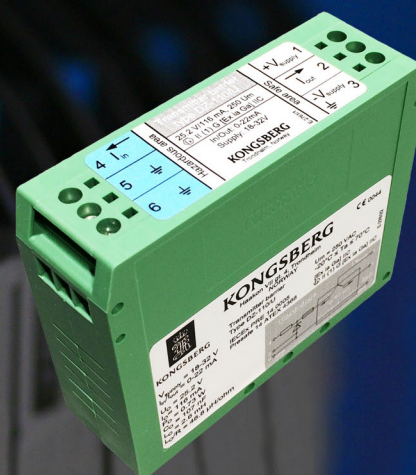


# DZ-110/U



KONGSBERG



## TRANSMITTER BARRIER UNIT

The KONGSBERG DZ-110/U Transmitter Barrier Unit is designed to safely provide signal interface and power supply to Kongsberg instrumentation located in hazardous area. The unit connects intrinsically safe 4-20 mA transmitters.

### Principle of operation

The Transmitter Barrier is installed in safe area, designed to limit the amount of energy that could appear in an electric circuit that connects to instrumentation located in hazardous area. The DZ-110/U is a single channel shunt diode safety barrier, intended for energising a 2-wire, 4-20 mA signal transmitter installed in hazardous area. A “current mirror” amplifier repeats the transmitter current into an equal magnitude safe side current. To prevent leakage through the zener diodes, the voltage applied to the barrier section is regulated and limited to a suitable level. Active current limiting is also incorporated to prevent fuse blow-out during accidental shorting of the transmitter circuit.

### Installation

The Transmitter Barrier is typically installed in the processing cabinet in control room. The DZ-110/U is equipped with blue coloured terminals 4 and 5/6 for connection of the intrinsically safe circuit in hazardous area. Terminals 2 and 3 connects the Transmitter Barrier to an analogue input channel in the monitoring system. The Transmitter Barrier shall be grounded to the Intrinsically Safe busbar in the system (6), by minimum a 1.5 mm<sup>2</sup> cable.

The DZ-110/U snaps to a TS-32 or a TS-35 mounting rail (according to DIN46277). End stoppers shall be used to support the units.

### Special conditions for safe use :

1. The separation distance of minimum 50 mm between intrinsically and non-intrinsically safe circuits has to be observed for the final installation in a cabinet.
2. The DZ-110/U has to be installed in a cabinet with a degree of protection depending on installation, but at least IP22.
3. The ambient temperature range for the DZ-110/U is  $-20\text{ °C} \leq T_a \leq +70\text{ °C}$
4. A grounding/earthing bar must be mounted at the intrinsically safe side of the barrier. Terminal 3 on each barrier must be connected to this bar by a 1.5 mm<sup>2</sup> (minimum) cable.

### Safety instruction:

For safety instruction see the document 373874 K-Gauge Ex I Safety instructions.

# FEATURES

- Intrinsically safe connection of 4 - 20 mA transmitters to safe area
- Snap-on installation to DIN rail (TS-32 or TS-35)
- Small size
- ATEX, IECEx and type approved

# TECHNICAL SPECIFICATIONS

Power supply: 24 VDC nom. (18 - 32 VDC)  
 Input/output current: 0 to 22 mA  
 Voltage available for transmitter and lines:  $V_{supply} - 8$  VDC at 20 mA  
 Voltage available for load:  $V_{supply} - 5$  VDC at 20 mA  
 Output impedance to load:  $> 2$  M  $\Omega$   
 Max. current consumption  
     normal transmitter: 45 mA  
     shorted transmitter; 62 mA

Accuracy at 20 °C:  $<0.05$  % of FRO\*  
 Zero temperature drift:  $<0.005$  % / °C  
 Span temperature drift:  $<0.005$  % / °C

Operating temperature: - 20 °C to + 70 °C  
 Storage temperature: - 25 °C to + 70 °C  
 Relative humidity: Max. 75 % (without moisture condensation)

