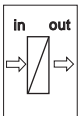
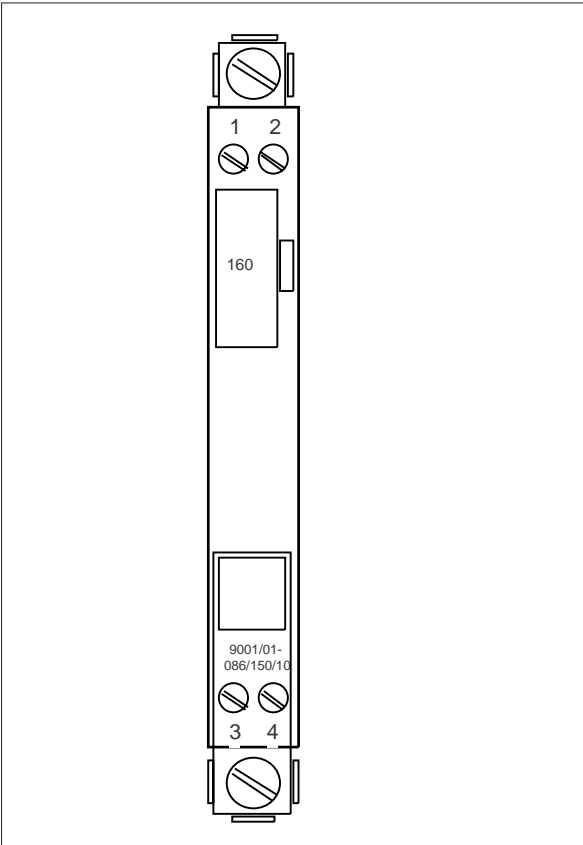


## Operating Instructions

### Safety barrier type 9001



## 1 Application and function

Safety barrier type 9001 is a passive component. With galvanic separation, it converts a non-intrinsically safe circuit into an intrinsically safe circuit.

The term „intrinsically safe“ characterizes a circuit in which the energy flow is limited and stored capacitive and inductive energy is secured in such a way that neither switching operations nor short-circuits can ignite an explosive mixture.

Safety barrier type 9001 takes over this function. It limits the energy flow, damps the capacitance  $C_a$  and the inductance  $L_a$  of the output circuit and reduces the stored energy reliably. Circuits secured in this way cannot ignite explosive mixtures.

### Example:

An indicating instrument is mounted in Ex-areas and requires an intrinsically safe 0 ... 20 mA current signal.

The existing 0 ... 20 mA signal to the indicating instrument however, is not intrinsically safe. Safety barrier type 9001 is connected to the signal cable to supply the indicating instrument in Ex-area with an intrinsically safe 20 mA signal. The safety barrier then provides on its output an intrinsically safe 0 ... 20 mA current signal for the indicating instrument.

### Note:

The capacitance  $C_a$  and inductance  $L_a$  of the output circuit resulting from the indicating instrument and the supply cable must not exceed the stated limit values. The standard wiring normally ensures these values.

## 2 Technical data

### General

Installation position	outside Ex-area on carrier rail
Operating temperature	-20°C ... +60°C
Storage and transport temperature	-20°C ... +75°C
Housing material	Polyamide 6 GF
Cross-section area of conductor	1.5 mm <sup>2</sup> (terminals)
Protection acc. to IEC 60529	
- terminals	IP 20
- housing	IP 40
Weight	115 g
Approvals	
- zone 1	Ex II C 1/2G [EEx ia/ib] IIC/IIB Ex II 3G EEx ia II T4
- zone 2	[EEx ia] II C / [EEx ia] II B

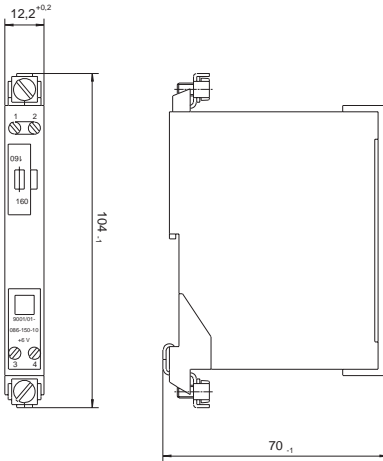
### Input circuit

Nominal voltage $U_N$	6 V DC
Zener voltage	8.6 V
Min. series resistance	$R_{min}$ 64 Ohm
Max. series resistance	$R_{max}$ 73 Ohm
Leakage current against earth at $U_N$	$\leq 1 \mu A$

### Output circuit

Short-circuit current $I_K$	$\leq 150$ mA
Capacitance $C_a$ † EEx ia IIC	$\leq 6.2 \mu F$
Inductance $L_a$ at EEx ia IIC	$\leq 1.3$ mH
Capacitance $C_a$ at EEx ib IIB	$\leq 55 \mu F$
Inductance $L_a$ at EEx ib IIB	$\leq 7$ mH

### 3 Dimensions



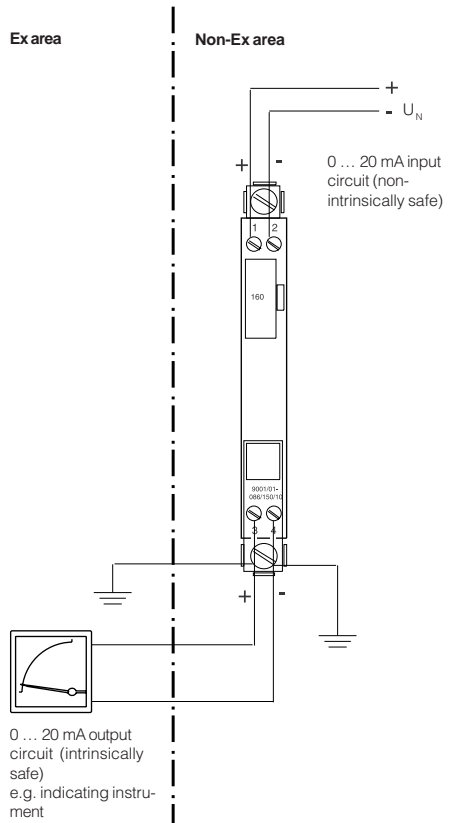
### 4 Mounting

- Mount the safety barrier onto a carrier rail outside of the hazardous area
- Connect the potential equalisation cable from the Ex-area to the projecting PA-terminal
- Connect the intrinsically safe circuit (blue) correctly to the blue-coloured side of the safety barrier. Note the polarity.
- Now connect the non-intrinsically safe circuit correctly to the upper white-coloured side of the safety barrier. Wrong polarity will destroy the safety barrier.

**Note:**

Cables in Ex-areas must have a durable blue marking along their entire length.

### 5 Electrical connection





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## Safety information

Please read this manual carefully, and also take note of country-specific installation standards (e.g. the VDE regulations in Germany) as well as all prevailing safety regulations and accident prevention rules.

For safety and warranty reasons, any internal work on the instruments, apart from that involved in normal installation and electrical connection, must be carried out only by qualified VEGA personnel.



All statements concerning scope of delivery, application, practical use and operating conditions of the sensors and processing systems correspond to the information available at the time of printing.

Technical data subject to alterations