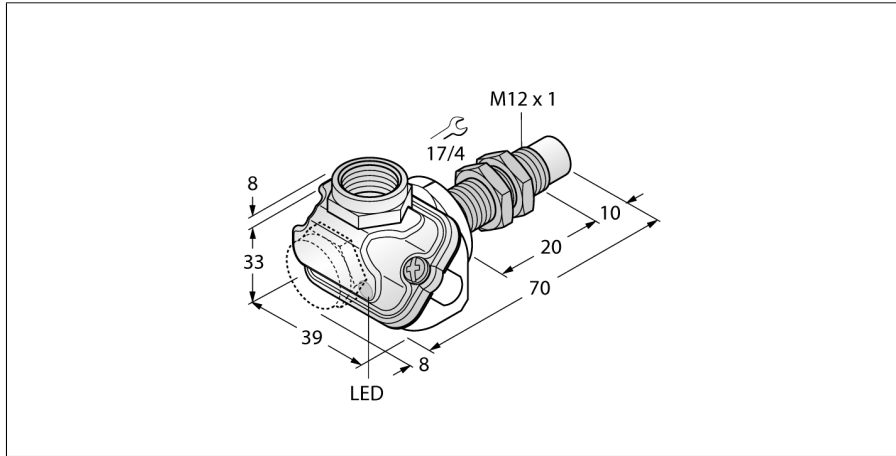


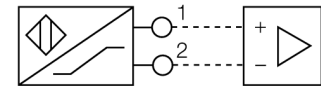
**Inductive sensor  
with extended temperature range  
NI5-EM12WDTC-Y1X**



- ATEX category II 1 G, Ex-zone 0 at temperatures up to +80 °C
- ATEX category II 2 G, Ex-zone 1
- ATEX category II 1 D, Ex zone 20 for temperatures from -25°C to +70°C
- SIL2 according to IEC 61508
- Threaded barrel, M12 x 1
- Stainless steel, 1.4404
- For temperatures of -40 °C up to +100 °C
- High protection class IP69K for rough ambient conditions
- Special double-lip seal
- Protection against all common acid and alkaline cleaning agents
- For the food industry
- DC 2-wire, nom. 8.2 VDC
- Output acc. to DIN EN 60947-5-6 (NAMUR)
- Terminal chamber

<b>Type code</b>	NI5-EM12WDTC-Y1X
Ident no.	4012141
<b>Rated operating distance Sn</b>	5 mm
Mounting condition	non-flush
Assured sensing range	≤ (0,81 x Sn) mm
Correction factors	St37 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4
Repeatability	≤ 2 % of full scale
Temperature drift	10 %
	≤ ± 20 %, ≤ -25 °C , ≥ +70 °C
Hysteresis	1...10 %
Ambient temperature	-40...+100 °C
	in the explosion hazardous area see instruction leaflet
<b>Output function</b>	2-wire, NAMUR
Switching frequency	2 kHz
Voltage	Nom. 8.2 VDC
Non-actuated current consumption	≥ 2.1 mA
Actuated current consumption	≤ 1.2 mA
<b>Approval acc. to</b>	KEMA 02 ATEX 1090X
Internal capacitance (C <sub>i</sub> ) / inductance (L <sub>i</sub> )	150 nF / 150 µH
Device designation	Ⓢ II 1 G Ex ia IIC T6 Ga/II 1 D Ex ia IIIC T115 °C Da (max. U <sub>i</sub> = 20 V, I <sub>i</sub> = 20 mA, P <sub>i</sub> = 200 mW)
Warning	avoid static charging
<b>Design</b>	threaded barrel, M12 x 1
Dimensions	70 mm
Housing material	stainless steel, V4A (1.4404)
Terminal chamber cover material	plastic, Ultem
Terminal chamber housing material	plastic, LCP-GF30
Material active area	Plastic, LCP
Admissible pressure on front cap	≤ 20 bar
Max. tightening torque housing nut	10 Nm
Connection	terminal chamber, Removable cage clamp terminals suited for M16 x 1.5 cable glands
Clamping ability	≤ 1.5 mm <sup>2</sup>
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP68 / IP69K
MTTF	6198 years acc. to SN 29500 (Ed. 99) 40 °C
<b>Switching state</b>	LED yellow

**Wiring diagram**



**Functional principle**

Inductive sensors detect metal objects contactless and wear-free. For this purpose they use a high-frequency electromagnetic AC field that interacts with the target. The sensors hosting a ferrite core coil generate the AC field through an LC resonant circuit.

Special versions are available for ambient temperatures between -60°C and +250°C.

