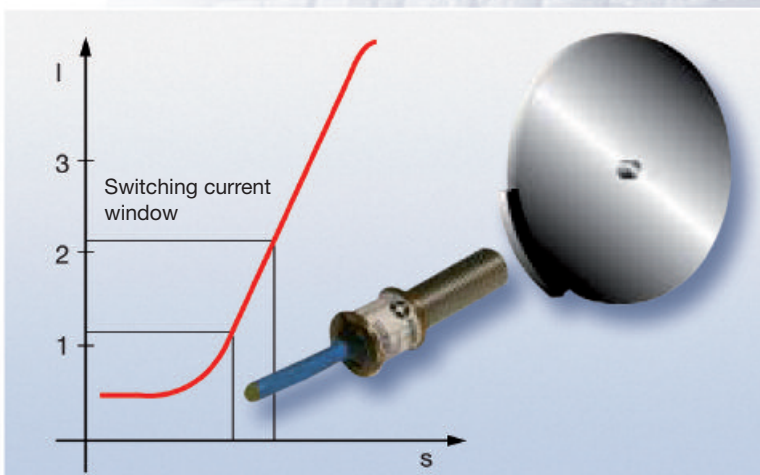


Proximity switch **iNA05-09**

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

- Small in size
- Nominal switching distance 1 mm (iNA05) and 2 mm (iNA09)
- 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;
EEx ia I intrinsically safe according to Directive 94/9/EC (ATEX)

