The MC33-12Ex0-i is designed to energise intrinsically safe 2-wire loop-type transmitters located in the hazardous area and to transmit standard analogue signals from a hazardous area to a safe area.

The single channel control unit provides two output circuits that process current signals from 4...20 mA. A green LED provides power “ON” indication.

Both outputs are isolated from each other, from the supply voltage and from the input. Input signals are transferred without attenuation (1:1) to the output.

Due to this 1:1 transfer, wire-break and short-circuit faults are displayed as current signals of 0 mA or ≥ 22 mA and can be evaluated by the remote PLC.

- Intrinsically safe input circuit [EEex ia] IIC
- Power supply for 2-wire transmitters
- Galvanic isolation between input circuit, output circuit and power supply
- Current limiting within the transmitter loop
- Input circuit 4...20 mA
- Two galvanically isolated output circuits 4...20 mA
- Linearity ≤ 0.1 %
- Temperature drift ≤ 0.005%/K of final value
Analogue Data Transmitters

Type
Ident-No.
MC33-12Ex0-i/24 VDC
90 430 11

Supply Voltage $U_B$
- Ripple $W_{pp}$ ≤ 10 %
- Overvoltage release 39 V ± 1 V
- Power/Current consumption < 4.5 W
- Galvanic isolation between input circuit, output circuit and supply voltage for 250 Vms, test voltage 2.5 kVms

Transducer Circuit
- Input resistance 100 Ω
- Operating characteristics
  - Supply voltage see characteristic curve
  - Current 4...20 mA
  - Short-circuit current limitation typ. 35 mA

Output Circuits
- Current output 4...20 mA
- Load ≤ 600 Ω

Ex-Approval acc. to Certification of Conformity
- TÜV 98 ATEX 1258X
- Input circuit
  - Maximum nominal values
    - No-load voltage $U_0$ 21 V
    - Short-circuit current $I_0$ 80 mA
    - Internal resistance $R_i$ 451 Ω (trapezoidal characteristic curve)
    - Output power $P_0$ 0.7 W
  - Maximum external inductances/capacitances
    - [Ex ia/ib]1B 5 mH/350 nF
    - [Ex ia/ib]1C 0.75 mH/75 nF

Transfer Characteristics
- Linearity tolerance ≤ 0.1 % of final value (typically 0.03 %)
- Effect of load impedance negligible
- Effect of supply voltage impedance negligible
- Ambient temperature sensitivity ≤ 0.005 % / K of final value
- Pulse rise time (10 %...90 %) < 60 ms
- Pulse release time (90 %...10 %) < 60 ms

LED Indications
- Power "ON" green

Eurocard
- Material glass-fiber reinforces epoxy resin, quality class FR4
- Front panel plastic, 4TE = 20.32 mm individually interlocking
- Connection connector per DIN 41612, type F, 32-pole (series z+d)
- Operating temperature -25...+60 °C
- Coding No. 119

![Diagram of the device]