**Inductive sensor  
with extended temperature range  
NI5-EM12WDTC-Y1X**

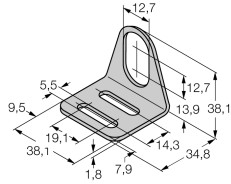
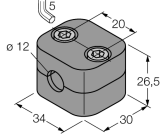
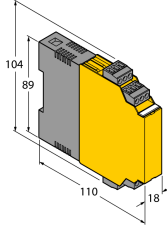
Distance D	3 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn
Distance N	2 x Sn

Diameter of the active area B                      Ø 12 mm



**Inductive sensor  
with extended temperature range  
NI5-EM12WDTC-Y1X**

**Accessories**

Type code	Ident no.	Description	Dimension drawing
MW-12	6945003	Mounting bracket for threaded barrel devices; material: Stainless steel A2 1.4301 (AISI 304)	 <p>Technical drawing of a stainless steel mounting bracket for threaded barrel devices. Dimensions include: 12.7 (width of top flange), 12.7 (height of top flange), 13.9 (width of base), 38.1 (total width), 14.3 (width of base), 7.9 (width of base), 1.8 (thickness of base), 38.1 (total width), 13.1 (width of base), 9.5 (width of base), 5.5 (width of base), and 1.8 (thickness of base).</p>
BSS-12	6901321	Mounting bracket for smooth and threaded barrel devices; material: Polypropylene	 <p>Technical drawing of a polypropylene mounting bracket for smooth and threaded barrel devices. Dimensions include: 20 (width of top flange), 26.5 (height of top flange), 34 (width of base), 30 (width of base), and 5 (height of top flange).</p>
IM1-22EX-R	7541231	Isolating switching amplifier, dual-channel; 2 relay outputs NO; input NAMUR signal; selectable ON/OFF mode for wire-break and short-circuit monitoring; adjustable signal flow (NO/ NC mode); removable terminal blocks; 18 mm width; universal voltage supply unit	 <p>Technical drawing of an isolating switching amplifier. Dimensions include: 104 (height), 89 (height), 110 (width), and 18 (width).</p>

# Inductive sensor with extended temperature range NI5-EM12WDTC-Y1X

## Operating manual

### Intended use

This device fulfills the directive 94/9/EC and is suited for use in explosion hazardous areas according to EN60079-0:2012, -11:2012, -26:2007. Further it is suited for use in safety-related systems, including SIL2 as per IEC 61508.

In order to ensure correct operation to the intended purpose it is required to observe the national regulations and directives.

### For use in explosion hazardous areas conform to classification

II 1 G and II 1 D (Group II, Category 1 G, electrical equipment for gaseous atmospheres and category 1 D, electrical equipment for dust atmospheres).

### Marking (see device or technical data sheet)

Ⓔ II 1 G and Ex ia IIC T6 Ga acc. to EN60079-0 and -26 and Ⓔ II 1 D Ex ia IIIC T115°C Da acc. to EN60079-0

### Local admissible ambient temperature

ATEX category II 2 G electrical equipment -40...+100 °C, category II 1 G -40...+80 °C and category II 1 D -25...+70 °C. The corresponding temperature classes are provided in the ATEX type-examination certificate. The device incorporates the custom-built /S97 and /S100 types.

### Installation / Commissioning

These devices may only be installed, connected and operated by trained and qualified staff. Qualified staff must have knowledge of protection classes, directives and regulations concerning electrical equipment designed for use in explosion hazardous areas. Please verify that the classification and the marking on the device comply with the actual application conditions.

This device is only suited for connection to approved Exi circuits compliant to EN60079-0 and -11. Please observe the maximum admissible electrical values.

After connection to other circuits the sensor may no longer be used in Exi installations. When interconnected to (associated) electrical equipment, it is required to perform the "Proof of intrinsic safety" (EN60079-14).

When employed in safety systems to IEC 51408 it is required to assess the failure probability (PFD) of the complete circuitry.

### Installation and mounting instructions

Avoid static charging of cables and plastic devices. Please only clean the device with a damp cloth. Do not install the device in a dust flow and avoid build-up of dust deposits on the device.

If the devices and the cable could be subject to mechanical damage, they must be protected accordingly. They must also be shielded against strong electro-magnetic fields.

The pin configuration and the electrical specifications can be taken from the device marking or the technical data sheet.

In order to avoid contamination of the device, please remove possible blanking plugs of the cable glands or connectors only shortly before inserting the cable or opening the cable socket.

### Special conditions for safe operation

avoid static charging

### service / maintenance

Repairs are not possible. The approval expires if the device is repaired or modified by a person other than the manufacturer. The most important data from the approval are listed.