

TSV3-Ex-R TSV5-Ex-R

TSV3-Ex-R Isolating TSV5-Ex-R Switching Amplifier

Features:

Intrinsically safe input circuit(s)
[EEx ia] IIC

2-channel isolating switching amplifier with removable terminal blocks

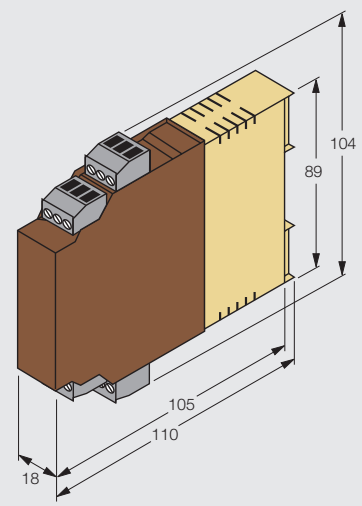
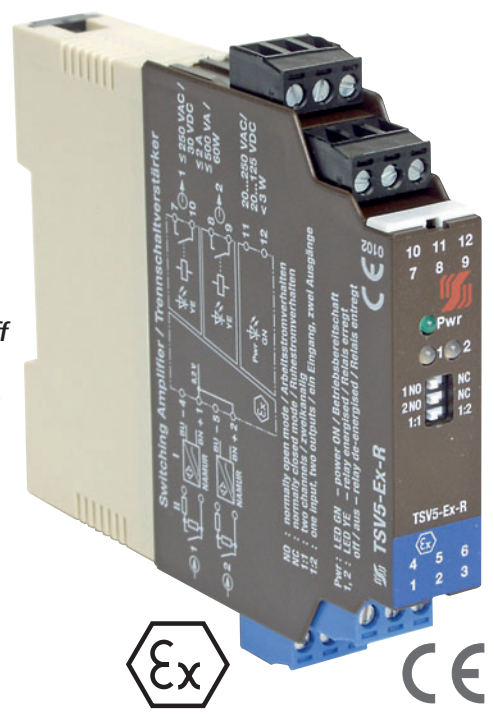
galvanical isolation input circuits from output circuits and supply voltage

input circuit monitoring for wire break and short circuit (switch on/off function); TSV3-Ex-R series

2 relay outputs with one NO contact each

programmable outputs NO/NC function

auxiliary power 20...250 V AC
20...125 V DC



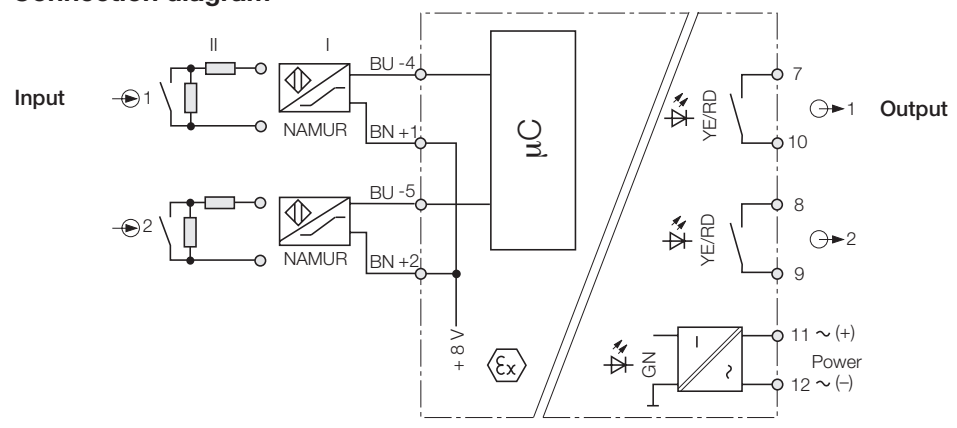
Application:

The Isolating Switching Amplifier type TSV3-Ex-R and TSV5-Ex-R are designed with 2 channels and intrinsically safe input circuits. They can be connected with sensors according to EN 50227 (NAMUR), with variable resistors or potential-free sensors. The function (normally open contact = NO / normally closed contact = NC) as well as wire break and short circuit monitoring can be switched on/off separately (TSV3-Ex-R series). If using mechanical contacts, the

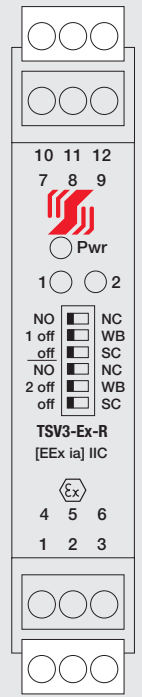
wire break and short circuit monitoring must be switched off or contact has to be loaded with resistors (II). The contact loading is described on the reverse side.

The green LED indicates that the device is powered. In case of error of the input circuit – when input circuit monitoring is active – the 2 two coloured LEDs change to red and then the respective output relay is de-energized.

