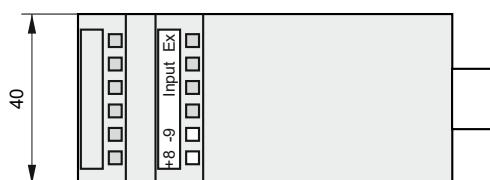
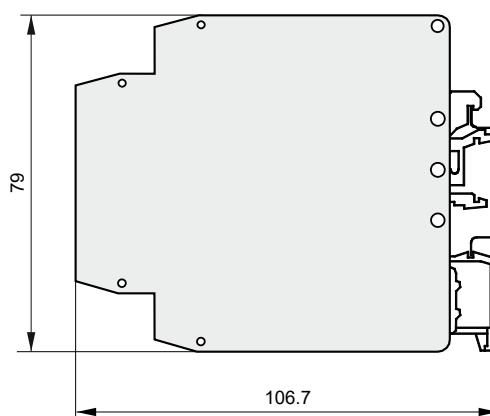
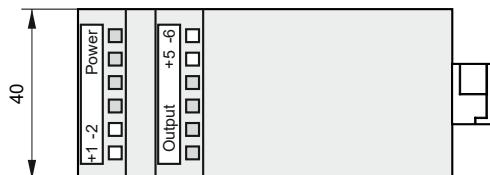


Intrinsically safe network power supply and isolator ZS-31Ex1



- ✓ I (M1) [Ex ia Ma] I
II (1)G [Ex ia Ga] IIC
Ex-rated intrinsically safe
- ✓ **Full galvanic separation of circuits (IN-OUT, IN-SUPPLY, OUT-SUPPLY)**
- ✓ **Accuracy 0,1%**
- ✓ **Casing can be mounted on a standard rail (TS35, TS32)**



Application and functions

The ZS-31Ex1 power supply and isolator is a partially intrinsically safe device with an external (input) intrinsically safe circuit.

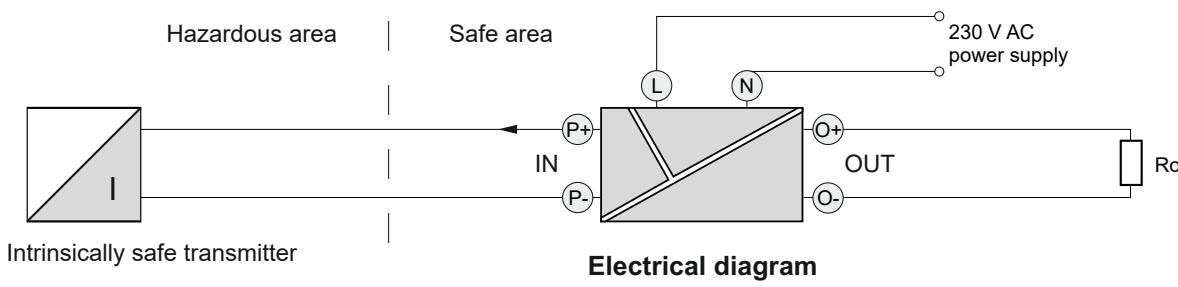
The ZS-31Ex1 is designed to supply power intrinsically safe transmitters used in a hazardous area, with a 4...20 mA signal in a two-wire transmission, and to transform that signal through a galvanic separation circuit into one of the standard signals used in automatic control.

The supply voltage of the intrinsically safe input circuit of the standard version of the ZS-31Ex1 is 25 V DC. At the customer's request this voltage can be altered to 16 or 18 V DC.

The output circuit can be connected to any apparatus with a separated supply voltage of < 250 V (from transformer-based network supplies).

Calibration

The user can adjust the setting of the start-point and width of the range using potentiometers accessible via marked holes in the front panel.



Technical parameters

- Input parameters**

Input signal from the transmitter 4...20 mA

Standard version

Supply voltage of the input circuit U_{IN}	15 V	18 V	20 V	22 V	25 V
Maximum voltage on the terminals of the input circuit U_0	15,75 V	18,9 V	21 V	23,1 V	25,5 V

Input voltage after loading by the transmitter with output signal 4...20 mA $U_{IN20} = U_{IN} [V] \cdot 0,75$
 U_{IN} is the supply voltage of the input circuit

Maximum shorting current of input circuit $I_0 = 100$ mA

- Output parameters**

Output signal	Output load resistance
4...20 mA	500 Ω
0...20 mA	500 Ω
0...5 mA	2 kΩ
0...5 V, 1...5 V, 0...10 V	10 kΩ

Standard version

- Galvanic separation**

IN-OUT optoelectronic
 IN-SUPPLY, OUT-SUPPLY network transformers
 Test voltage between circuits 2,5 kV AC, 50 Hz or equivalent DC

- Conversion errors**

Accuracy	0,1%
Non-linearity	±0,05%
Effect of temperature fluctuations	≤ ±0,1% / 10°C
Effect of load resistance fluctuations	≤ ±0,05%
Effect of supply voltage fluctuations	≤ ±0,1%

- Dynamic characteristics**

Time constant c. 0,05 s (by arrangement: 0,1...1 s)

- Power supply**

Supply voltage rated: 230 V AC ±10%
 Maximum power ≤ 4 VA

- Conditions of normal use**

Ambient temperature 5...60°C
 Relative humidity 30...80%

- Casing**

Ingress protection rating IP20

- Weight**

0,35 kg

Ordering procedure

Standard version ($U_{IN} = 25$ V, output 4...20 mA): **ZS-31Ex1**

Special version: **ZS-31Ex1 / _____ / _____**

Input circuit voltage

Output signal

Important: For transmitters in version ALW with switched on illumination of display and used internal resistor 250Ω should be specified model ZS-31Ex/24V/25.2V.