



Function

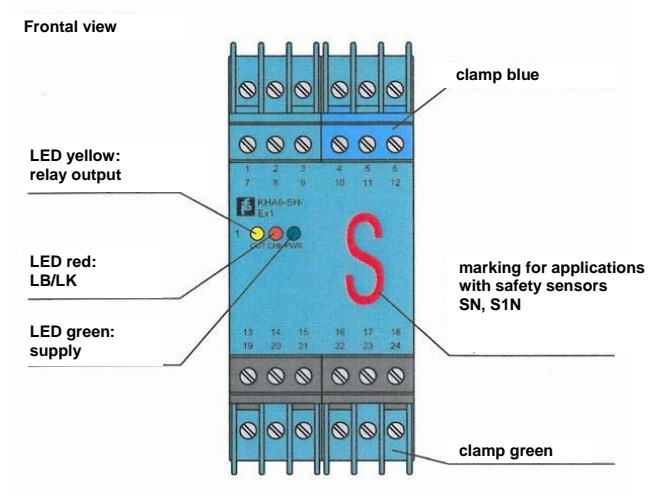
This switch amplifier is suitable for intrinsically safe applications. The instrument transfers binary signals of SN/S1N-proximity sensor from the potentially explosive area in the secure area. To grant a secure function, the instrument has an additional protective circuit.

The proximity sensor or switch controls a safety output with three closing contacts (one in series for both output relays for the safety function), a standard output with a closing contact and an error indication output with a closing contact. Lead interruptions (LB) and short-circuits on line (LK) of the inputs are being observed constantly.

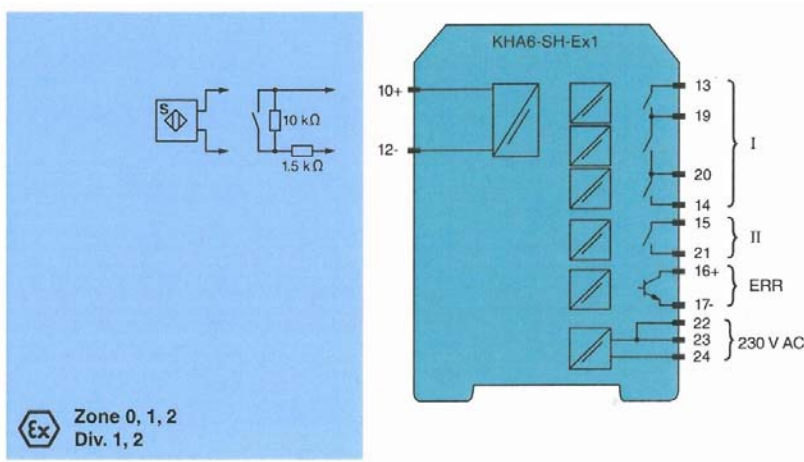
In case of errors the error output is being activated, while output I and II fall.

For safety applications the clamps 13 and 14 (output 1) have to be used.

Construction



Connection





General data	
Signal model	binary input
Supply	
Connection	clamps 22, 23, 24
Rated voltage	85...253 V AC, 45...65 Hz
Rated current	30 mA ± 5 mA
Power loss	2.2 W
Power consumption	≤ 2.3 W
Input	
Connection	clamps 10+, 12-
No-load voltage/short-circuit current	approx. 8.4 V DC / approx. 11.7 mA
Output resistance	≤ 50 Ω, in the Ex-area cable capacitances and –inductance have to be regarded
Switch point	
Relay fallen off	I < 2.1 mA und I > 5.9 mA
Relay energised	2.8 mA < I < 5.3 mA
Response delay	≤ 1 ms
Output	
Connection	output I: clamps 13, 14; output II: clamps 15, 21, output III: clamps 16+, 17-
Output I	signal, safety-oriented; relay
Output I, II	
Contact load	253 V AC/1 A/cos φ ≥ 0,7; 24 V AC/1 A ohmic load
Mechanical endurance	50 x 10 ⁶ switching operations
Output II	signal, not safety-oriented, relay
Output III	error indication, not safety oriented; electronic output, passive
Rated voltage	10...30 V DC
Signal level	1-signal: (L+) -2.5 V (7 mA, short-circuit proof) / 0-signal: blocked output (residual current ≤ 10 µA)
Transfer features	
Switching frequency	5 Hz
Standard conformity	
Electromagnetic compatibility	
Standard 2004/108/EG	EN 61326-1:2006
Low voltage	
Standard 2006/98/EG	EN 50178:1997
Conformity	
Electromagnetic compatibility	EN 50081-2, EN 50082-2, NE 21
Protection type	IEC 60529
Ambient conditions	
Ambient temperature	-20...60 °C (253...333 K)
Mechanical data	
Protection type	IP20
Weight	Approx. 280 g
Dimensions	40 x 93 x 115 mm, case model E
Data for the application in connection with Ex-areas	
CE-Type examination certificate	PTB 00 ATEX 2043, further certificates see www.pepperl-fuchs.com
Group, category, type of protection	II (1)GD [EEx ia] IIC [circuitrie(s) in zone 0/1/2]
Input	EEx ia
Voltage U ₀	9.56 V
Current I ₀	16.8 mA
Output power P ₀	41 mW (characteristic curve linear)
Supply	
Safety maximum voltage U _m	253 V AC/DC (Caution! The rated voltage could be lower.)
Type of protection [EEx ia]	
Output	
Contact load	253 V AC/1 A/cos φ ≥ 0.7; 24 V AC/1 A ohmic load
Safety maximum voltage U _m	output I and II: 253 V AC/DC (Caution! U _m is no rated voltage.)



Galvanic separation	
Input/output	secure galvanic separation according to EN 50020, peak value of the voltage 375 V
Input/supply	secure galvanic separation according to EN 50020, peak value of the voltage 375 V
Standard conformity	
Standard 94/9/EG	EN 50014, EN 50020
General information	
Additional information	Please regard, as appropriate, CE-type examination certificates, conformity statements, conformity declarations and operating instructions. These information can be found on www.pepperl-fuchs.com



Function

Other than for a NAMUR-proximity sensor of the series SN/S1N, for a mechanical contact a 10 k Ω -resistance has to be installed via the contact, additional a 1.5 k Ω -resistance in series.

The input (clamps 10, 12) may generally only be operated with potential-free (passive) transmitters.

One-channel safety-oriented disconnections have to be carried out via the clamps 13, 14. The centre tap (clamps 19, 20) can additionally be used for a safety-oriented, redundant disconnection.

If the instrument is being applied for safety applications, the specifications of the test-documents have to be regarded. The output III error indication supplies a 1-signal, if the control circuit is being interrupted (LB) or short-circuited (LK).

The instrument (case model E) contains integrated clamps.



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