The RTD transducer type MC32-11Ex0-Ri is designed to evaluate temperature dependent changes from PT100 RTDs and to convert them into analogue current signals from 0/4…20 mA. A four digit display on the front of the device indicates the actual temperature.

The input circuit of the transducer can process signals from 2, 3 or 4-wire PT100 RTDs; the input device type is selected during programming.

Line compensation for 2-wire circuits can be done through the transducer. To do this, a 100 Ω resistor must be connected prior to parameter adjustment to close the input circuit of the instrument.

The input circuit is monitored for wire-break and short-circuit condition. When faults in the input circuit occur, the alarm output de-activates (relay contact open, transistor not conducting). The display indicates “err” (Error) and the green power LED changes to red.

The current output during a malfunction in the input circuit (wire-break, short-circuit condition) can be programmed to automatically go either to 0 mA or ≥ 22 mA, or to follow the direction of the input signal (0 mA for wire-break, ≥ 22 mA for short-circuit condition).
Analogue Data Transmitters

All functions are programmed by two toggle switches on the front panel, or with personal computer (PC). The following parameters can be preselected:

- upper limit of analogue range
- lower limit of analogue range
- Current output: 0/4...20 mA
- Analogue output characteristics during malfunction: linear/0 mA/≥ 22 mA
- Input: 2-, 3-, 4-wire circuits

The four digit LED character display on the front of the device indicates which parameter has been selected and shows the predefined parameter value.

The temperature for the full input range is adjustable from -100...+650 °C (the smallest measuring span is 20 K).

### Type

**MC32-11Ex0-Ri/24VDC**

**Ident-No.**

90 410 04

### Supply Voltage $U_B$

- Ripple $W_{PP}$: $\leq 10 \%$
- Overvoltage release: $33 \text{ V} \pm 1.5 \text{ V}$
- Power/Current consumption: $< 180 \text{ mA}$
- Galvanic isolation: between input circuit, output circuit and supply voltage for $250 \text{ V}_{\text{rms}}$, test voltage $2.5 \text{ kV}_{\text{rms}}$

### Input Circuit

- **Type**: intrinsically safe per EN 50020
- **RTD input**: PT100 DIN IEC 751, for 2-, 3- and 4-wire circuits
- **Incoming cable resistance**: $20 \Omega$/cable
- **Sensor current**: $< 2 \text{ mA}$ at $0 \; ^\circ\text{C}$; $< 1 \text{ mA}$ at $< 100 \; ^\circ\text{C}$

### Output Circuits

- **Current output**: 0/4...20 mA (load $\leq 600 \Omega$)
- **Alarm outputs**:
  - Transistor output: pnp, short-circuit protected ($I_L \leq 50 \text{ mA}$)
  - Relay output: 1 potential-free SPDT contact
- **Switching voltage**: $\leq 250 \text{ V}$
- **Switching current**: $\leq 2 \text{ A}$
- **Switching capacity**: $\leq 500 \text{ VA}/60 \text{ W}$
- **Contact material**: silver-alloy + 3 µm Au

### Interface

- **RS232 serial/V.24 via adapter MC-IM-232**

### Ex-Approval acc. to Certification of Conformity

- **Input circuit**
  - Maximum nominal values:
    - No-load voltage $U_0$: $18.9 \text{ V}$
    - Short-circuit current $I_k$: $30.8 \text{ mA}$
  - Maximum external inductances/capacitances: [EEx ia] IIC $1 \text{ mH}/136 \text{ nF}$
- **Transfer Characteristics**
  - Effective temperature range: -100...+650 °C (high and low value adjustable with switches located on the front)
  - Temperature difference: $> 20 \; ^\circ\text{C}$ for full range
  - Linearity tolerance: $\leq 0.1 \; ^\circ\text{C} / 0.1 \%$ of full scale
  - Effect of load impedance: $\leq 0.01 \%$ of final value
  - Effect of supply voltage impedance: negligible
  - Ambient temperature sensitivity: $\leq 0.01 \%$/K of final value
  - Pulse rise time (10...90 %): $< 1 \text{ s}$
  - Pulse release time (90...10 %): $< 1 \text{ s}$

### LED Indication

- Power "ON" (2-colour LED): green: Power "ON" - red: fault
- Pulse range selected for programming: green
- Parameter selected for programming: green
- Display: red (4 digits)

### Eurocard

- **Connection**: 100 x 160 mm (DIN 41494)
- **Connector per DIN 41612, type F, 32-pole (series z+d)**
- **Coding No. 16**

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**Dimensions**:

- 120.5 x 175.5 mm
- + 20.32 mm