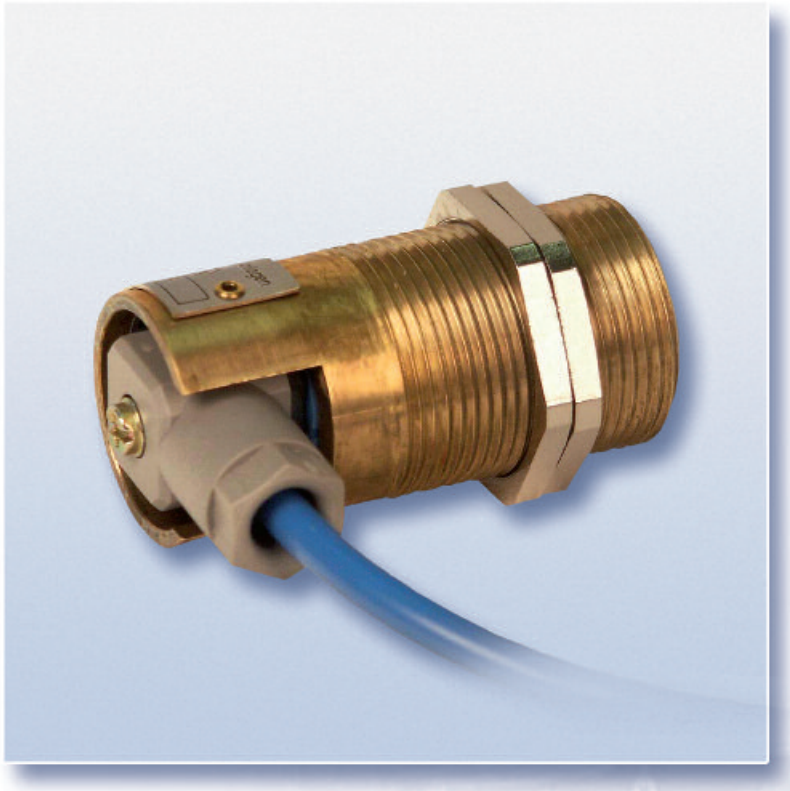
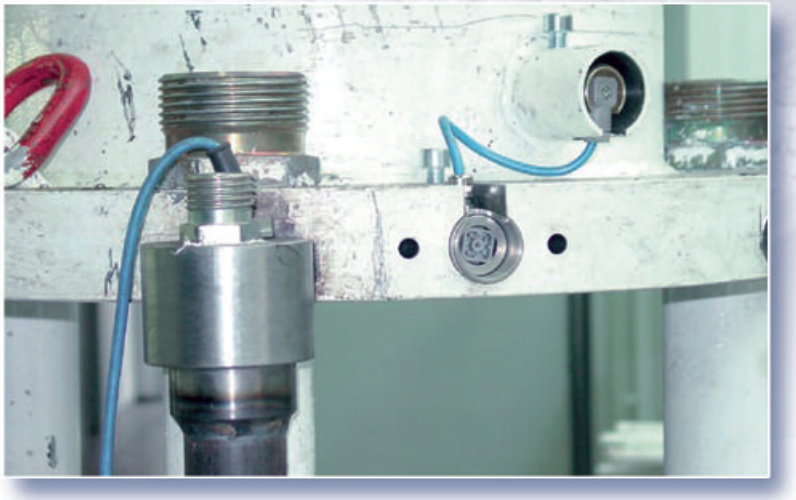
TIEFENBACH
Control Systems GmbH



Proximity switch
iN(F)A22

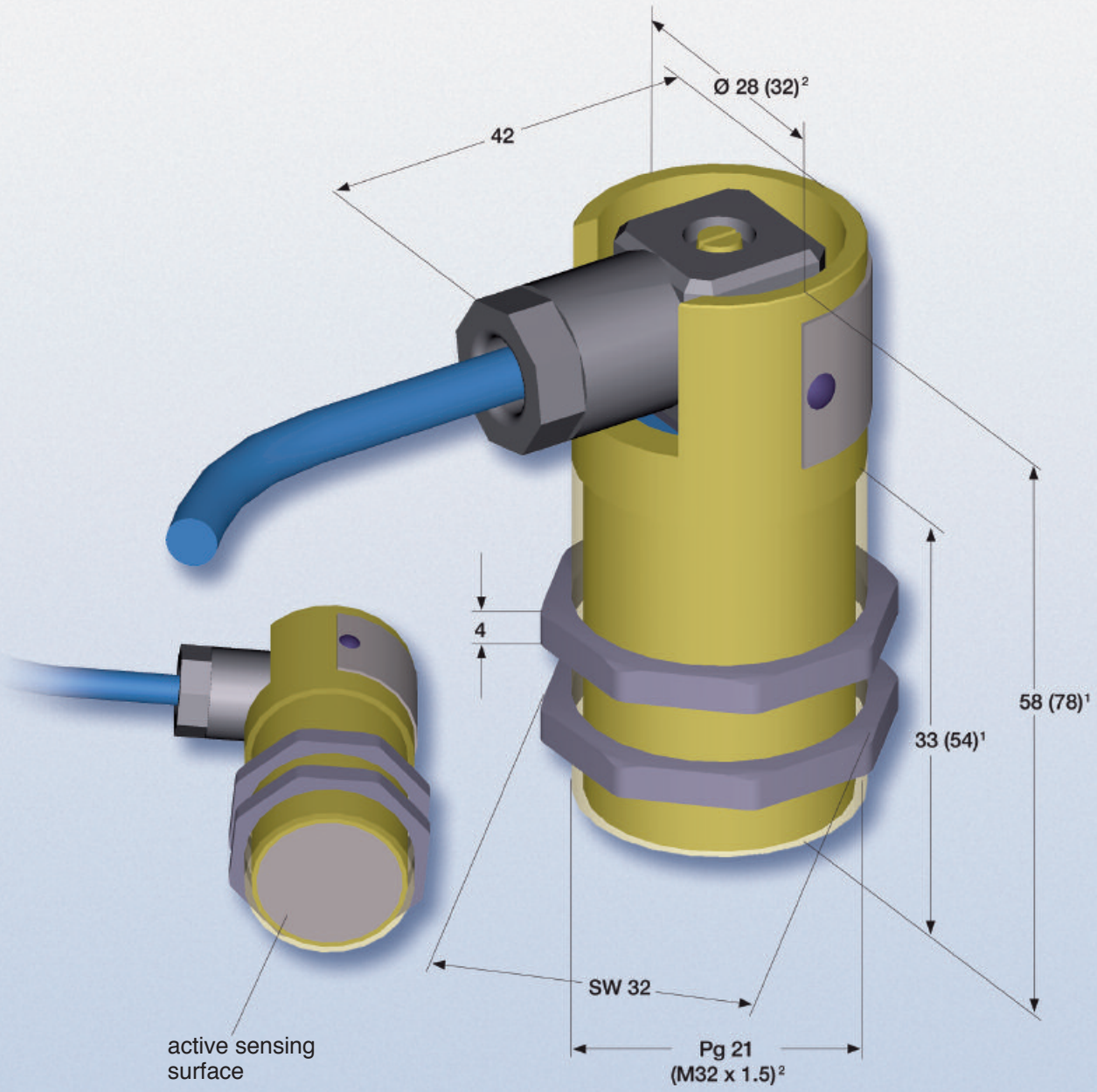
non-contact signal transmitter
acc. to EN 50227 (NAMUR)

