



Coupling Relays

Contact Amplifier

AD-KVEX 100 GVD

AD-KVEX 200 GVD

Description

The contact amplifier (switching amplifier) serves preferably the protection of weak sensor contacts or the amplification of binary sensor signals. The AD-KVEX 100/200 GVD provides a logical input signal amplified at a contact output. Typical input signals are reed contacts, signal sensor according to Namur Namur (DIN EN 60947-5-6) or resistance changes. At the output, heavy-duty and potential free contacts are provided. The logical switching direction as well as the line fault recognition is separately switchable for each conduit. The version AD-KVEX 100/200 GVD0 has wear-free semi-conductor outputs, which are also galvanically separated via an optic isolation. The device contains an electronic wide range power supply and can operate in a wide supply voltage range.

Application

Pulse recording of water meters or flow monitors for counting through-flow quantities. Amplification and contact protection of weak sensor signals (reed contacts, limit switches, etc.), switching signal transmission in control circuits, switching amplifier for inductive and capacitive proximity switches according to Namur (DIN EN 60947-5-6).



Specific characteristics

- Intrinsically safe input [Ex ia] IIC
- Up to two independent switching channels (AD-KVEX 200)
- Switching function can be reversed
- Line fault detection
- LEDs for signal and error display
- Wide range power supply
- Optional version with semiconductor output
- Optional available with Ex input terminal at the bottom (order option: S-488)

Business data

Order number

AD-KVEX 100 GVD	1 relay output
AD-KVEX 100 GVD-O	1 semiconductor output
AD-KVEX 200 GVD	2 relay outputs
AD-KVEX 200 GVD-O	2 semiconductor outputs

Options

Ex input terminals below	special order type S-488
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Technical specifications

Signal input

Min. pulse width	100 ms
Namur supply voltage	ca. 8,2 V DC +/-3%
Logic level, Low	< 1,6 mA
Logic level, High	> 1,9 mA
Wire breakage detection	< 0,2 mA
Short circuit detection	> 7,8 mA
Signal types	Initiator DIN EN 60947-5-6, contact, transistor

Contact output

Maximum switching load AC	250 V, 2 A
Maximum switching load DC	50 V, 2 A
Contact construction	potential-free changeover
Switching operations mechanical	1 x 10 ⁷
At 230V/2A AC, cos(phi)=1	6 x 10 ⁵
At 230V/2A AC, cos(phi)=0,4	2 x 10 ⁵
At 50V/2 A DC	2 x 10 ⁵

Semiconductor output

Max switching voltage	30 V DC
Max. switching current	50 mA DC

Supply

Voltage range AC	50 ... 250 V AC, 50/60 Hz
Nominal voltage AC	230 V AC
Power consumption AC	3,5 VA (2,3 VA ; KVEX 100 GVD)
Voltage range DC	20 ... 120 V DC
Nominal voltage DC	24 V DC
Power consumption DC	1,8 W (1W ; KVEX 100 GVD)

Transmission behaviour

Response time	~ 100 ms
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Housing

Dimensions (WxHxD)	23 x 110 x 134 mm
Type of protection	IP 20
Connection method	detachable terminal clamp
Terminals, wire cross section	2,5 mm ² flex wire / 4 mm ² one wire
Bolting torque terminals	0,5 Nm
Weight	~ 115 g
Manner of fastening	35 mm DIN rail 35mm (EN50022)

Environmental conditions

Ambient temperature	-20 ... +60 °C
Storage and transport	-20 ... +70 °C (no condensation)



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Technical specifications

Approval

ATEX	II(1) G [Ex ia Ga] IIC II(1) D [Ex ia Da] IIIC
EU-Type Examination Certificate	BVS 16 ATEX E 038 X

Safety Specifications per channel

Voltage U_0	9,56 V DC
Current I_0	10,62 mA DC
Power P_0	25,4 mW
Max. external capacitance C_0	
C	3,6 μ F
B C	26 μ F
A	210 μ F
Max. external inductance L_0	
C	315 mH
B C	1261 mH
A	2522 mH
Max. external inductance / resistance ratio L_0/R_0	
C	1,41 mH/Ohm
B C	5,65 mH/Ohm
A	11,3 mH/Ohm
Internal capacitance C_i	N/A
Internal inductance L_i	N/A

