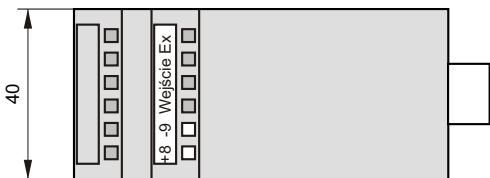
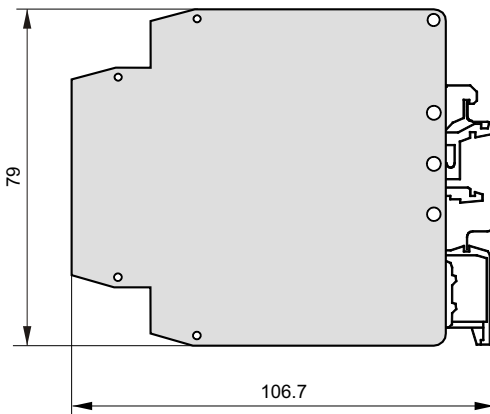
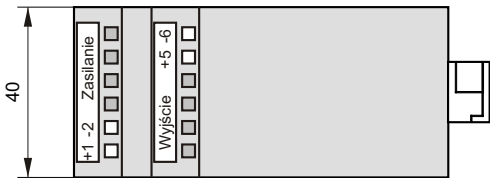


# Intrinsically safe network power supply and isolator ZS-31EEx1



- ✓ **Ex-rated intrinsically safe**  
 $\text{Ex}$  II (1)G [EEx ia] IIC  
 $\text{Ex}$  I (M1) [EEx ia] I
- ✓ **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-31EEx1 power supply and isolator is a partially intrinsically safe device with an external (input) intrinsically safe circuit.

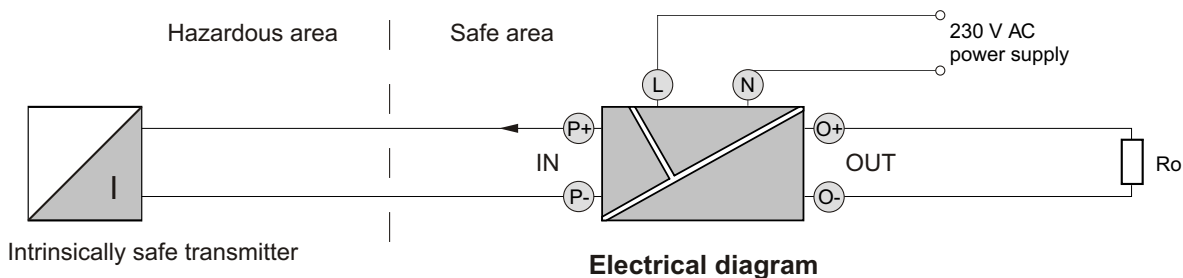
The ZS-31EEx1 is designed to supply power intrinsically safe transmitters used in a hazardous area, with a 4...20 mA signal in a two-wire transmission, and to transform that signal through a galvanic separation circuit into one of the standard signals used in automatic control.

The supply voltage of the intrinsically safe input circuit of the standard version of the ZS-31EEx1 is 20 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 $U_{IN}$	16 V	18 V	20 V	22 V	<b>24 V</b>
Maximum voltage on the terminals of the input circuit $U_0$	16.8 V	18.9 V	21 V	23.1 V	<b>25.2 V</b>

Input voltage after loading by the transmitter with output signal 4...20 mA  
 $U_{IN}$  is the supply voltage of the input circuit

$$U_{IN20} = U_{IN} [V] \cdot 0.7$$

Maximum shorting current of input circuit  $I_0 = 92 \text{ mA}$

- **Output parameters**

Output signal	Output load resistance
<b>4...20 mA</b>	<b>500 <math>\Omega</math></b>
0...20 mA	500 $\Omega$
0...5 mA	2 k $\Omega$
0...5 V, 1...5 V, 0...10 V	10 k $\Omega$

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  $\pm 0.05\%$   
 Effect of temperature fluctuations  $\leq \pm 0.1\% / 10^\circ\text{C}$   
 Effect of load resistance fluctuations  $\leq \pm 0.05\%$   
 Effect of supply voltage fluctuations  $\leq \pm 0.1\%$

- **Dynamic characteristics**

Time constant c. 0.05 s (by arrangement: 0.1...1 s)

- **Power supply**

Supply voltage rated: 230 V AC  $\pm 10\%$   
 Maximum power  $\leq 4 \text{ VA}$

- **Conditions of normal use**

Ambient temperature 5...60 $^\circ\text{C}$   
 Relative humidity 30...80%

- **Casing**

Ingress protection rating IP 20

- **Weight**

0.35 kg

## Ordering procedure

Standard version ( $U_{IN} = 24 \text{ V}$ , output 4...20 mA): **ZS-31EEEx1**

Special version: **ZS-31EEEx1 /**      **/**     

Input circuit voltage

Output signal

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