The single channel loop isolator MK33-11Ex-HLi/24VDC is used to energise intelligent 2-wire transducers in the hazardous area and transmit 4...20 mA signals to the non-hazardous area. In addition to analogue signals, digital HART communication signals can be transferred bidirectionally.

A green LED indicates operational readiness. A 24 VDC voltage supply is required for operation.

The input circuit is securely isolated from the power supply and the output circuit. The analogue input signal is transferred without attenuation (1:1 transfer) to the output circuit in the non-hazardous area.

The device is connected via terminals 1/4. Handheld terminals (HHT) can be connected to input terminals 1/4, output terminals 8/9, or to the FSK-bus terminals 7/10.

Terminals 2/5 can be used to transmit active 4..20 mA signals (without digital communication) from the hazardous area.

The input circuits may only be used alternatively.

1) FSK = frequency shift keying
**Type**  
MK33-11Ex-HLi/24VDC

**Ident-No.**  
75 064 11

**Supply Voltage** $U_s$  
19.2…30 VDC

**Ripple $W_{pp}$**  
$\leq 10\%$

**Current consumption**  
$\leq 1.05$ W

**Galvanic isolation**  
between input circuit, output circuit and supply voltage for 250 Vrms, test voltage 2.3 kVrms

**Transducer Circuit**  
intrinsically safe according to EN 50020

**Input resistance**  
$< 1$ V as switching amplifier

**Operating characteristics**  
- Voltage: $> 14$ V at 22.7 mA, short-circuit protected
- Ripple $W_{pp}$: $< 100$ mV
- Current: $21$ mA $\pm 1$ mA
- Short-circuit current: $23$...$30$ mA

**Output Circuits**  
Current output terminals 8/9: 0/4…20 mA

**Ripple $W_{pp}$**  
$< 0.25\%$ without input interference voltage

**Wire-break monitoring**  
2 mA with activated wire-break monitoring

**Load impedance**  
$\leq 500$ $\Omega$ with wire-break monitoring / $\leq 600$ $\Omega$ without wire-break monitoring

FSK-interface terminals 7/10: 0…30 VDC

**Ex-Approvals acc. to Certificate of Conformity**  
PTB Ex-97.D.2151

**Input circuit**  
terminals 1/4

**Maximum values**  
- No load voltage $U_0$: $< 20$ V
- Short-circuit current $I_K$: $< 28.5$ mA
- Power $P_0$: $< 570$ mW
- Internal inductances/capacitances: $< 220\mu H/3\mu F$

**Maximum external inductances/capacitances**  
- $[EEx ib]IIB$: $< 4.8\mu H/397\mu F$
- $[EEx ib]IIC$: $< 1.3\mu H/95\mu F$

**Data according to certificate of conformity**

**Transfer Characteristics**

**Linearity tolerance**  
$\leq 0.1\%$ of final value

**Measuring tolerance**  
$\leq 0.25\%$

**Load impedance**  
$\leq 0.05\%$

**Effect of load impedance**  
$\leq 0%$ of final value

**Ambient temperature sensitivity**  
$\leq 0.1\%/10K$ (at $<-10 ^\circ C$ $0.25\%/10K$)

**Pulse rise time** (10%...90%):  
$< 50$ ms

**Release time** (90%...10%):  
$< 50$ ms

**LED Indication**  
- Power "ON" green

**Housing**  
12-pole, 27 mm wide, Polycarbonate/ABS  
flammability class V-0 per UL 94

**Mounting**  
Snap-on clamps for top-hat rail (DIN 50022)  
or screw terminals for panel mounting

**Connection**  
via flat terminals with self-lifting pressure plates

**Connection profile**  
$\leq 2 \times 2.5$ mm$^2$ or $2 \times 1.5$ mm$^2$

**Degree of protection** (IEC 60529/EN 60529)  
IP20

**Operating temperature**  
$-25...+60 ^\circ C$