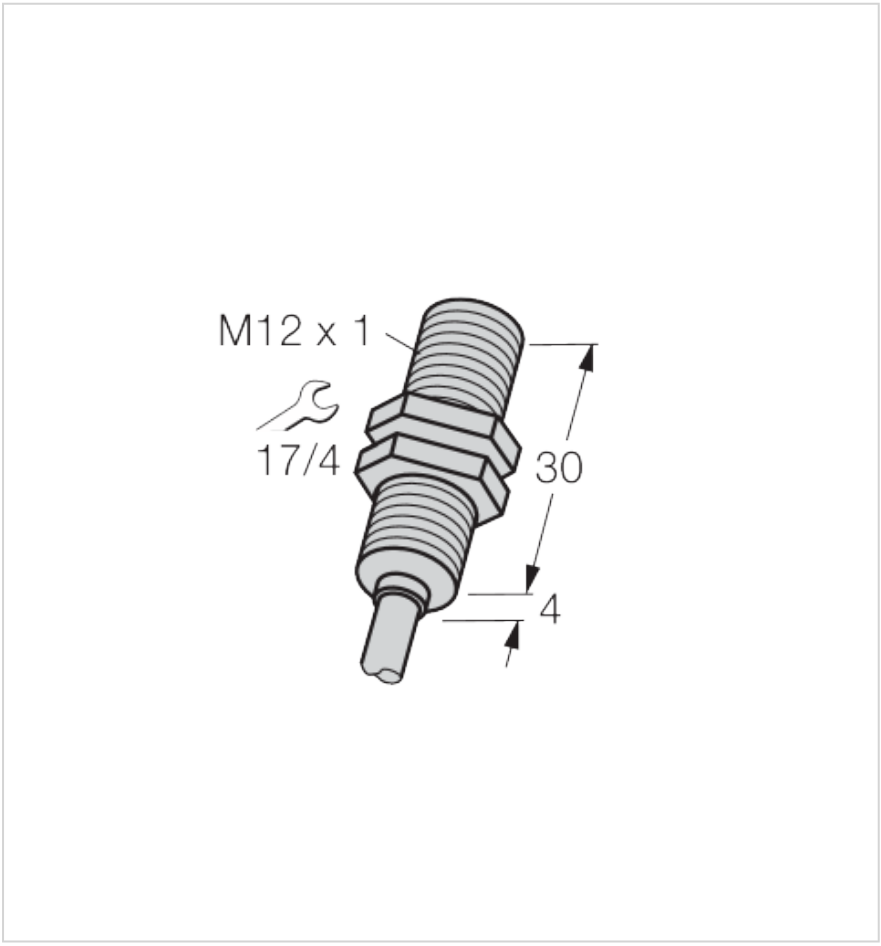
BI2-G12-Y1

Inductive Sensor





Type designation	BI2-G12-Y1
Ident-No.	10054

Technical data

General data	
Correction factors	St37 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4
Detection area/measuring range	
Rated switching distance	2 mm
Secured operating distance	≤ (0.81 × Sn) mm
Electrical data	
Actuated current consumption	≤ 1,2 mA
Output function	2-wire, NAMUR

Features

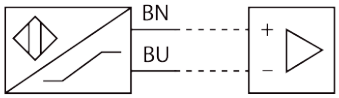
- Threaded barrel, M12 x 1
- Chrome-plated brass
- DC 2-wire, nom. 8.2 VDC
- Output acc. to EN 60947-5-6 (NAMUR)
- Cable connection
- ATEX category II 1 G, Ex zone 0
- ATEX category II 1 D, Ex zone 20
- SIL2 (Low Demand Mode) acc. to IEC 61508, PL c acc. to ISO 13849-1 with HFT0
- SIL3 (All Demand Mode) acc. to IEC 61508, PL e acc. to ISO 13849-1 with redundant configuration HFT1

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Technical data

Internal capacitance (C_i)/inductance (L_i)	150 nF/150 µH
Non-actuated current consumption	≥ 2,1 mA
Switching frequency	5 kHz
Voltage	nom. 8,2 VDC
Accuracy/deviation	
Hysteresis	1 % v. E...10 % v. E.
Temperature drift	10 %
Repeat accuracy	≤ 2 % v. E.
Mechanical data	
Design	Threaded barrel, M12 x 1
Construction type designation	G12
	⌀ 12 mm
Housing material	Metal, CuZn, Chrome-plated
Active area material	Plastic, PA12-GF30
End cap	Plastic, EPTR
Max. tightening torque of housing nut	10 Nm
Electrical connection	Cable
Pressure resistant	no
Thread length	30 mm
Thread size	M12 × 1
Mounting conditions	Flush
Cable	
Cable length	2 m
Cable jacket	Blue
Core cross-section	2 x 0,34 mm²
Cable type	LifYY
External Diameter of the Cable	Ø 5,2 mm
Cable Jacket Material	PVC
Ambient conditions	
Ambient temperature	-25...+70 °C
Pollution degree	3
Shock resistance	30 g (11 ms)
Vibration resistance	55 Hz (1 mm)
Protection class	IP67
Tests/approvals	
Approvals	ATEX II 1 G, ATEX II 2 G, ATEX II 3 G, ATEX II 1 D, ATEX II 2 D, ATEX II 3 D, SIL 2, PL c

