

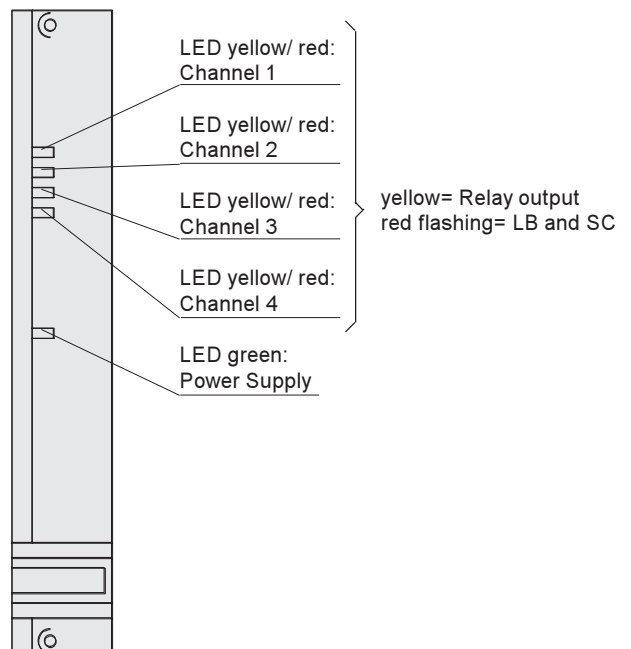
ED2-ST-Ex2.13

ED2-ST-Ex4.13

- 2-Channel Model: ED2-ST-Ex2.13
- 4-Channel Model: ED2-ST-Ex4.13
- Control circuit EEx ia IIC
- DC 24 V supply voltage
- LED's per NAMUR NE 44
- Version: closed circuit
- Lead breakage (LB) and short circuit (SC) can be disabled
- Active transistor outputs, signal
- 1 Relay output: combined fault signal
- EMC per NAMUR NE 21

Front View

Type New Eurocard
Housing
(dimensions
see Catalogue
Eurocards page 11)



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Technical data	
Power supply	
Nominal voltage	DC 20 V ... 35 V
Maximum voltage U_m	40 V
Ripple	$\leq 10 \%$
Nominal current	$\leq 100 \text{ mA} + 8 \times I_{\text{out}}$
	Connections d14 (L+), z14 (L-)
Inputs (intrinsically safe)	
Input I :	Connections d2-; z2+
Input II :	Connections d4-; z4+
Input III :	Connections d6-; z6+
Input IV :	Connections d8-; z8+
Nominal values	per DIN 19 234 with respect to NAMUR
Open circuit voltage / short circuit current	about DC 8 V / about 8 mA
Switch point / switch hysteresis	1.2 mA ... 2.1 mA / about 0.2 mA
Input pulse length / pulse interval	$\geq 0.5 \text{ ms} / \geq 0.5 \text{ ms}$
Lead monitoring	Break $J \leq 0.1 \text{ mA}$ short circuit $J > 6 \text{ mA}$
Certificates	
EC-type Examination Certificate	PTB 99 ATEX 2163X
Category, Ignition protection method	II (1) G [Ex ia] IIC
Peak values	
Voltage U_0	9.6 V
Current I_0	16 mA
Power P_0	38 mW
Allowable circuit values	
Ignition protective method, category	EEx ia, ib EEx ia, ib EEx ia, ib
	IIA IIB IIC
Max. external inductance L_0	900 mH 530 mH 140 mH For further values see
Max. external capacitance C_0	210 μF 26 μF 3.6 μF EU type test certificate
Outputs (not intrinsically safe)	
Output I, II:	Transistor output, active Connections z18+, z20+
Output III, IV:	Transistor output, active Connections z22+, z24+
Output V, VI:	Transistor output, active Connections z26+, z28+
Output VII, VIII:	Transistor output, active Connections z30+, z32+
Maximum voltage U_m	40 V
Nominal current I_{out}	100 mA, permanent short circuit protected
Signal level Logic-1/ Logic-0	$> 16 \text{ V} / < 1 \text{ V}$
Output IX: combined fault signal	Connections b16, z16, d16
Contact load	AC: 50 V / 0.5 A / $\cos \varphi > 0.7$; DC: 40 V / 2 A Ohm load / max. 60 W
Mechanical life	$> 10^6$ switchings
Energized- / De-energized delay	$< 4 \text{ ms} / < 4 \text{ ms}$
Transfer characteristics	
Switch frequency	1 kHz
Galvanic isolation	
Output I ... VIII from each other	No isolation
Output I ... VIII from power supply	No isolation
Output I ... VIII and power supply from inputs	Safe galvanic isolation per EN 50 020, voltage peak value 375 V
Conformity to standards	
Explosion protection	EN 50 014, EN 50 020
Input	per DIN 19234 (NAMUR)
Isolation co-ordination	per DIN EN 50 178
Galvanic isolation	per DIN EN 50 178
Climatic conditions	per DIN IEC 721
EMC / Electromagnetic compatibility	per EN 50 081-2 / EN 50 082-2, NAMUR NE 21
Ambient temperature	-25 °C ... +65 °C (248 K ... 338 K)
Connection method	48-pin plug connector per DIN 41 612, Series 2, Type F; z, b and d provided
Coding	a1 / a9
Weight	about 120 g

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Note:

The mode of operation in quiescent current i.e. in case of undamped sensor resp. closed contact the output relays are de-energized (Logic-0). On lead breakage the relay outputs switch to the safe state (Logic-0) independent from the condition of the sensors.

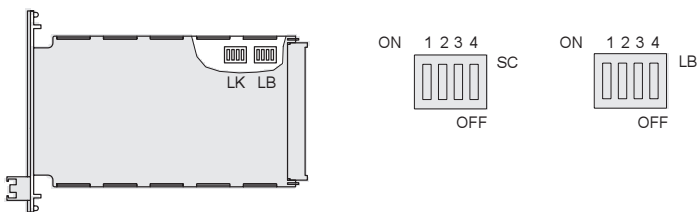
Table: Mode of Operation

Input	Output (Transistor)	LED	Lead Breakage Monitorin (LB)
	Logic-0	off	with
	Logic-1	off	with
	Logic-0	off	with

Attention:

When using a mechanical contact as a pulse generator for lead breakage monitoring, the contact should be switched with a resistor of 10 kOhm in parallel and 1 kOhm in series.

Side View



DIP-Switch SC, SC1 ... SC4

Short circuit monitoring with "ON" or "OFF" switch settings.

DIP-Switch LB, LB1 ... LB4

Lead breakage monitoring with "ON" or "OFF" switch settings.