- Nominal switching distance 10 mm
- Operation by means of a metal target (variant iNA22)
- Operation by means of a magnet (version iNFA22)
- Almost inertia-free due to an electronic oscillator circuit
- High safety against interfering pulses
- Wear-resistant and maintenance-free
- Type of protection: IP 54 according to EN 60529/IEC 529;
  EEx ia I intrinsically safe according to Directive 94/9/EC (ATEX)



Monitoring the closing action at the pipe piston conveyor

iN(F)A22



¹ „long“ variant
² Variant with M 32 x 1.5 thread

iN(F)A22

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 can be effected by...

- metallic targets on the inductive proximity switches iNA22
- magnets on the inductive proximity switches iNFA22

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

When the oscillator is attenuated a current change occurs 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 or the permanent magnet 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.

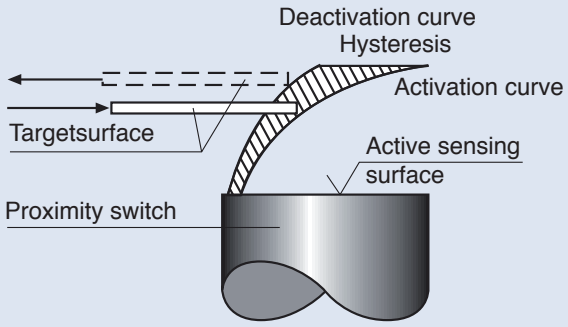
The electronic components are embedded in cast resin. The solid construction with the brass housing ensures adequate safety with respect to explosion protection and mechanical damage.

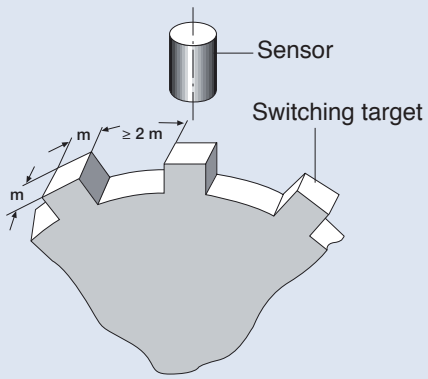
Application

➤ 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 or the magnet has to be reduced.

Response curve:





Attenuation (pulse) = m
Deattenuation (pause) = 2 m

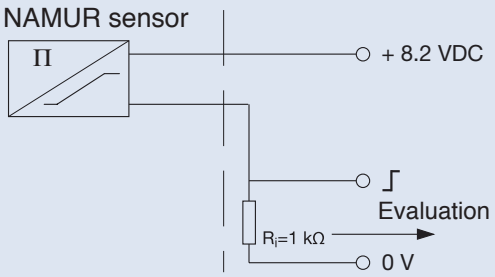
Type iN(F)A22 ➤ Size = m

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

iN(F)A22

TECHNICAL DATA

Nominal switching distance	for St 37 for nickel for brass for aluminium for copper	10 mm -15 % -45 % -50 % -55 %
Size of the target		(22 x 22 x 2) mm
Switching frequency		400 hz
Control signal		based on EN 50227 (NAMUR)
Nominal voltage		up to 12 VDC
Nominal operation (U_o = 8.2 VDC, R_i = 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 54 according to EN 60529 / IEC 529; 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

iNA22-1S-165-10 L = 5 m	Screw-in thread PG21; with plug-on connection cable 5 m long
iNA22-1S-165-10 long L = 5 m	same as before, but 75 mm long
iNA22-1S-631-10 L = 5 m	Screw-in thread M32 x 1.5; with plug-on connection cable 5 m long
iNA22-1S-631-10 long L = 5 m	same as before, but 75 mm long
iNFA22...	magnet-operated; variants as before
	Other variants upon request!

Subject to technical alterations

We give impulses >>>

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