Wiring Diagram



Functional principle

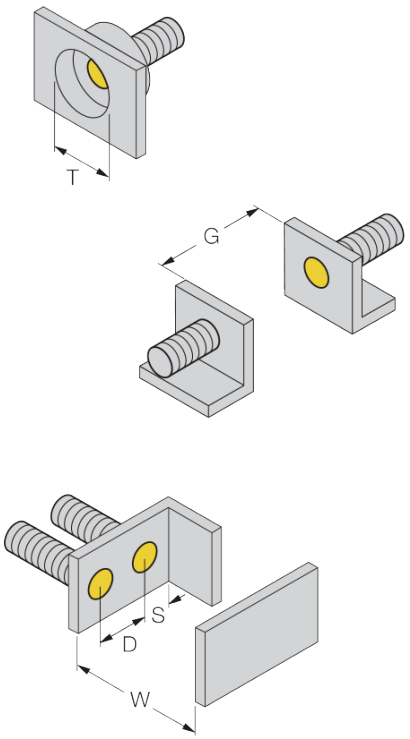
Inductive sensors detect metal objects contactless and wear-free. For this, they use a high-frequency electromagnetic AC field that interacts with the target. Inductive sensors generate this field via an RLC circuit with a ferrite coil.

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Technical data

Approval acc. to	KEMA 02 ATEX 1090X
Device marking	Ex II 1 G Ex ia IIC T6 Ga/II 1 D Ex ia IIIC T135 °C Da
	(max. U_i = 20 V, I_i = 60 mA, P_i = 200 mW)
MTTF	6198 Years acc. to SN 29500 (Ed. 99) 40 °C
Other properties	
RoHs compatibility	yes

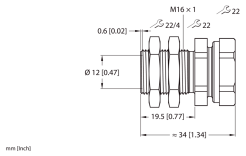
Assembly instructions

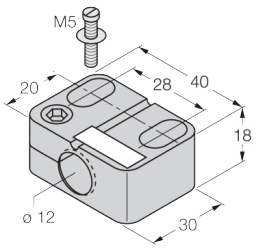


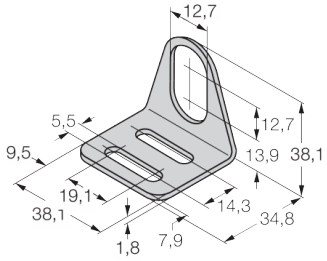
Distance D: 2 x B
Distance W: 3 x Sn
Distance T: 3 x B
Distance S: 1.5 x B
Distance G: 6 x Sn
Diameter active area B: 12 mm

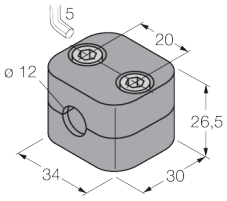
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Mounting accessories

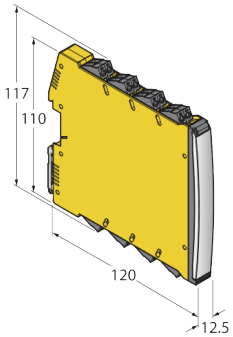
QM-12	6945101
	Quick-mount bracket with dead-stop; material: chrome-plated brass. Male thread M16 × 1. Note: The switching distance of the proximity switches may change when using quick-mount brackets.

BST-12B	6947212
	Mounting bracket for threaded barrel sensors, with dead-stop; material: PA6

MW12	6945003
	Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)

BSS-12	6901321
	Mounting bracket for smooth and threaded barrel sensors; material: Polypropylene

Functional accessories

IMX12-DI01-2S-2T-0/24VDC	7580020
	Isolating switching amplifier, 2-channel; SIL2 acc. to IEC 61508; Ex-proof version; 2 transistor outputs; input Namur signal; ON/OFF switchable monitoring of wire-break and short-circuit; toggle between NO/NC mode; signal doubling; removable screw terminals; 12.5 mm wide; 24 VDC power supply

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Operating instructions

Intended use	This device fulfills Directive 2014/34/EC and is suited for use in explosion-hazardous areas according to EN 60079-0:2018 and EN 60079-11:2012.
	It is also suitable for use in safety-related systems, including SIL2 (IEC 61508) and PL c (ISO 13849-1) with HFT0 and SIL3 (IEC 61508) and PL e (ISO 13849-1) with redundant configuration HFT1
	In order to ensure that the device is operated as intended, the national regulations and directives must be observed.
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)	Ex II 1 G and Ex ia IIC T6 Ga and Ex II 1 D Ex ia IIIC T135 °C Da acc. to EN 60079-0, -11
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.
BA intrinsically safe text 1 GBS	This device is only suited for connection to approved Exi circuits according to EN 60079-0 and EN 60079-11. Please observe the maximum admissible electrical values.
BA intrinsically safe text 2 GBS	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).
BA intrinsically safe text 3 GBS	Attention! When used in safety systems, all content of the security manual must be observed.
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.
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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