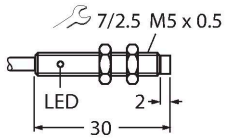
# NI3-EG05F-AP6X
# Inductive Sensor – Stainless Steel Front



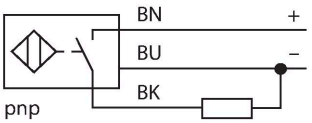

## Technical data

| Type | NI3-EG05F-AP6X |
|---|---|
| ID | 100001784 |
| **General data** | |
| Rated switching distance | 3 mm |
| Mounting conditions | Non-flush |
| Secured operating distance | ≤ (0.81 × Sn) mm |
| Correction factors | St37 = 1; Al = 1; Cu = 0.95; stainless steel 1 mm = 0.4; stainless steel 2 mm = 0.85; Ms = 1.4 |
| Repeat accuracy | ≤ 5 % of full scale |
| Temperature drift | ≤ ±10 % |
| | ≤ ± 15 %, ≥ +70 °C |
| Hysteresis | 3…15 % |
| **Electrical data** | |
| Operating voltage $U_B$ | 10…30 VDC |
| Ripple $U_{ss}$ | ≤ 20 % $U_{Bmax}$ |
| DC rated operating current $I_e$ | ≤ 200 mA |
| No-load current | ≤ 10 mA |
| Residual current | ≤ 0.1 mA |
| Isolation test voltage | 0.5 kV |
| Short-circuit protection | yes/Cyclic |
| Voltage drop at $I_e$ | ≤ 2 V |
| Wire break/reverse polarity protection | yes/Complete |
| Output function | 3-wire, NO contact, PNP |
| Switching frequency | 1.2 kHz |

## Features

- Threaded barrel, M5 × 0.5
- Stainless steel, 1.4305 (AIS303)
- DC 3-wire, 10…30 VDC
- NO contact, PNP output
- Cable connection

## Wiring diagram




## Functional principle

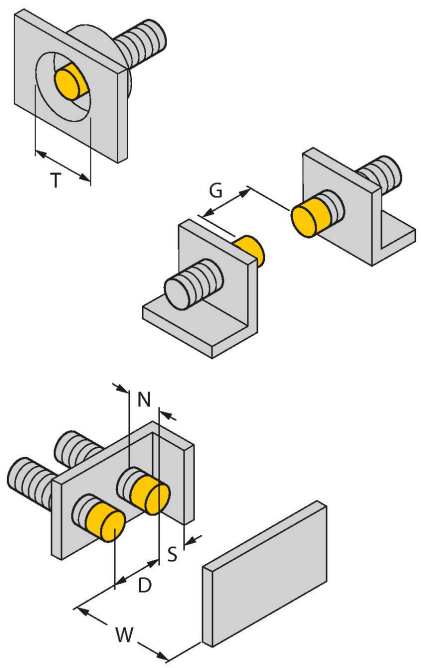
The inductive all-metal switches operate on the basis of the electromagnetic pulse method. Unlike standard inductive sensors, the magnetic field is not generated through oscillation but through short, periodic current pulses flowing through the coil. The magnetic field induces voltage in the object to be detected, which, for its part creates a current flow in this object. After switching off the current pulse, the current in the object also drops, now inducing voltage back in the emitter coil. This voltage is the wanted signal and remains unaffected by energy dissipation in the magnetic field. Only non-ferromagnetic or poorly conductive metals provide a low signal.

## Technical data

| Mechanical data | |
|---|---|
| Design | Threaded barrel, M5 x 0.5 |
| Dimensions | 30 mm |
| Housing material | Stainless steel, 1.4305 (AISI 303) |
| Active area material | Stainless steel, 1.4305 (AISI 303) |
| Admissible pressure on front cap | ≤ 150 bar |
| Max. tightening torque of housing nut | 2.5 Nm |
| Electrical connection | Cable |
| Cable quality | Ø 2.6 mm, PUR, 2 m |
| Core cross-section | 3 x 0.14 $mm^2$ |
| **Environmental conditions** | |
| Ambient temperature | -25…+80 °C |
| Vibration resistance | 55 Hz (1 mm) |
| Shock resistance | 30 g (11 ms) |
| Protection class | IP67 |
| MTTF | acc. to SN 29500 (Ed. 99) 20 °C |
| Switching state | LED, Yellow, LED flashing: 0.8 $s_r$ < s ≤ $s_r$ |

## Mounting instructions

Mounting instructions/Description




| | |
|---|---|
| Distance D | 40 mm |
| Distance W | 9 mm |
| Distance T | 18 mm |
| Distance S | 9 mm |
| Distance G | 6 x Sn |
| Distance N | 9 mm |
| Diameter active area B | Ø 5 mm |