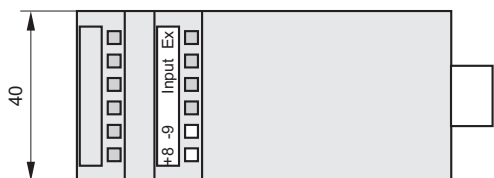
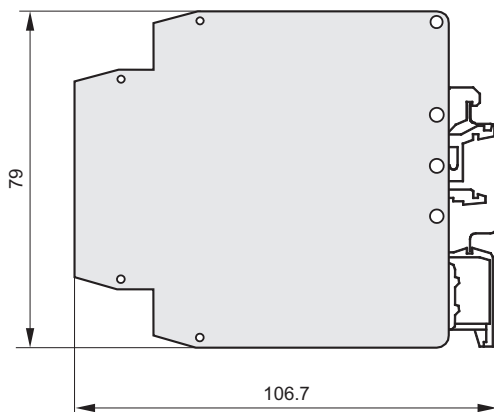
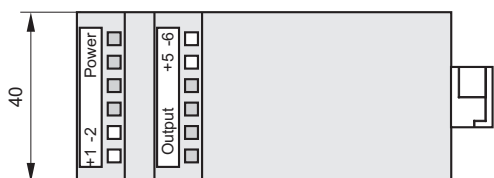


# Intrinsically safe network power supply and isolator ZS-31Ex1



- ✓ 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.

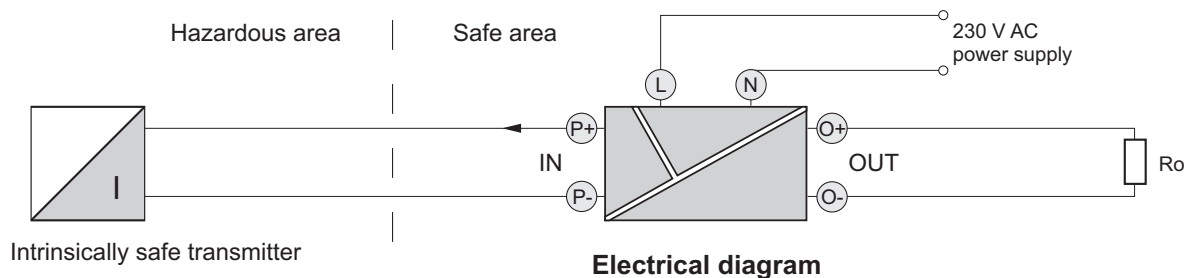
The ZS-31Ex1 is designed to supply power intrinsically safe transmitters used in a hazardous area, with a 4...20 mA signal in a two-wire transmission, and to transform that signal through a galvanic separation circuit into one of the standard signals used in automatic control.

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	<b>25 V</b>
Maximum voltage on the terminals of the input circuit $U_0$	15,75 V	18,9 V	21 V	23,1 V	<b>25,5 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

$$U_{IN20} = U_{IN} [V] \cdot 0,75$$

Maximum shorting current of input circuit

$$I_0 = 100 \text{ mA}$$

### • Output parameters

Output signal	Output load resistance
4...20 mA	<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

IP20

### • Weight

0,35 kg

## Ordering procedure

Standard version ( $U_{IN} = 25 \text{ V}$ , 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 250 $\Omega$  should be specified model ZS-31Ex/24V/25.2V.