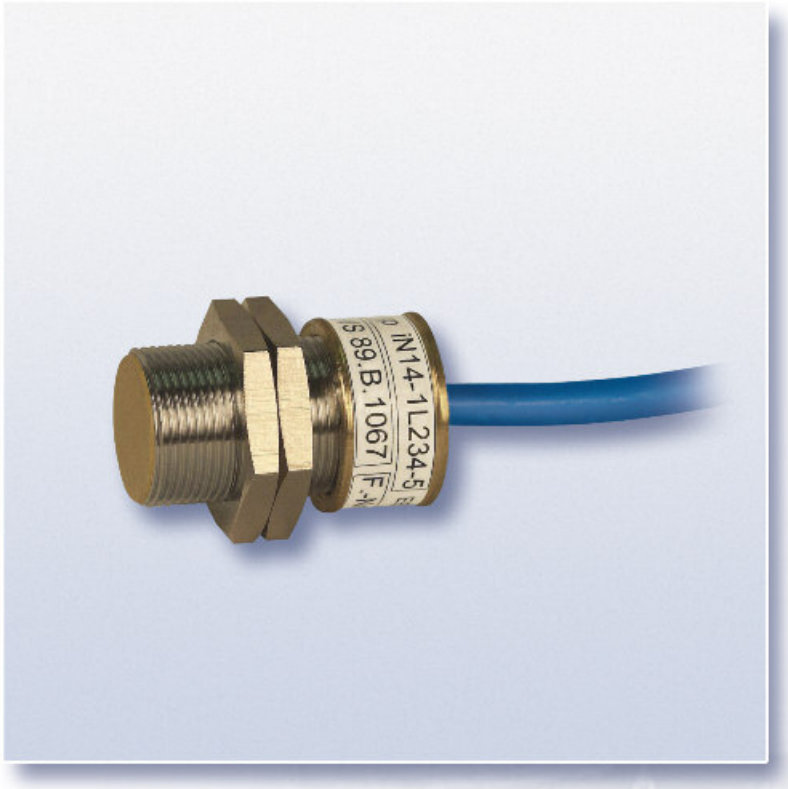
TIEFENBACH
Control Systems GmbH



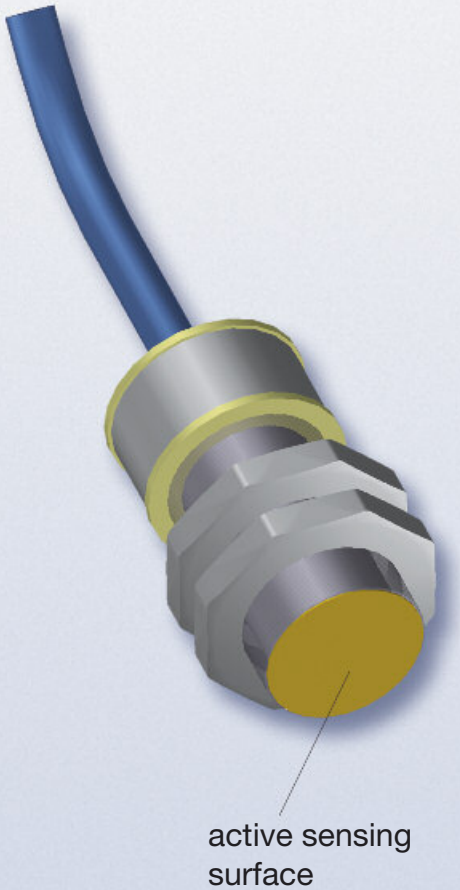
Proximity switch
iNA14

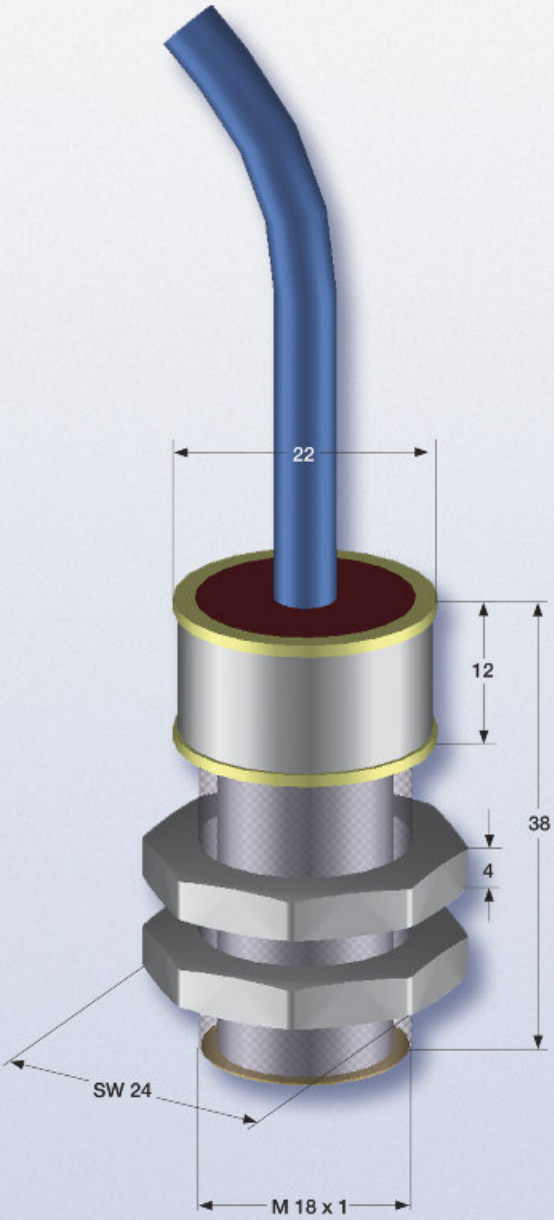
non-contact signal transmitter
acc. to EN 50227 (NAMUR)

- Nominal switching distance 5 mm
- Operation by means of a metal target
- Almost inertia-free due to an electronic oscillator circuit
- High safety against interfering pulses
- Wear-resistant and maintenance-free
- Type of protection: IP 65 according to EN 60529/IEC 529
- Ex-approval: I M2 EEx ia I intrinsically safe
  according to Directive 94/9/EC (ATEX)

Belt track monitoring with the proximity switch iNA14

iNA14





iNA14

FUNCTION AND DESIGN

NAMUR proximity switches are two-wire sensors which detect metallic materials without contacting them. Physically, metal approaching the active sensing surface attenuates the oscillator in the proximity switches, that is it decreases the oscillating amplitude. Attenuation is effected by metallic targets.

The nominal distance stated in the technical data refers to a target made of S235 (St 37) steel. When using other metallic materials reductions of the distance have to be taken into consideration.

