

Inductive Sensor

Ring sensor

IR5F001

Part Number

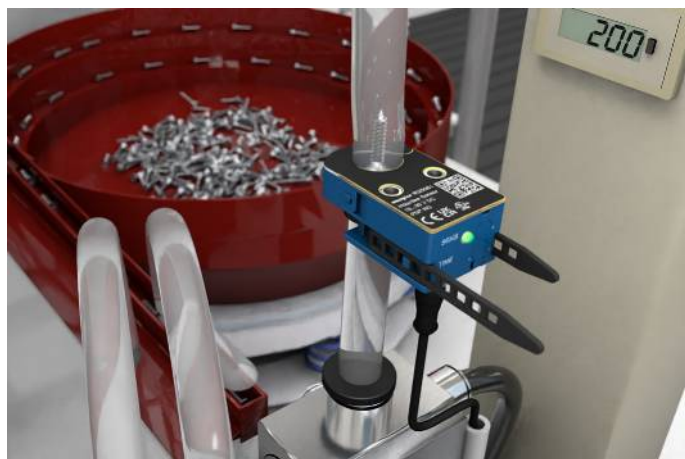


reddot winner 2025



- 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	25,1 mm
Max. tube diameter	25 mm
Installation A/Bx/By/C in mm	0/42/100/10
Installation A/Bx/By/C in mm with frequency switching	0/0/0/10
Functional principle	Static
Smallest recognizable object (Ø)	5 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)	< 25 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

PNP NO

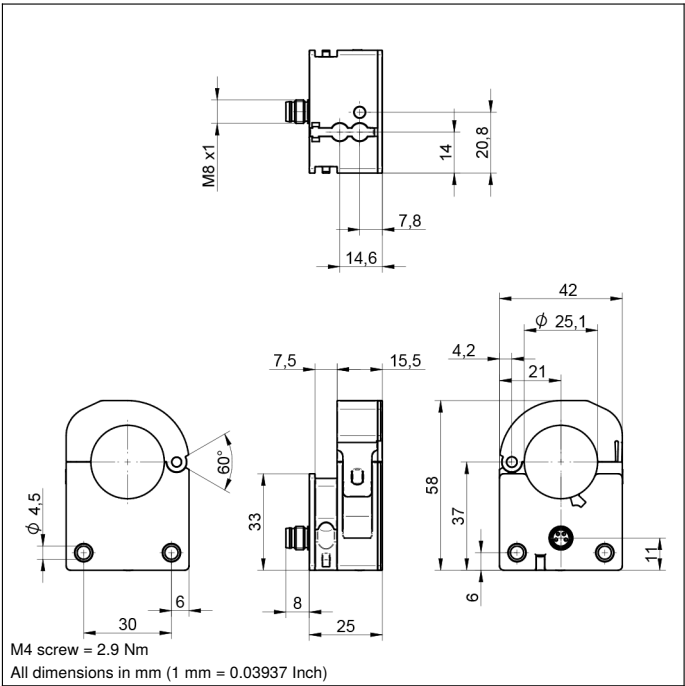
Connection Diagram No.

271

Control Panel No.

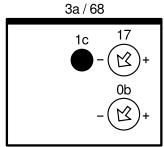
T20

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

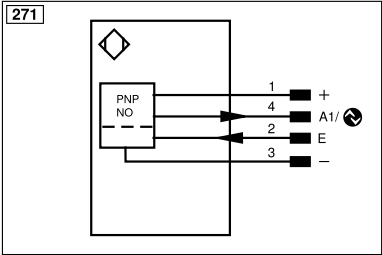


Ctrl. Panel

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	ENBRS422	Encoder B/B (TTL)
-	Supply Voltage 0 V	U	Test Input	ENA	Encoder A
~	Supply Voltage (AC Voltage)	Ü	Test Input inverted	ENb	Encoder B
A	Switching Output (NO)	W	Trigger Input	AMIN	Digital output MIN
Ä	Switching Output (NC)	W-	Ground for the Trigger Input	AMAX	Digital output MAX
V	Contamination/Error Output (NO)	O	Analog Output	AOK	Digital output OK
Ÿ	Contamination/Error Output (NC)	O-	Ground for the Analog Output	SY In	Synchronization In
E	Input (analog or digital)	BZ	Block Discharge	SY OUT	Synchronization OUT
T	Teach Input	Amv	Valve Output	OLT	Brightness output
Z	Time Delay (activation)	a	Valve Control Output +	M	Maintenance
S	Shielding	b	Valve Control Output 0 V	rsv	Reserved
RxD	Interface Receive Path	SY	Synchronization	Wire Colors according to DIN IEC 60757	
TxD	Interface Send Path	SY-	Ground for the Synchronization	BK	Black
RDY	Ready	E+	Receiver-Line	BN	Brown
GND	Ground	S+	Emitter-Line	RD	Red
CL	Clock	±	Grounding	OG	Orange
E/A	Output/Input programmable	SnR	Switching Distance Reduction	YE	Yellow
IO-Link	IO-Link	Rx+/-	Ethernet Receive Path	GN	Green
PoE	Power over Ethernet	Tx+/-	Ethernet Send Path	BU	Blue
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(-)	VT	Violet
OSSD	Safety Output	La	Emitted Light disengageable	GY	Grey
Signal	Signal Output	Mag	Magnet activation	WH	White
BL_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation	PK	Pink
ENo RS422	Encoder 0-pulse 0/Ü (TTL)	EDM	Contact Monitoring	GNYE	Green/Yellow
PT	Platinum measuring resistor	ENARIS422	Encoder A/Ä (TTL)		

Mounting

