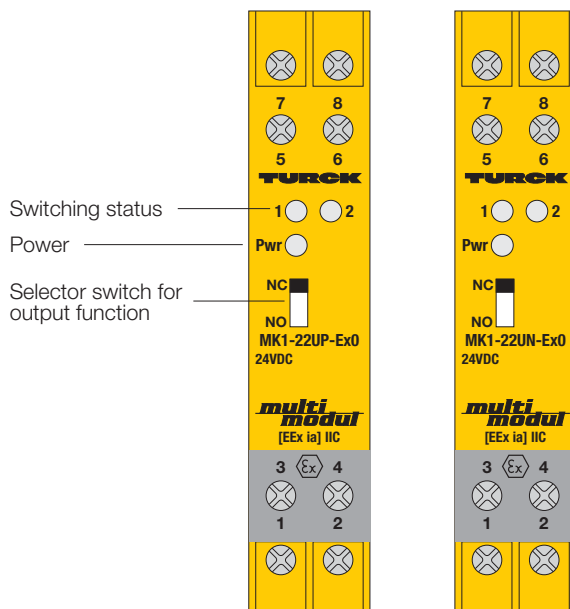




Isolating switching amplifier MK1-22UP-Ex0/24VDC MK1-22UN-Ex0/24VDC 2-channel



- **2-channel isolating switching amplifier**
- **Intrinsically safe input circuits EEx ia**
- **Area of application acc. to ATEX: II (1) GD**
- **Galvanic isolation between input circuit, output circuit and supply voltage**
- **2 short-circuit protected transistor outputs:**
 - pnp (MK1-22UP-Ex0)
 - npn (MK1-22UN-Ex0)
- **Selectable NO/NC output function**

The MK1-22UN-Ex0 and MK1-22UP-Ex0 are dual channel devices with intrinsically safe input circuits. They can be used in conjunction with sensors conforming to EN 60947-5-6 (NAMUR), variable resistors or potential-free contacts.

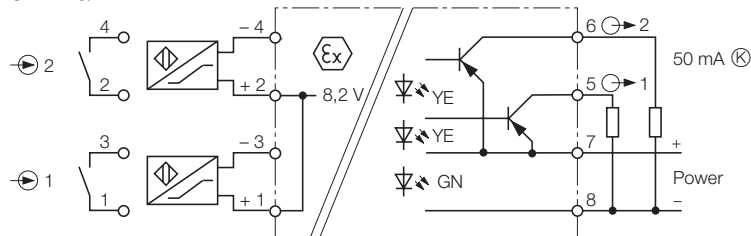
Each device is equipped with two short-circuit protected transistor outputs. There are pnp versions (MK1-22UP-Ex0) and npn versions (MK1-22UN-Ex0) available.

The output function of both channels is selected by a switch located on the front cover. Switch positions NO and NC represent normally open mode (NO) and normally closed (NC) mode, respectively.

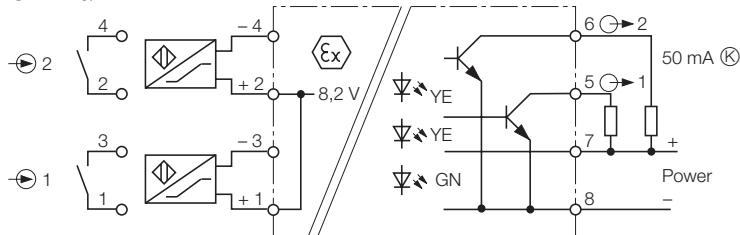
These units do not feature input circuit monitoring (wire-break and short-circuit). If input circuit monitoring is required, the switching amplifiers MK13-22UN-Ex0 or MK13-22UP-Ex0 should be used.

A green LED indicates that the device is powered. The switching status of the outputs is signalled by two yellow LEDs.

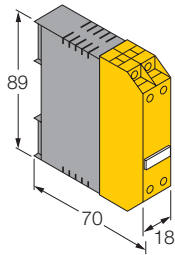
MK1-22UP-Ex0/...



MK1-22UN-Ex0/...



Isolating switching amplifier MK1-22UP-Ex0/MK1-22UN-Ex0

Type	MK1-22UP-Ex0/24VDC	MK1-22UN-Ex0/24VDC
Ident-No.	7505604	7505602
Supply Voltage U_B	19...29 VDC	19...29 VDC
Ripple W_{PP}	$\leq 10 \%$	$\leq 10 \%$
Current consumption	approx. 50 mA	approx. 50 mA
Galvanic isolation	between input circuit, output circuit and supply voltage for 250 V _{rms} , test voltage 2.5 kV _{rms}	between input circuit, output circuit and supply voltage for 250 V _{rms} , test voltage 2.5 kV _{rms}
Input Circuits	according to EN 60947-5-6 (NAMUR), intrinsically safe according to EN 50020	according to EN 60947-5-6 (NAMUR), intrinsically safe according to EN 50020
Operating characteristics		
– Voltage	8 V	8 V
– Current	5 mA	5 mA
Switching threshold	1.55 mA	1.55 mA
Hysteresis	typ. 0.2 mA	typ. 0.2 mA
Output Circuits	2 pnp transistor outputs	2 npn transistor outputs
Voltage drop	≤ 2.5 V	≤ 2.5 V
Switching current per output	≤ 50 mA, short-circuit protected	≤ 50 mA, short-circuit protected
Switching frequency	≤ 3 kHz	≤ 3 kHz
Ex-Approval acc. to Certificate of Conformity	TÜV 03 ATEX 2031	TÜV 03 ATEX 2031
Maximum nominal values		
– No load voltage U_0	12 V	12 V
– Short-circuit current I_0	36 mA	36 mA
– Power P_0	≤ 108 mW	≤ 108 mW
Maximum external inductances/capacitances		
– [EEx ia] IIC	1 mH/610 nF (alt. 2/5 mH / 520/430 nF)	1 mH/610 nF (alt. 2/5 mH / 520/430 nF)
– [EEx ia] IIB	5 mH/2,4 μ F	5 mH/2,4 μ F
Marking of device	I (1) GD [EEx ia] IIC	II (1) GD [EEx ia] IIC
LED Indications		
– Power "ON"	green	green
– Switching status	2 x yellow	2 x yellow
Terminal Housing	8-pole, 18 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 2×1.5 mm ² with wire sleeves	
Degree of protection (IEC 60529/EN 60529)	IP20	
Operating temperature	-25...+60 °C	

