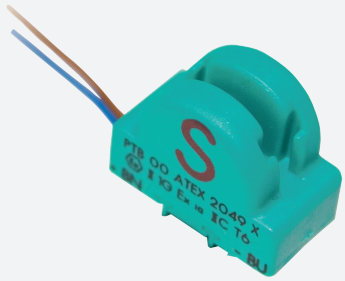
Inductive slot sensor

SJ2-SN

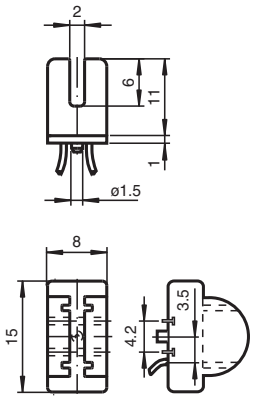


- 2 mm slot width
- Usable up to SIL 3 acc. to IEC 61508
- Ferrous targets

Function

The inductive slot sensors are suitable for use in particularly tight installation spaces, e.g. for limit detection in pointer instruments. In addition to the reference target, ferromagnetic metals can also be used as actuator elements. With a variety of approvals for use in hazardous areas, the sensors are equipped for global use.
In combination with a safety switch amplifier from Pepperl+Fuchs, e.g. KFD2-SH-EX1, use in safety-related applications up to SIL 3 is possible. The sensor can also be used in applications up to SIL 2 with safety-related NAMUR switch amplifiers.

Dimensions



Technical Data

General specifications		
Switching function		Normally closed (NC)
Output type		NAMUR with safety function
Slot width		2 mm
Depth of immersion (lateral)		5 ... 7 typ. 6 mm
Reference target		5 x 8 x 0.5 mm³, Al
Output type		2-wire
Nominal ratings		
Nominal voltage	U_o	8.2 V (R_i approx. 1 kΩ)
Switching frequency	f	0 ... 5000 Hz
Hysteresis	H	with NAMUR switch amplifier: 0.02 mm (e. g. Pepperl+Fuchs KCD2-SR-Ex1.LB) with safety switch amplifier 0.01 mm (e. g. Pepperl+Fuchs KFD2-SH-Ex1)

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Technical Data

Suitable for 2:1 technology		yes , with reverse polarity protection diode
Rate of current rise		-11 mA / mm
Current consumption		
Measuring plate not detected		≥ 3 mA
Measuring plate detected		0.2 ... 1 mA
Functional safety related parameters		
Safety Integrity Level (SIL)		SIL 3
$MTTF_d$		11800 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Compliance with standards and directives		
Standard conformity		
NAMUR		EN 60947-5-6:2000 IEC 60947-5-6:1999
Standards		EN 60947-5-2:2007 EN 60947-5-2/A1:2012 IEC 60947-5-2:2007 IEC 60947-5-2 AMD 1:2012
Approvals and certificates		
IECEx approval		
Equipment protection level Ga		IECEx PTB 11.0092X
Equipment protection level Gb		IECEx PTB 11.0092X
Equipment protection level Da		IECEx PTB 11.0092X
Equipment protection level Mb		IECEx PTB 11.0092X
ATEX approval		
Equipment protection level Ga		PTB 00 ATEX 2049 X
Equipment protection level Gb		PTB 00 ATEX 2049 X
Equipment protection level Da		PTB 00 ATEX 2049 X
UL approval		cULus Listed, General Purpose
Ordinary Location		E87056
Hazardous Location		E501628
Control drawing		116-0454
CCC approval		
Hazardous Location		2020322315002308
NEPSI approval		
NEPSI certificate		GYJ16.1392X
Ambient conditions		
Ambient temperature		-40 ... 100 °C (-40 ... 212 °F)
Mechanical specifications		
Connection type		flexible leads LIFYW
Housing material		PBT
Degree of protection		IP67
Cable		
Cable diameter		0.75 mm ± 0.15 mm
Bending radius		> 10 x cable diameter
Material		PVC
Core cross section		0.06 mm^2
Length	L	500 mm
Mass		2.5 g
Note		adjustable stop
General information		
Use in the hazardous area		see instruction manuals

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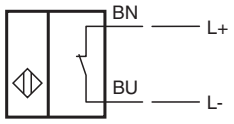
Connection



Accessories

	**F-KD-Ex2**	Terminal module for NAMUR sensors

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Application

Danger!
In security applications, the sensor must be operated on a qualified safety switch amplifier from Pepperl+Fuchs (e.g., KFD2-SH-Ex1). Observe the "exida Functional Safety Assessment" document, which belongs to this sensor and is available as part of the product documentation from www.pepperl-fuchs.com.

Attention!
NAMUR-compliant switch amplifiers can, due to a low current consumption at the recorded measuring plate (0.2 mA ... 1 mA), incorrectly report cable breaks (required in accordance with EN 60947-5-6:2000: 0.4 mA ... 1 mA).

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