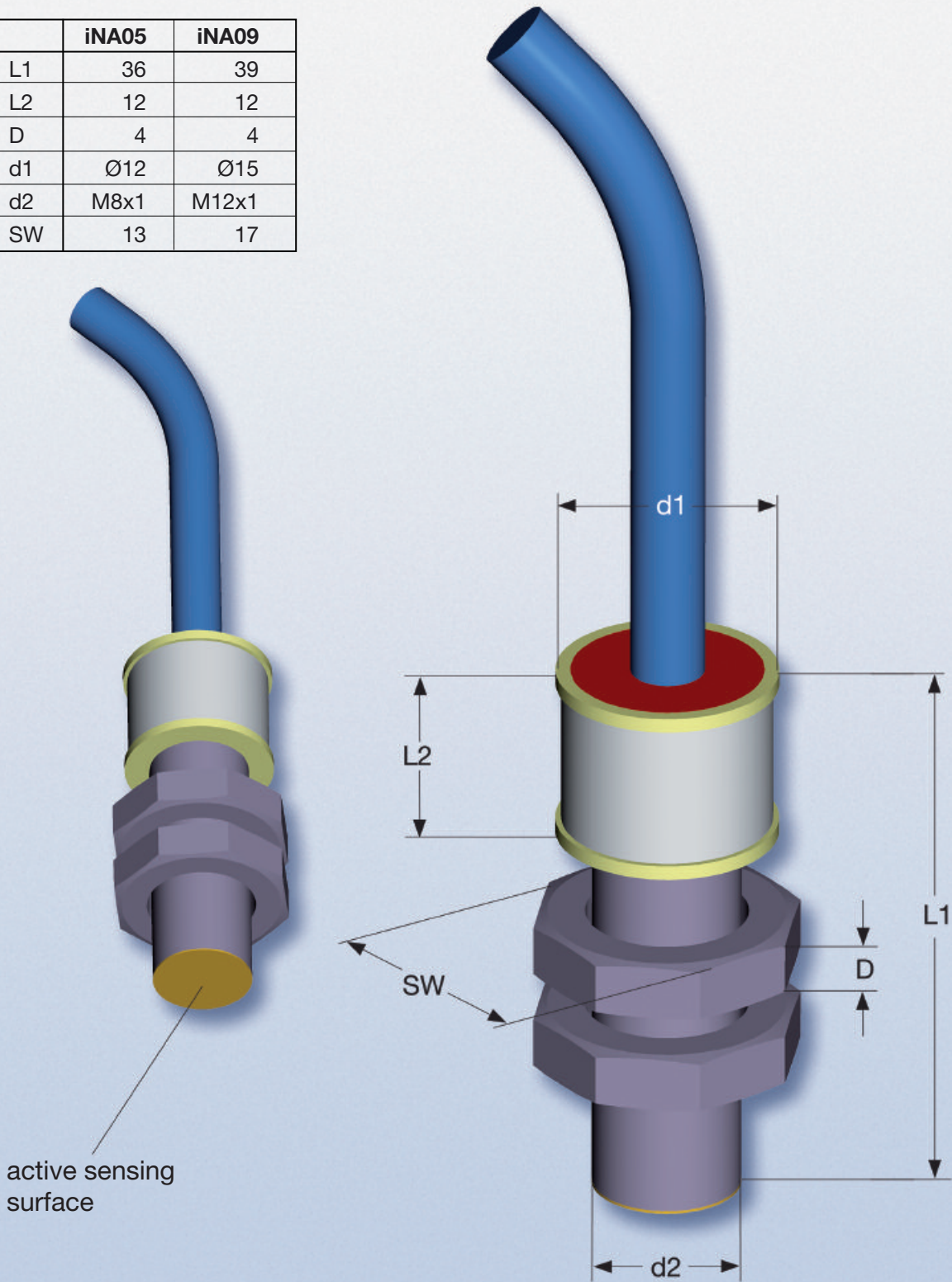


**Speed sensing with proximity
switches acc. to NAMUR**



iNA05-09

| | iNA05 | iNA09 |
|----|-------|-------|
| L1 | 36 | 39 |
| L2 | 12 | 12 |
| D | 4 | 4 |
| d1 | Ø12 | Ø15 |
| d2 | M8x1 | M12x1 |
| SW | 13 | 17 |





iNA05-09

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 means of metallic targets.

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 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.

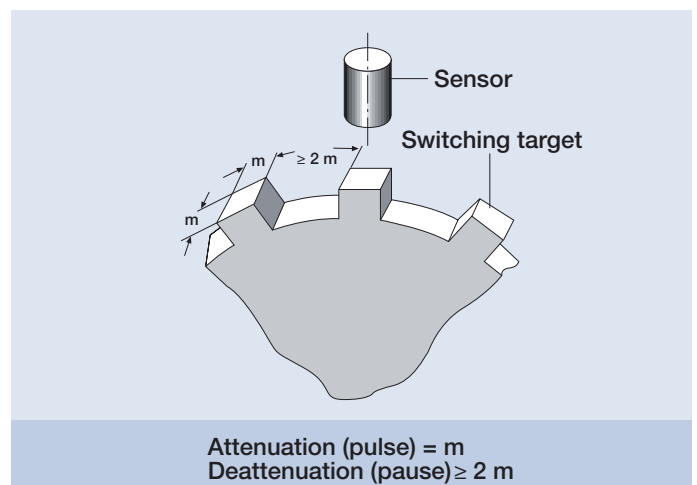
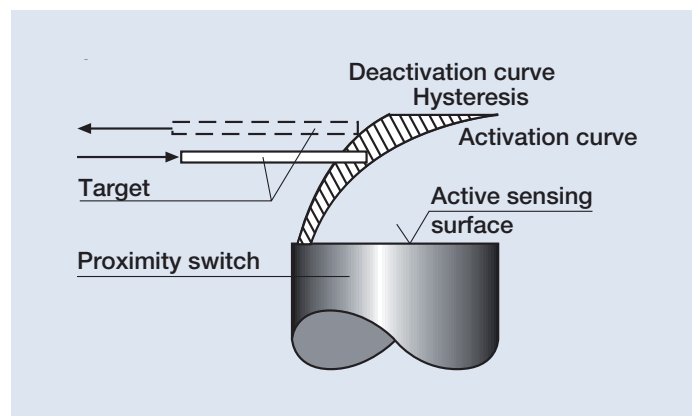
The proximity switches can be used for controlling safety-relevant control and monitoring circuits. The respective criteria are defined in EN 50227 (NAMUR). Irrespective of the status of the control they allow to permanently monitor lines and cables for broken conductors and short circuits.

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. Thanks to its small size it is particularly suitable for speed sensing in gearboxes and other mechanisms with a confined space.
- 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



Type iNA05-09 ➤ 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.)



iNA05-09

TECHNICAL DATA

| | | | |
|---|---|------------------|-------|
| Nominal switching distance | for St 37 | iNA05 | 1 mm |
| | for St 37 | iNA09 | 2 mm |
| | for nickel | | -15 % |
| | for brass | | -45 % |
| | for aluminium | | -50 % |
| | for copper | | -55 % |
| Size of the target | iNA05 | (8 x 8 x 2) mm | |
| | iNA09 | (12 x 12 x 2) mm | |
| Switching frequency | 5000 hz | | |
| Control signal | based on EN 50227 (NAMUR) | | |
| Nominal voltage | up to 12 VDC | | |
| Nominal operation ($U_0 = 8,2 \text{ VDC}$, $R_i = 1 \text{ k}\Omega$) | I attenuated $\leq 1.2 \text{ mA}$ I deattenuated $\geq 2.1 \text{ mA}$ | | |
| | | | |
| 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; I M2 EEx ia I acc. to Directive 94/9/EC (ATEX) | | |
| Certificate number | DMT 00 ATEX E 036 X | | |

TYPE CODE AND ORDERING INFORMATION

iNA05-1L-231-1 L = 2 m

Screw-in thread M 8 x 1; with connection cable 2 m long

iNA09-1L-232-2 L = 2 m with collar

Screw-in thread M 12 x 1; with connection cable 2 m long

iNA09-1L-232-2 L = 2 m w/o collar

Screw-in thread M 12 x 1; with connection cable 2 m long

Other variants upon request!

Subject to technical alterations

We give impulses >>>

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