/10^\circ\text{C}$
for transmitter powering voltage $\leq \pm 1.1 \%/10^\circ\text{C}$
- Effect of supply voltage change:**
without any effect on signal accuracy
- EMC:** EN 61326-1
- Isolation resistance:**
min. 50 MOhm

Operating conditions

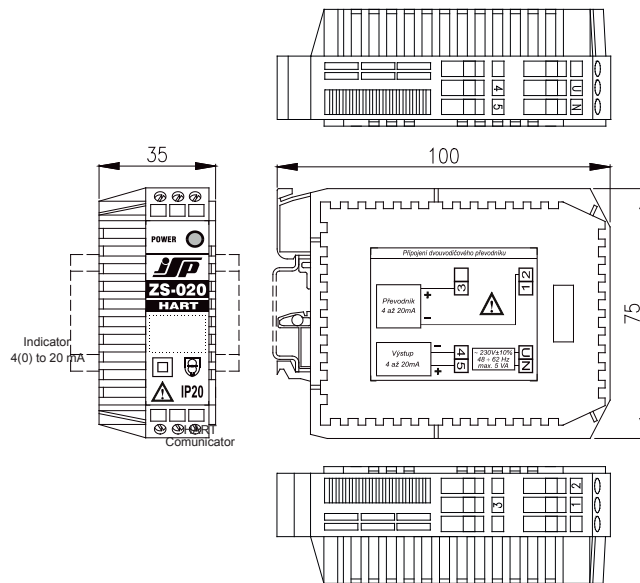
- Ambient temperature:**
 -30 to $+60^\circ\text{C}$
- Humidity:**
10 to 80 % r. h.
- Altitude:**
up to 2000 m above sea level

Dimension drawing

- Suitable 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 are used to connect wires with cross-section of 0.5 to 1.5 mm².

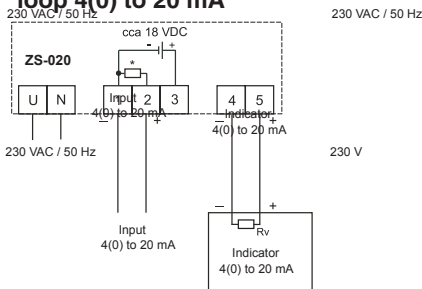
Minimum distance between mains power terminals from metal panel is 8 mm!



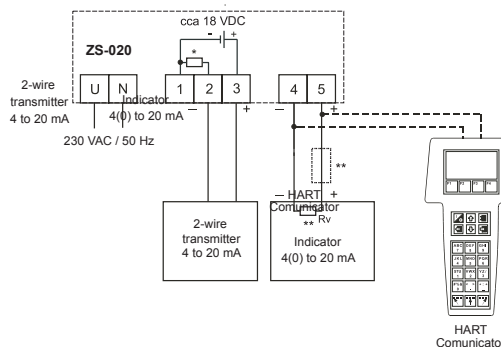
Electrical connections

Active output

Galvanic isolation of intrinsically safe loop 4(0) to 20 mA



Connection of intrinsically safe 2-wire transmitter

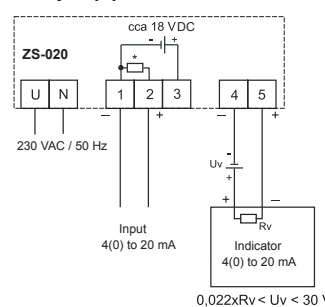


* Voltage drop for device without HART signal transparency $< 230 \text{ mV} / 21 \text{ mA}$.
Voltage drop for device with HART signal transparency $< 2 \text{ V} / 21 \text{ mA}$.

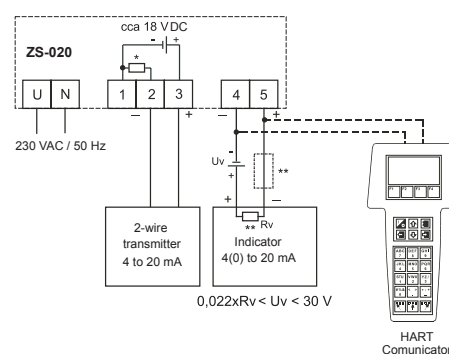
** HART communication requires loop resistance between terminals 4 and 5 to be at least 250 Ohm.

Passive output

Galvanic isolation of intrinsically safe loop 4(0) to 20 mA



Connection of intrinsically safe 2-wire transmitter



* Voltage drop for device without HART signal transparency $< 230 \text{ mV} / 21 \text{ mA}$.
Voltage drop for device with HART signal transparency $< 2 \text{ V} / 21 \text{ mA}$.

** HART communication requires loop resistance between terminals 4 and 5 to be at least 250 Ohm.

Type	Description
• 119 020	ZS-020, isolator and stabilized power supply (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
• 1	4 to 20 mA into 0 to 20 mA
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

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