Attenuating the oscillator results in a current change which is identical with the output switching command. For triggering the switching command it is of no importance whether non-metallic materials such as e.g. glass, plastic, or rubber are located between the metallic target and the active sensing surface. Another positive feature of the oscillator is its high degree of safety against interfering pulses.

Due to the response time of the proximity switch and particularly of the control device a minimum switching sector length is required which determines the duration of the attenuation. Deattenuation requires a pause sector of at least twice the length.

The proximity switches can be used for controlling safety-relevant control and monitoring circuits. The respective criteria are defined in EN 50227 (NAMUR). Irrespective of the status of the control they allow to permanently monitor lines and cables for broken conductors and short circuits.

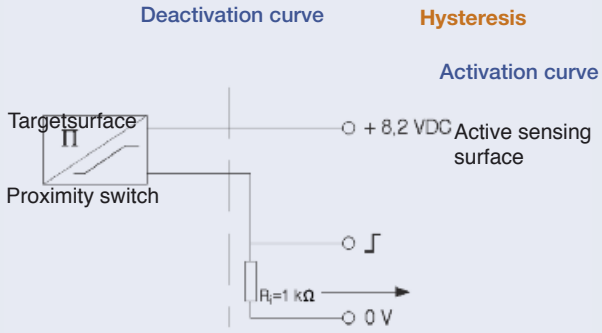
The electronic components are embedded in cast resin. The solid construction with the brass housing ensures adequate safety with respect to explosion protection and mechanical damage.

