

Inductive Sensor

Ring sensor

IR3F002

Part Number

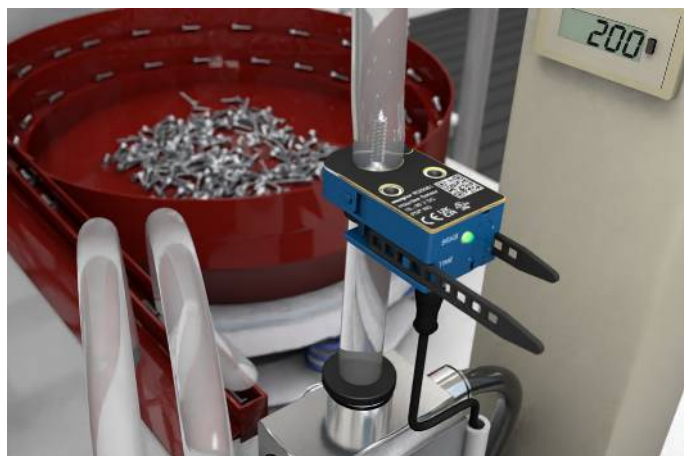


reddot winner 2025



- Correction factor 1
- Flexible soft binder on the sensor
- Intuitive operating concept with IO-Link interface
- Plug and Play
- Separable housing

The inductive ring sensor with separable housing enables quick and flexible mounting on various objects, such as hoses. Its compact construction, with a switching status indicator visible on all sides and a cable outlet in the hose direction, is particularly well suited for confined spaces. It is intuitive to operate via the potentiometer or the IO-Link interface. The sensor switches independently of the material thanks to correction factor 1. Frequency switching enables the operation of several sensors in the immediate vicinity without mutual interference.



Technical Data

Inductive Data

Inside diameter	15,1 mm
Max. tube diameter	15 mm
Installation A/Bx/By/C in mm	0/30/50/5
Installation A/Bx/By/C in mm with frequency switching	0/0/0/5
Functional principle	Static
Smallest recognizable object (Ø)	3 mm*
Correction Factors Stainless Steel V2A/CuZn/Al	1/1/1

Electrical Data

Supply Voltage	10...30 V DC
Current Consumption (U _b = 24 V)	< 20 mA
Object speed	< 50 m/s
Response Time	< 300 µs
Ready-state delay	< 1,5 s
Switching Output Voltage Drop	1,5 V
Temperature Range	0...60 °C
Short Circuit Protection	yes
Overload Protection	yes
Reverse Polarity Protection	yes
Switching Output/Switching Current	100 mA
Pulse extension	200 ms
Interface	IO-Link V1.1
IO-Link Version	1.1

Mechanical Data

Connection	M8 × 1; 4-pin
Setting Method	Potentiometer/IO-Link
Housing Material	Plastic, PA
Hanger opening/closing cycles	Max. 100
Degree of Protection	IP54

Safety-relevant Data

MTTFd (EN ISO 13849-1)	1018,99 a
Scope of delivery	1 × ring sensor incl. soft binder
Packaging unit	1 Piece