Safety Specifications 2 channels parallel

Voltage U_0	9,56 V DC
Current I_0	21,24 mA DC
Power P_0	50,8 mW
Max. external capacitance C_0	
C	3,6 μ F
B C	26 μ F
A	210 μ F
Max. external inductance L_0	
C	78,8 mH
B C	315,25 mH
A	630,5 mH
Max. external inductance / resistance ratio L_0/R_0	
C	0,706 mH/Ohm
B C	2,826 mH/Ohm
A	5,565 mH/Ohm
Internal capacitance C_i	N/A
Internal inductance L_i	N/A

EMC

Product family standard	EN 61326-1 ¹⁾
Emitted interference	EN 55011, CISPR11 Cl. B, Gr. 1

Electrical safety requirements

Product family standard	EN 61010-1
Overvoltage category	II
Pollution degree	2

Galvanic isolation, test voltages

Input / output	3 kV, 50 Hz (1 min.)
Signal / supply unit	3 kV, 50 Hz (1 min.)

Protection circuits

Input	electrical surge protection
Power supply	protection against over voltage, over temperature and reverse polarity

¹⁾ During checking, slight signal deviations are possible.

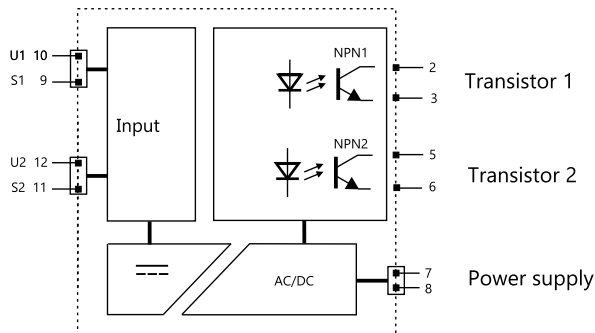
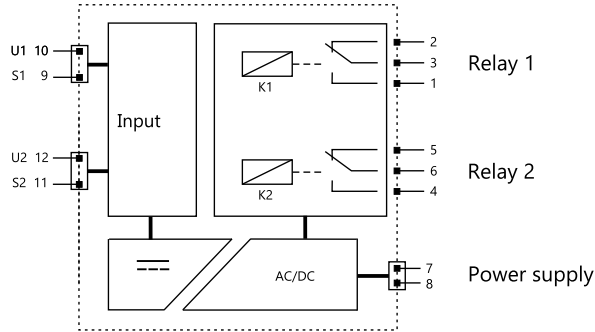


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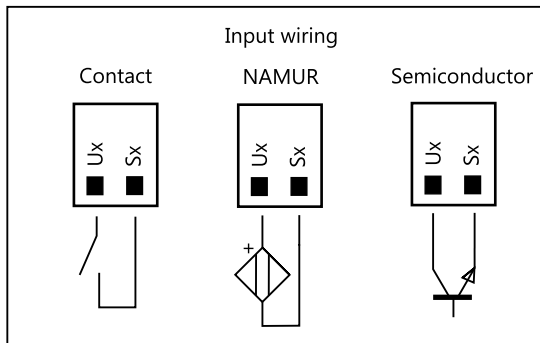
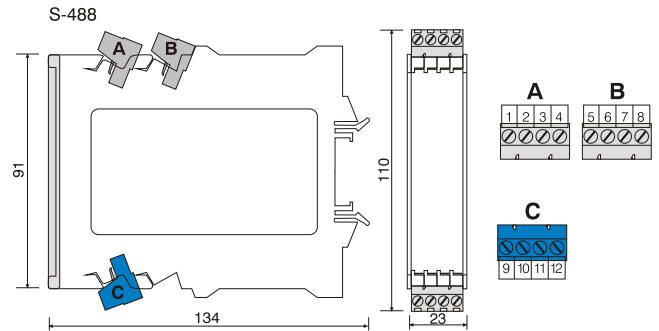
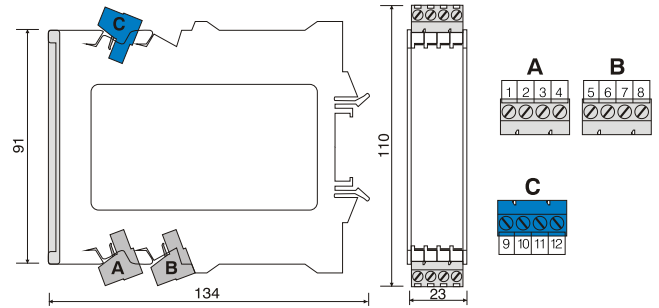
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Block and wiring diagram



Dimensions



Function of Frontswitch			
Switch	Function	OFF	ON
1	Invers 1	off	on
2	Error detector 1	on	off
3	Invers 2	off	on
4	Error detector 2	on	off