Model Number

NRN10-12GS40-E2-IO-V1

Features

- **10 mm non-flush**
- **Reduction factor = 1**
- **Magnetic field resistant**
- **IO-link interface for service and process data**
- **Switch point mode or window mode can be set**
- **Switching function, stability alarm and pulse extension can be set**

Description

Reduction factor 1 sensors reliably detect different metals with the same switch state. The integrated IO-Link interface enables clear identification of the sensor and diagnosis of the sensor condition. When using the sensor, parameters and operating modes can be optimally configured specifically for the intended application. In addition to setting the switching function and a pulse extension, the user can select either switch point mode or window mode in combination with a stability alarm. In switch point mode, the stability alarm signals the detection of an object in the area between the assured operating distance and operating distance s_n. In window mode, it signals the detection of an object below the window between operating distance s_n and the nearest operating distance. A stability alarm is displayed to the user via a flashing LED and process data.

Accessories

IO-Link-Master02-USB
IO-Link master, supply via USB port or separate power supply, LED indicators, M12 plug for sensor connection

BF 12
Mounting flange, 12 mm

EXG-12
Quick mounting bracket with dead stop

V1-G
Female connector, M12, 4-pin, field attachable

V1-W
Female connector, M12, 4-pin, field attachable

V1-G-2M-PVC
Female cordset, M12, 4-pin, PVC cable

V1-W-2M-PVC
Female cordset, M12, 4-pin, PVC cable

Technical Data

General specifications		
Switching function		Normally open/closed (NO/NC) programmable
Output type		PNP
Rated operating distance	s_n	10 mm (factory setting)
Near operating distance		8 mm (can be activated by software)
Installation		non-flush
Output polarity		DC
Assured operating distance	s_a	0 ... 8.1 mm
Reduction factor r_{Al}		1
Reduction factor r_{Cu}		1
Reduction factor r_{304}		1
Reduction factor r_{St37}		1
Output type		3-wire
Nominal ratings		
Operating voltage	U_B	10 ... 30 V DC
Switching frequency	f	0 ... 1300 Hz (switch point mode) 0 ... 80 Hz (window mode, switch point mode with stability alarm)
Hysteresis	H	typ. 3 %
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing
Voltage drop	U_d	≤ 0.5 V
Operating current	I_L	0 ... 200 mA
Off-state current	I_r	0 ... 0.5 mA typ. 60 µA at 25 °C
No-load supply current	I_0	≤ 15 mA
Time delay before availability	t_v	≤ 150 ms
Constant magnetic field	B	200 mT
Alternating magnetic field	B	200 mT
Status indicator		Multihole-LED, yellow
Functional safety related parameters		
$MTTF_d$		362 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Interface		
Interface type		IO-Link (via C/Q = pin 4)
Transfer rate		COM 2 (38.4 kBaud)
IO-Link Revision		1.1
Min. cycle time		2.3 ms
Process data witdh		Process data input (control system side): 2 Bit Process data output (control system side): none
SIO mode support		yes
Device ID		0x201104 (2101508)
Compatible master port type		A
Ambient conditions		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications		
Connection type		Connector plug M12 x 1 , 4-pin
Housing material		Stainless steel 1.4305 / AISI 303
Sensing face		PBT
Degree of protection		IP67
Mass		24 g
Factory settings		
Default setting		operating mode = switch point mode with stability alarm switching function = Normally open (NO) switching distance = 10 mm
General information		
Scope of delivery		2 self locking nuts in scope of delivery
Compliance with standards and directives		
Standard conformity		
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		
Protection class		II
Rated insulation voltage	U_i	60 V
Rated impulse withstand voltage	U_{imp}	800 V
UL approval		cULus Listed, General Purpose Class 2 power source
CCC approval		CCC approval / marking not required for products rated ≤36 V

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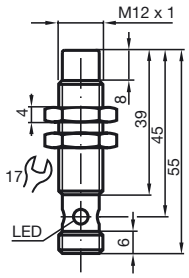
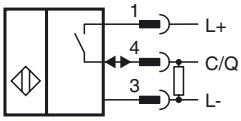
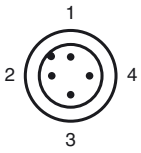
Dimensions



Electrical Connection



Pinout



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".
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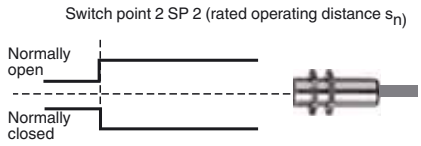
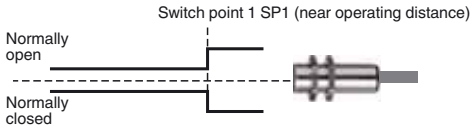
PEPPERL+FUCHS

Switching output modes

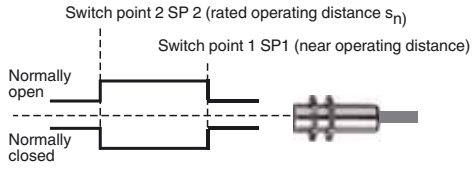
Switch point mode at rated operating distance s_n



Switch point mode with near operating distance

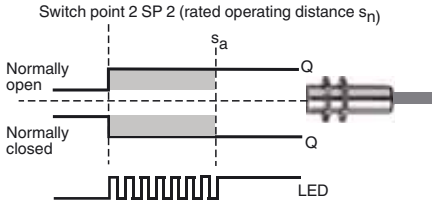


Window mode

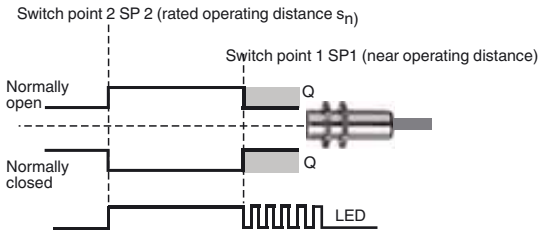


Stability alarm

Switch point mode with stability alarm (factory default)



Window mode with stability alarm



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