Dimension: 25 x 79 x 73.5 mm (W x H x D)  
 Protection grade: IP20  
 Weight: 0.1 kg

Ax. wire cross section: 2.5 mm<sup>2</sup>

Ex classification:  $\text{Ex}$  II (1) G [Ex ia Ga] IIC  
 ATEX Directive 2014/34/EU  
 Ex certification: Presafe 14 ATEX 4368  
 IECEx PRE 14.0005

Environmental standards: IACS E10  
 CISPR 22  
 Ex standards: IEC 60079-0  
 IEC 60079-11

### Safety data

Max. safe voltage:  $U_m = 250$  VAC  
 Max. output voltage:  $U_o = 25.2$  VDC  
 Max. output current :  $I_o = 116$  mA  
 Max. output power:  $P_o = 0.73$  W  
 Max. external capacitance:  $C_o = 107$  nF  
 Max. external inductance:  $L_o = 2.6$  mH  
 Max. ratio:  $L_o/R_o = 48.8$   $\mu$ H/ $\Omega$

Type approvals: BV, LRS

Specifications subject to change without any further notice.

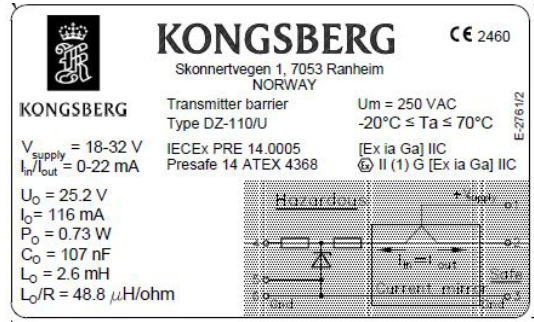


Figure 1: Ex-i information plate

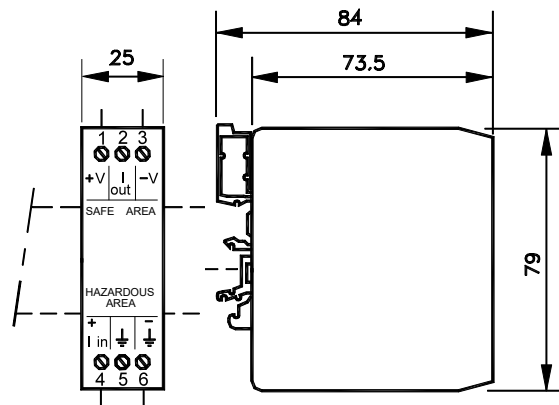


Figure 2: DZ-110/U dimensions

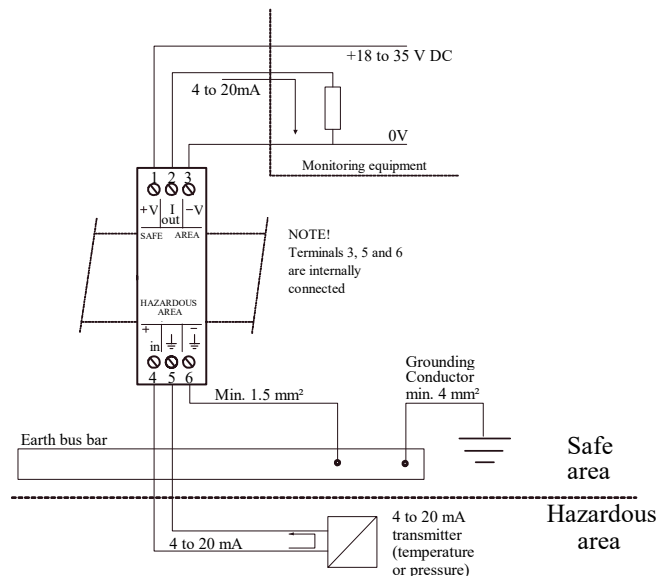


Figure 3: DZ-110/U electrical connection layout.

