

Isolating Switching Amplifier MK15-12Ex0-PN/24VDC 1-channel

1



- **1-channel isolating switching amplifier**
- **Intrinsically safe input circuits EEx ia/ib**
- **Area of application according to ATEX: II (1/2) GD**
- **Galvanic isolation between input circuit, output circuit and supply voltage**
- **Static and dynamic pulse processing**
- **Switching frequency up to 5 kHz**
- **Two transistor outputs, 1 npn and 1 pnp short-circuit protected**
- **Selectable NO/NC output function**

The MK15-12Ex0-PN/... is a single channel type special switching amplifier, particularly suited for transfer of high pulse frequencies (e. g. when used in scanning turbine rotation).

They can be connected to sensors according to EN 60947-5-6 (NAMUR), variable resistors or potential-free contacts.

The device is equipped with one short-circuit protected pnp transistor output and one short-circuit protected npn output transistor.

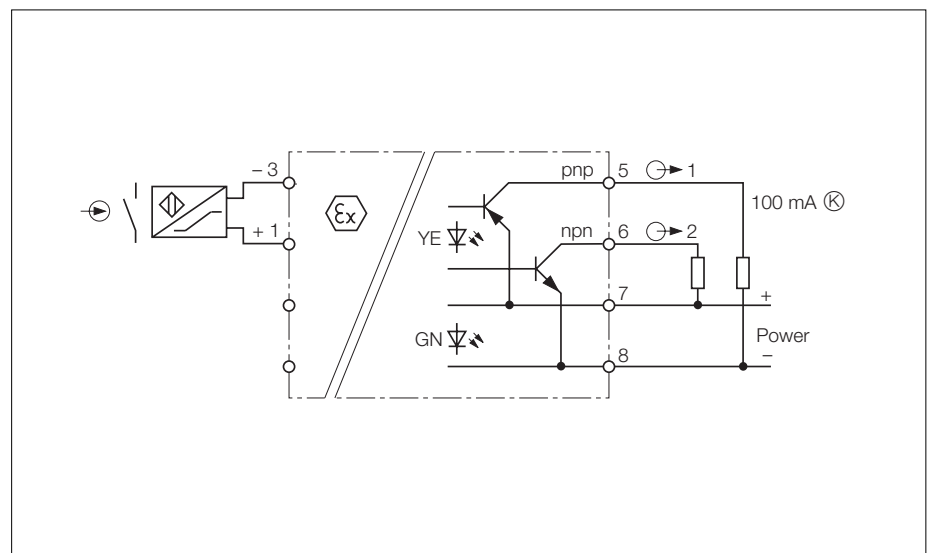
Three front panel programming switches set the channel function (normally open mode (NO) and normally closed (NC) mode), pulse expansion and the selection of pulse processing for the input signal (static or dynamic).

If pulse expansion is active, the output pulse is extended by 10 ms.

With static pulse processing, the NAMUR switching thresholds are scanned in a range of 0...5 kHz.

Dynamic pulse processing is to be used with sine and square wave input signals whose absolute value switching thresholds do not correspond to the NAMUR standard. A signal deviation (current change) of approx. 0.5 mA in an operating range of 1.5...3.5 mA switches the output.

The green LED on the front cover indicates that the devices are powered. The yellow LED indicates the switching status of the output (LED on – transistor conducting).



Isolating Switching Amplifier MK15-12Ex0-PN

Type	MK15-12Ex0-PN/24VDC
Ident-No.	7541316
Supply voltage U_B	10...30 VDC
Line frequency/ripple W_{PP}	$\leq 10\%$
Power/current consumption	approx. 20 mA
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	8.2 V
- Current	8.2 mA
Switching threshold (static)	1.55 mA
Hysteresis (static)	0.2 mA (typ.)
Output circuits	Two transistor outputs
Voltage drop output (5)	≤ 2.5 V
Voltage drop output (6)	≤ 2.5 V
Switching current output (5)	≤ 100 mA, short-circuit protected, pnp
Switching current output (6)	≤ 100 mA, short-circuit protected, npn
Switching frequency	≤ 5 kHz
Ex-approval acc. to certificate of conformity	TÜV 03 ATEX 2121
Maximum nominal values	
- No load voltage U_0	11.3 V
- Short-circuit current I_0	14 mA
- Power P_0	39 mW
- Internal resistance R_i	823 Ω
Characteristic	linear
Max. external inductances/capacitances L_0/C_0	
- [EEx ia] IIC	0.9 mH/710 nF / 1.9 mH/620 nF / 4.9 mH/530 nF
- [EEx ia] IIB	4.9 mH/2,7 μ F
Internal inductance L_i	120 μ H
Ambient temperature T_u	-25...+70 °C
Marking of device	II (1/2) GD [EEx ia/ib] IIC/IIB
LED indications	
- Switching status	yellow
- Power	green
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

