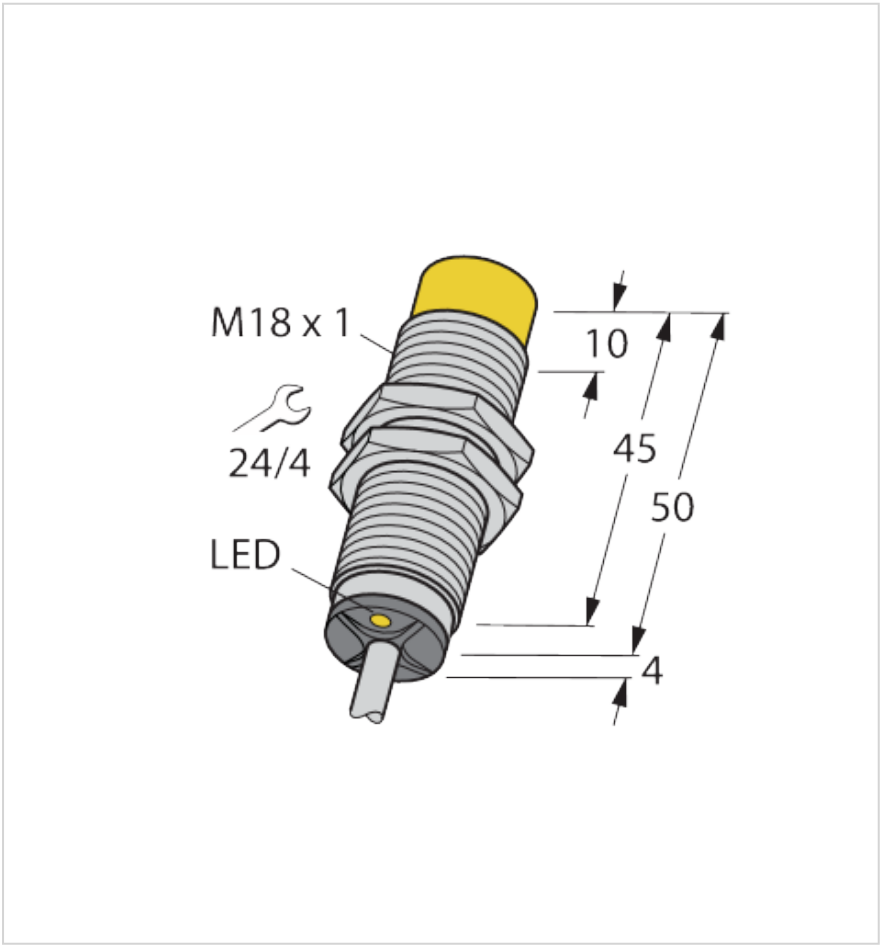
NI12U-EM18-AP6X/3D

Inductive Sensor



Type designation	NI12U-EM18-AP6X/3D
Ident-No.	1645308

Technical data

Application area	
Magnetic field immune	Immune to magnetic AC and DC fields
Detection area/measuring range	
Rated switching distance	12 mm
Secured operating distance	≤ (0.81 × Sn) mm
Power supply	
Operating voltage U_B	10...30 VDC
Voltage drop at I_e	≤ 1,8 V

Features

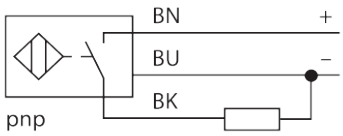
- M18 × 1 threaded barrel
- Stainless steel, 1.4301
- Factor 1 for all metals
- Degree of protection IP68
- Resistant to magnetic fields
- Extended temperature range
- High switching frequency
- Auto-compensation protects against predamping
- DC 3-wire, 10…30 VDC
- NC, PNP output
- Cable connection
- ATEX category II 3 D, Ex zone 22

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Technical data

Electrical data	
AC field stability	300 mT_{SS}
No-load current	25 mA
Output function	3-wire, NO contact, PNP
Short-circuit protection	yes/Cyclic
Wire break/reverse polarity protection	yes/Complete
DC field stability	300 mT
DC rated operational current	≤ 200 mA
Isolation test voltage	≤ 0,5 kV
Residual current	≤ 0,1 mA
Residual ripple	≤ 10 % U_{ss}
Switching frequency	2 kHz
Accuracy/deviation	
Hysteresis	3 % v. E...15 % v. E.
Temperature drift	10 %
Repeat accuracy	≤ 2 % v. E.
	≤ ± 20 %, ≤ -25 °C v ≥ +70 °C
Mechanical data	
Design	Threaded barrel, M18 x 1
Construction type designation	EM18
	⌀ 18 mm
Housing material	Stainless steel, 1.4301 (AISI 304)
Active area material	Plastic, PBT
End cap	Plastic, EPTR
Max. tightening torque of housing nut	25 Nm
Electrical connection	Cable
Pressure resistant	no
Thread length	35 mm
Thread size	M18 × 1
Mounting conditions	Non-flush, partially embeddable
Cable	
Cable length	2 m
Core cross-section	3 x 0,34 mm²
Cable type	LifYY
External Diameter of the Cable	Ø 5,2 mm
Cable Jacket Material	PVC
Ambient conditions	