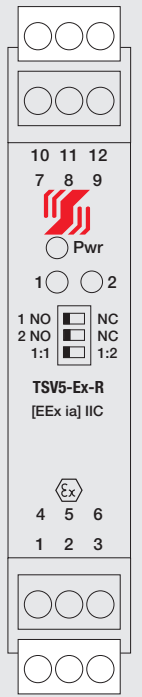
Connection diagram




TSV3-Ex-R



TSV5-Ex-R

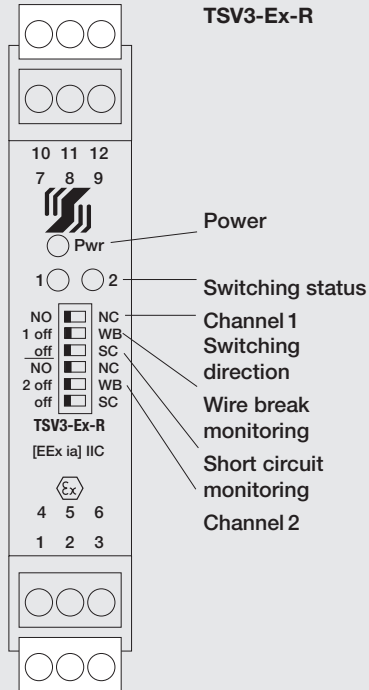




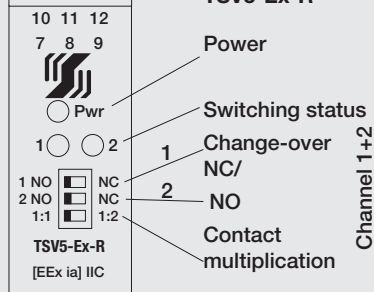
TSV3-Ex-R

TSV5-Ex-R

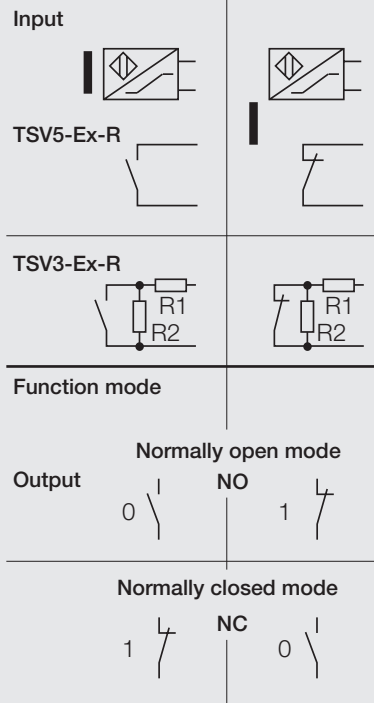
TSV3-Ex-R



TSV5-Ex-R



Function table



Type Ident. No.	TSV3-Ex-R	TSV5-Ex-R
Features	input circuit monitoring for wire break and/or short circuit, separately adjustable for each channel	without input circuit monitoring, adjustable output signal multiplication
Supply voltage U_B	20...250 V AC 20...125 V DC	
Power consumption	< 3 W	
Galvanic isolation	input circuits to output circuits and supply voltage for 250 V _{eff} test voltage 2,5 kV _{eff}	
Input circuits	according to EN 50227 (NAMUR) intrinsically safe according to EN 50020	
Operating conditions	– voltage 8 V – current 8 mA	
Switching threshold	1,55 mA	
Hysteresis	typ. 0,2 mA	
Function TSV3-Ex-R		
Wire break threshold (WB)	≤ 0,1 mA	
Short circuit threshold (SC)	≥ 6,0 mA	
Contact configuration	Resistance coupling element	
of mechanical switches with active input circuit monitoring function		
TSV3-Ex-R		
Wire break/end monitoring		
Output circuits	2 relay outputs (NO contact)	
Switching voltage	≤ 250 V AC / 120 V DC	
Switching current per output	≤ 2 A	
Switching capacity per output	≤ 500 VA / 60 W	
Switching frequency	≤ 10 Hz	
Contact material	silver alloy + 3 μm Au	
Ex-Approval accord. to Certificate of Conformity	TÜV 07 ATEX 553613	
Maximum values	– no-load voltage U_0 ≤ 14 V – short circuit current I_k ≤ 22 mA	
External inductances/capacitances	– [Ex ia] IIC C_0 3,6 μF, L_0 300 mH - 70 mH – [Ex ib] IIC	
LED-display	2 x yellow / red green	
– status indication/error message		
– power "ON"		
Terminal housing	12-pole, 18 mm wide, Polycarbonate/ABS flammability class V-0 accord. UL 94	
Mounting	snap-on clamps for top hat rail (DIN 50022) or screw clamps for mounting plate	
Connection	removable terminal blocks, inverse-polarity protected, screw connection	
Connection profile	≤ 1 x 2,5 mm ² or 2 x 1,5 mm ² with wire sleeves	
Type of protection (IEC 60529/EN 60529)	IP 20	
Operating temperature	-25...+60 °C	