

Isolating Switching Amplifier MK13-12Ex0-DZ/230VAC 1-channel

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- **1-channel isolating switching amplifier**
- **Intrinsically safe input circuit EEx ia**
- **Area of application according to ATEX: II (1) G**
- **Galvanic isolation between input circuit, output circuit and supply voltage**
- **Input circuit monitoring for wire-break and short-circuit (can be disabled)**
- **2 potential-free electronic outputs in parallel for AC and DC voltages**
- **Switching capacity 250 VUC/ 130 mA_{rms}**
- **Selectable NO/NC output function**

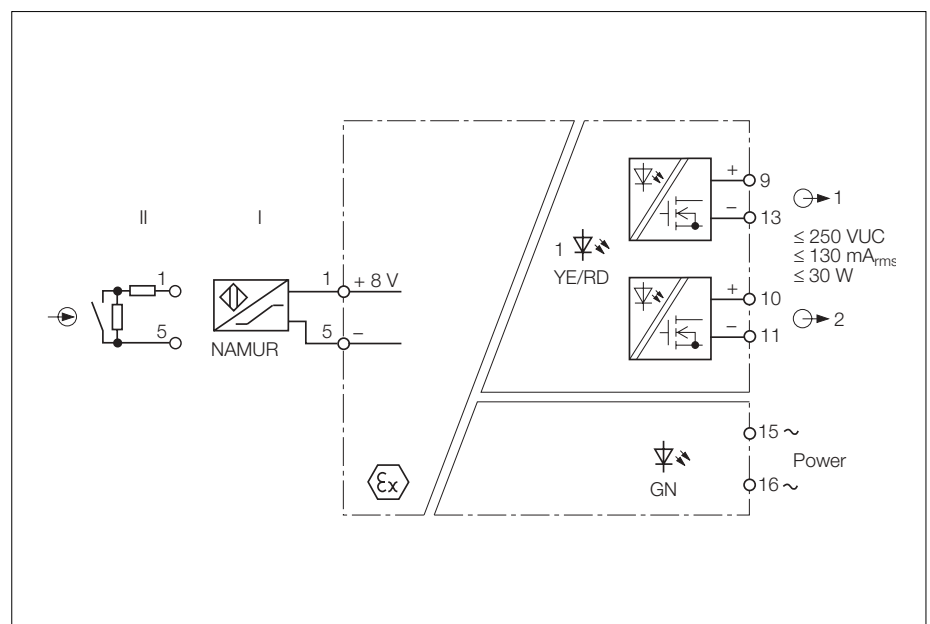
The isolating switching amplifiers MK13-12Ex0-DZ are single channel devices featuring an intrinsically safe input circuit. They can be connected to sensors according to EN 60947-5-6 (NAMUR), variable resistors or potential-free contacts.

The output circuit consists of two potential-free electronic outputs which operate in parallel and are suited for switching 250 VUC up to 130 mA_{rms}.

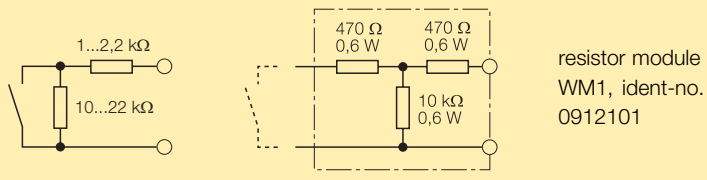
Three front panel programming switches enable selection of the output function (normally open or normally closed mode) and separate activation and de-activation of wire-break (switch position DB) and short-circuit monitoring (switch position K).

Switch positions A and R represent normally open mode (NO) and normally closed (NC) mode, respectively. 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 electronic outputs are de-energised.



Isolating Switching Amplifier MK13-12Ex0-DZ

Type	MK13-12Ex0-DZ/230VAC
Ident-no.	7542500
Supply voltage U_B	196...253 VAC
Line frequency/ripple W_{PP}	48...62 Hz
Power/current consumption	$\leq 30 \text{ mA}_{\text{rms}}$
Galvanic isolation	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
Operating characteristics	
– Voltage	8 V
– Current	8 mA
Switching threshold	1.55 mA
Hysteresis	typ. 0.2 mA
Wire-break threshold	$\leq 0.1 \text{ mA}$
Short-circuit threshold	$\geq 6.0 \text{ mA}$
Contact configuration	
Of mechanical switches with active input circuit monitoring function	
Output circuits	2 bidirectional MOSFET outputs, potential-free
Switching voltage	$\leq 250 \text{ VUC}$
Switching current per output	$\leq 130 \text{ mA}_{\text{rms}}$
Switching capacity per output	$\leq 30 \text{ W}$
Switching frequency	$\leq 1 \text{ kHz}$ for low currents $\leq 100 \text{ Hz}$ at 130 mA
Interior resistance $R_{DS \text{ on}}$	approx. 27 Ω
Ex-approval acc. to certificate of conformity	PTB 99 ATEX 2083
Maximum nominal values	
– No load voltage U_0	$\leq 11.9 \text{ V}$
– Short-circuit current I_0	$\leq 36 \text{ mA}$
Max. external inductances/capacitances L_0/C_0	
– [EEx ia] IIB	87 mH/9.4 μF
– [EEx ia] IIC	23 mH/1.45 μF
Marking of devices	II (1) G [EEx ia] IIC
LED indications	
– Power	green
– Switching status/fault indication	yellow/red (2-colour LED)
Housing	16-pole, 36 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	$\leq 2 \times 2.5 \text{ mm}^2$ or $2 \times 1.5 \text{ mm}^2$ with wire sleeves
Degree of protection (IEC 60529/EN 60529)	IP20
Operating temperature	-25...+60 °C