Application

- The proximity switch can be used in all applications where motions have to be detected and evaluated. It is thus used as control and monitoring organ in conveyor and crane installations, transfer lines, machine control systems, as well as for solving general automation problems.

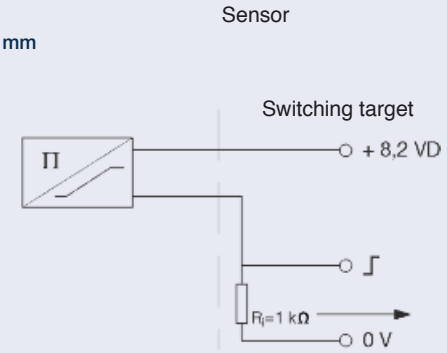
- It is possible to install the proximity switch flush in metal (shielded). This arrangement, however, already causes an attenuation of the oscillator. Therefore, the switching distance to the metal target has to be reduced.

Response curve:



Determination switching target length:

a = size
iNA14:
14 = size ➤ a = 14 mm



Attenuation (pulse) = a
Deattenuation (pause) = 2 a
Nominal switching distance Sn: see technical data

(This applies to a circumferential speed of the switching target of up to 7.5 m/s. If the circumferential speed is higher a larger switching target will be required. Please contact us if that situation occurs.)

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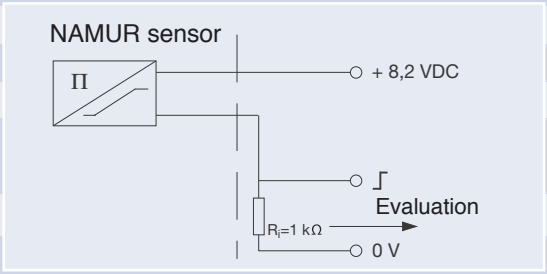
iNA14

TECHNICAL DATA

Nominal switching distance Sn	for S235 (St 37)	5 mm
	for nickel	4,25 mm
	for messing	2,75 mm
	for aluminium	2,50 mm
	for copper	2,25 mm
Size of the target	18 x 18 x 2 mm	
Switching frequency	1000 Hz	
Control signal	based on EN 50227 (NAMUR)	
Nominal voltage	up to 12 VDC	
Nominal operation (Uo = 8,2 VDC, Ri = 1 kΩ)	I attenuated ≤ 1,2 mA I deattenuated ≥ 2,1 mA	
Hysteresis	1-5 %	
Repeat accuracy	< 2 %	
Temperature range	-20°C to 85°C	
Installation	flush mounting in metal possible	
Type of protection	IP 65 acc. to EN 60529 / IEC 529	
Ex-approval	I M2 EEx ia I acc. to Directive 94/9/EG (ATEX)	
Certificate number	DMT 00 ATEX E 036 X	



TYPE CODE AND ORDERING INFORMATION

iNA**-1*-***-**	Nominal switching distance Sn in mm
	Type: 234 ➤ screw-in thread M18x1
	Type of connection: L ➤ cable K ➤ terminal
	1 ➤ electric design acc. to DIN 19234
	Size in mm
	Design acc. to ATEX
	N ➤ operated to metallic switching target
	Intrinsic design

TYPICAL EXAMPLE

iNA14-1L-234-5 L=2 m	■ Intrinsically safe proximity switch, operated to metallic switching target ■ Connection via cable	■ Screw-in thread M18 x1 ■ Nominal switching distance: 5 mm ■ With connection cable 2 m long
iNA14-1K-234-5	■ Intrinsically safe proximity switch, operated to metallic switching target ■ Connection via terminal	■ Screw-in thread M18 x1 ■ Nominal switching distance: 5 mm

Subject to technical alterations · Version 08/13

We give impulses >>>

Tiefenbach Control Systems GmbH · Rombacher Hütte 18a · 44795 Bochum
Telephone +49 (0) 234 - 777 66-0 · Fax +49 (0) 234 - 777 66-999
info@tiefenbach-controlsystems.com · www.tiefenbach-controlsystems.com