Wiring Diagram



Functional principle

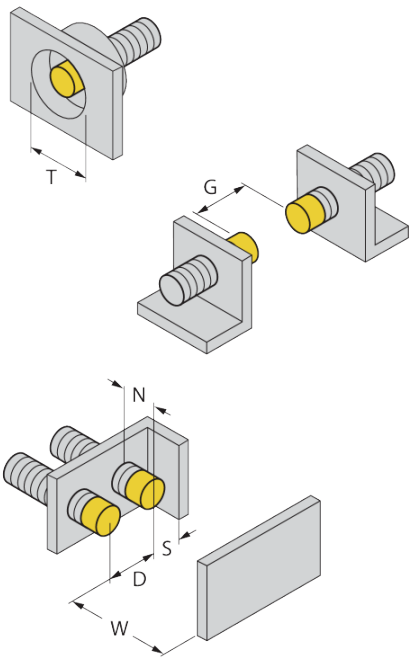
Inductive sensors are designed for wear-free and contactless detection of metal objects. uprox Factor 1 sensors have significant advantages due to their patented ferrite-coreless multi-coil system. They detect all metals at the same large switching distance and are resistant to magnetic fields.

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Technical data

Ambient temperature	-30...+85 °C
	For explosion hazardous areas see instruction leaflet
Pollution degree	3
Shock resistance	30 g (11 ms)
Vibration resistance	55 Hz (1 mm)
Protection class	IP68
Tests/approvals	
Approvals	ATEX II 3 D
Approval acc. to	ATEX test certificate, TURCK Ex-10002M X
Device marking	Ex II 3 D Ex tD A22 IP67 T110 °C
MTTF	874 Years acc. to SN 29500 (Ed. 99) 40 °C
Displays/controls	
Switching state	LED, Yellow
Other properties	
RoHs compatibility	yes

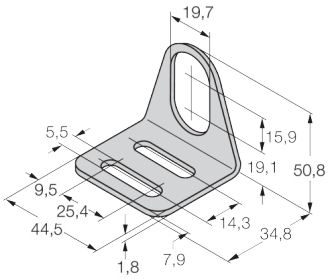
Assembly instructions

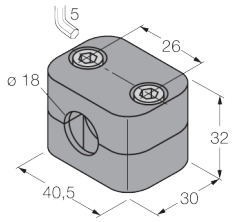


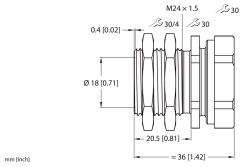
Distance D: 4 x B
Distance W: 3 x Sn
Distance T: 65 mm
Distance S: 1.5 x B
Distance G: 6 x Sn
Distance N: 2 x Sn
Diameter active area B: 18 mm

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Mounting accessories

MW18	6945004
	Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)

BSS-18	6901320
	Mounting bracket for smooth and threaded barrel sensors; material: Polypropylene

QM-18	6945102
	Quick-mount bracket with dead-stop; material: chrome-plated brass. Male thread M24 × 1.5. Note: The switching distance of the proximity switches may change when using quick-mount brackets.

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Operating instructions

Intended use	This device fulfills the directive 94/9/EC and is suited for use in explosion hazardous areas according to EN60079-0:2009 and EN61241-1:2004.
	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 3 D (Group II, Category 3 D, electrical equipment for dust atmospheres).
Marking (see device or technical data sheet)	Ex II 3 D Ex tD A22 IP67 T110 °C acc. to EN 60079-0:2009 and EN 61241-1:2004
Local admissible ambient temperature	-25…+70 °C
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.
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.
BA special conditions 1 GBS	For devices with M12 connectors please use the supplied safety clip SC-M12/3GD.
BA special conditions 2 GBS	Do not disconnect the plug-in connection or cable under voltage.
BA special conditions 3 GBS	Please attach a warning label permanently in an appropriate fashion in close proximity to the plug-in connection with the following inscription: Nicht unter Spannung trennen / Do not separate when energized.
BA special conditions 4 GBS	The device must be protected against any kind of mechanical damage and degrading UV-radiation.
BA special conditions 6 GBS	Load voltage and operating voltage of this equipment must be supplied from power supplies with safe isolation (IEC 30 364/UL508), to ensure that the rated voltage of the equipment (24 VDC +10% = 26.4 VDC) is never exceeded by more than 40%.
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.

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