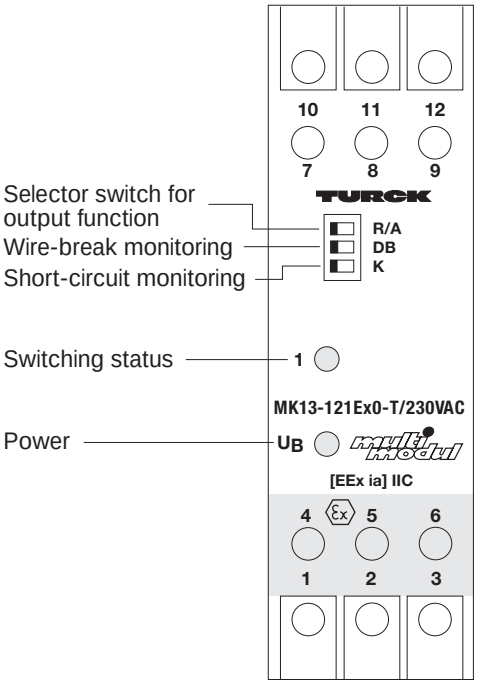


Isolating Switching Amplifier MK13-121Ex0-T 1 channel

- **Single channel switching amplifier with alarm output**
- **Intrinsically safe input circuit [EEx ia] IIC**
- **Galvanic isolation between input circuit, output circuit and supply voltage**
- **Input circuit monitoring for wire-break and short-circuit (can be disabled)**
- **1 switching and 1 alarm output**
- **2 isolated, short-circuit and reverse polarity protected transistor outputs**
- **Selectable NO/NC output function**

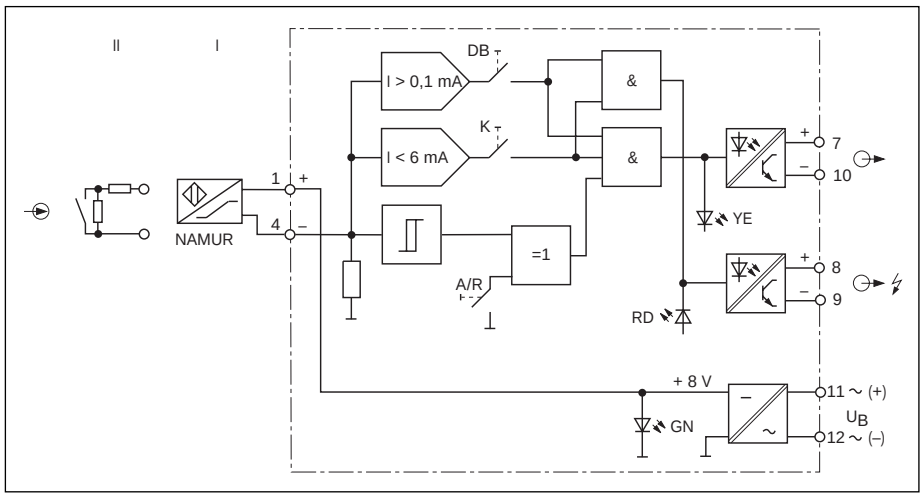
The MK13-121Ex0-T type switching amplifiers are single channel devices featuring an intrinsically safe input circuit. They can be connected to sensors according to EN 50227 (NAMUR), variable resistors or potential-free contacts.

Three front panel programming switches enable selection of the output function (normally open or normally closed mode) and separate activation and de-activation of wire-break (switch position DB) and short-circuit monitoring (switch position K). Switch positions A and R represent normally open mode (NO) and normally closed (NC) mode, respectively.

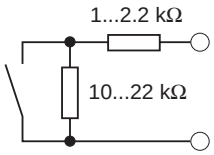
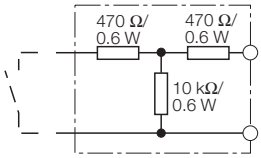
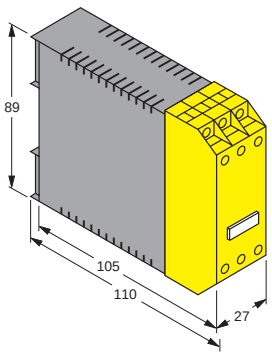
Switching and alarm outputs are equipped with an isolated, short-circuit and reverse polarity protected transistor output.

When using mechanical contacts as the input device, wire-break and short-circuit monitoring must be disabled or shunt resistors must be connected to the contacts (II). (See next page for contact configuration).

The green LED indicates that the device is powered. The dual colour LED indicates the switching status (yellow) as well as fault conditions (red). When the input circuit monitoring feature is activated, red illuminates to indicate a fault condition in the input circuit and the transistor and alarm output are disabled.



Isolating Switching Amplifiers

Type	MK13-121Ex0-T/230VAC	MK13-121Ex0-T/24VDC
Ident-No.	75 422 60	75 422 67
Supply Voltage U_B	195.5...253 VAC	10...30 VDC
Line frequency/ripple W_{PP}	48...62 Hz	≤ 10 %
Power/current consumption	≤ 30 mA_{rms}	≤ 1.1 W
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 50227 (NAMUR), intrinsically safe according to EN 50020	according to EN 50227 (NAMUR), intrinsically safe according to EN 50020
Operating characteristics		
– Voltage	8 V	8 V
– Current	7 mA	7 mA
Switching threshold	1.55 mA	1.55 mA
Hysteresis	typ. 0.2 mA	typ. 0.2 mA
Wire-break threshold	≤ 0.1 mA	≤ 0.1 mA
Short-circuit threshold	≥ 6 mA	≥ 6 mA
Contact Configuration Of mechanical switches with active input circuit monitoring function		 resistor module WM1, ident-no. 09 121 01
Output Circuits	2 pnp transistor outputs potential-free, short-circuit protected	2 pnp transistor outputs potential-free, short-circuit protected
Switching voltage	≤ 30 VDC	≤ 30 VDC
Switching current per output	≤ 50 mA	≤ 50 mA
Switching frequency	≤ 3 kHz	≤ 3 kHz
Voltage drop	≤ 2.5 V	≤ 2.5 V
Ex-Approval acc. to Certificate of Conformity	PTB 99 ATEX 2083	PTB 99 ATEX 2083
Maximum nominal values		
– No load voltage U_0	≤ 11.9 V	≤ 11.9 V
– Short-circuit current I_0	≤ 36 mA	≤ 36 mA
Maximum external inductances/capacitances		
– [EEx ia] IIB	87 mH/9.4 µF	87 mH/9.4 µF
– [EEx ia] IIC	23 mH/1.45 µF	23 mH/1.45 µF
LED Indications		
– Status indication/fault indication	yellow/red (2-colour LED)	yellow/red (2-colour LED)
– Power "ON"	green	green
Terminal 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	≤ 2 x 2.5 mm^2 or 2 x 1.5 mm^2 with wire sleeves	
Degree of protection (IEC 60529/EN 60529)	IP20	
Operating temperature	-25…+60 °C	

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