NPN NO

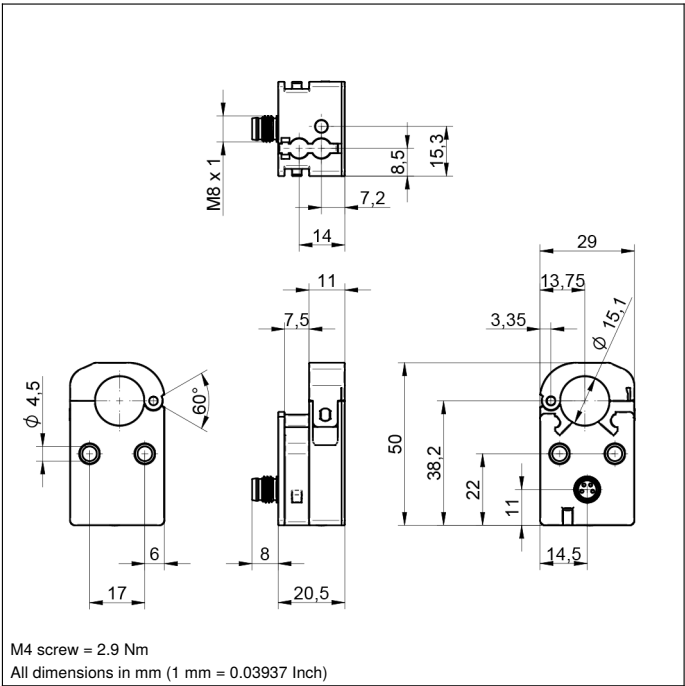
Connection Diagram No.

275

Control Panel No.

T20

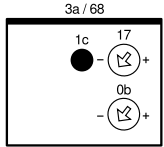
* Relates to a steel ball when the setting potentiometer max. is selected



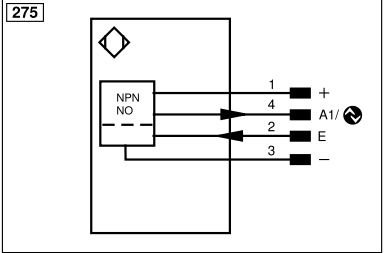
M4 screw = 2.9 Nm
All dimensions in mm (1 mm = 0.03937 Inch)

Ctrl. Panel

T20



0b = Pulse length adjuster / for IRxF: additional calibration mode
17 = Sensitivity Adjustment
1c = Status display/setup aid
3a = Switching Status Indicator/Error Indicator
68 = Power LED



Legend			
+	Supply Voltage +	nc	Not connected
-	Supply Voltage 0 V	U	Test Input
~	Supply Voltage (AC Voltage)	Ü	Test Input inverted
A	Switching Output (NO)	W	Trigger Input
Ä	Switching Output (NC)	W-	Ground for the Trigger Input
V	Contamination/Error Output (NO)	O	Analog Output
Ȳ	Contamination/Error Output (NC)	O-	Ground for the Analog Output
E	Input (analog or digital)	BZ	Block Discharge
T	Teach Input	Amv	Valve Output
Z	Time Delay (activation)	a	Valve Control Output +
S	Shielding	b	Valve Control Output 0 V
RxD	Interface Receive Path	SY	Synchronization
TxD	Interface Send Path	SY-	Ground for the Synchronization
RDY	Ready	E+	Receiver-Line
GND	Ground	S+	Emitter-Line
CL	Clock	±	Grounding
E/A	Output/Input programmable	SnR	Switching Distance Reduction
IO-Link	IO-Link	Rx+/-	Ethernet Receive Path
PoE	Power over Ethernet	Tx+/-	Ethernet Send Path
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(-)
OSSD	Safety Output	La	Emitted Light disengageable
Signal	Signal Output	Mag	Magnet activation
Bl_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation
ENo RS422	Encoder 0-pulse 0/0 (TTL)	EDM	Contact Monitoring
PT	Platinum measuring resistor	ENARs422	Encoder A/Ä (TTL)
		ENBRs422	Encoder B/B (TTL)
		ENA	Encoder A
		ENB	Encoder B
		AMIN	Digital output MIN
		AMAX	Digital output MAX
		AOK	Digital output OK
		SY In	Synchronization In
		SY OUT	Synchronization OUT
		OLT	Brightness output
		M	Maintenance
		rsv	Reserved
		Wire Colors according to DIN IEC 60757	
		BK	Black
		BN	Brown
		RD	Red
		OG	Orange
		YE	Yellow
		GN	Green
		BU	Blue
		VT	Violet
		GY	Grey
		WH	White
		PK	Pink
		GNYE	Green/Yellow

Mounting

