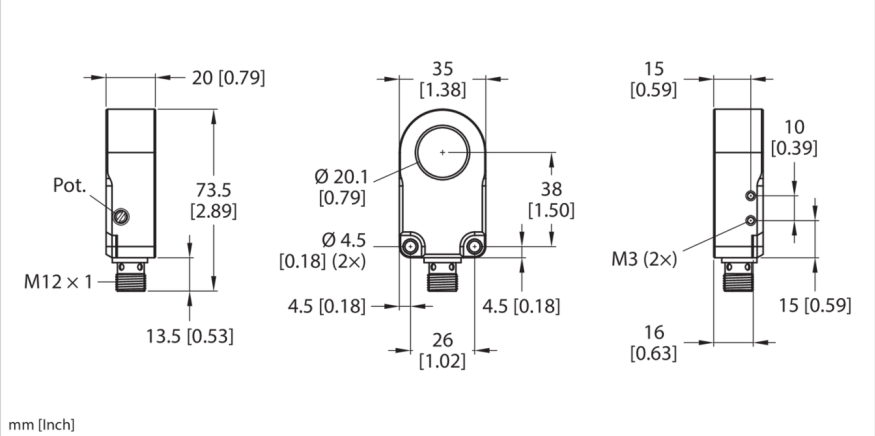
BI20R-W20-IOL6X-H1141

Inductive Sensor
Ring sensor





Type designation	BI20R-W20-IOL6X-H1141
Ident-No.	100053321

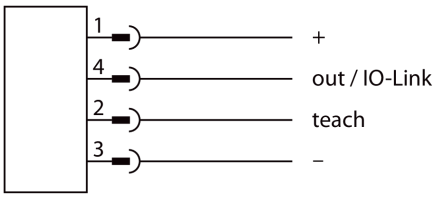
Technical data

General data	
Fly-by speed	0.1...35 m/s
Pulse duration	20 ms ±20 %
Special features	Ring sensor, dynamic output, Ring sensor, static output, Potentiometer
Steel ball diameter (DIN 5401)	≥ 1 mm
Power supply	
Operating voltage U_B	10...30 VDC
Voltage drop at I_e	≤ 2,0 V
Electrical data	
No-load current	30 mA
Output function	4-pin, NO/NC programmable, PNP/NPN
Short-circuit protection	yes
Wire break/reverse polarity protection	yes/yes
DC rated operational current	≤ 100 mA
Isolation test voltage	≤ 0,5 kV
Residual current	≤ 0,1 mA
Residual ripple	≤ 10 % U_{SS}

Features

- Rectangular, height 20 mm
- Plastic, PA and POM
- Pulse duration can be adjusted
- Sensitivity adjusted using potentiometer and IO-Link
- Two operating frequencies can be selected
- DC 4-wire, 10…30 VDC
- Dynamic or static output behavior can be adjusted
- Adjustable NO contact or NC contact,
- PNP/NPN output, adjustable
- Connector, M12 × 1

Wiring Diagram



Functional principle

Inductive sensors are used for the contactless and wear-free detection of metallic objects. For this, they use a high-

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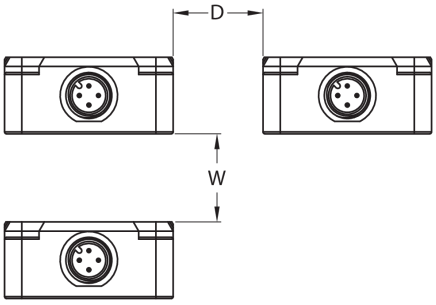
Technical data

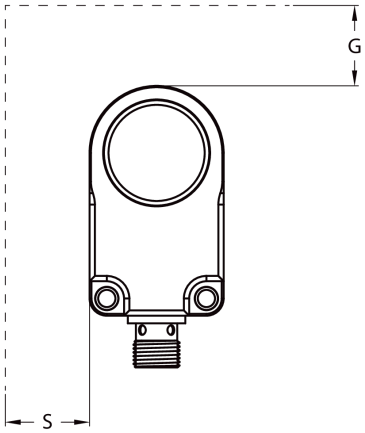
Interfaces	
Communication protocol	IO-Link
IO-Link	
IO-Link specification	V 1.1.4
Communication mode	COM 2 (38.4 kBaud)
Process data width	32 bit
Function pin 4	IO-Link/SIO
Mechanical data	
Design	Ring sensor
Construction type designation	W20
Dimensions	60 mm x 35 mm x 20 mm
Housing material	Plastic, PA POM
Electrical connection	Connector, M12 x 1
Coil body	plastic, POM
Number of pins	4
Inside ring diameter D	20,1 mm
Pressure resistant	no
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	cULus
MTTF	658 Years acc. to SN 29500 (Ed. 99) 40 °C
Displays/controls	
Switching state	LED, Yellow
Other properties	
RoHs compatibility	yes
Comments	
Remark to product	Torque for mounting screws: (M3 max. 0.5 Nm, M4 max. 1.4 Nm)

frequency electromagnetic AC field that interacts with the target. In inductive ring sensors, this field is generated by an RLC circuit. The target acts as the coil core.

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Assembly instructions





Installation information:
- Distance D = 0
All sensors can be positioned without a gap,
directly next to each other
- Distance W:
For certain configurations,
different oscillation frequencies
must be set; see Table "W"
- Distance to metal
-- Dynamic operation:
There is no need to keep a distance

-- Static operation:
See "Static operation" table

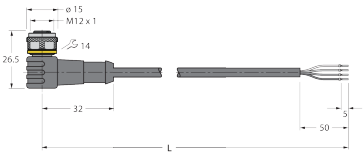
W	[mm]			
	static		dynamic	
Frequ.	AA	AB	AA	AB
BI6R	0	0	0	0
BI10R	0	0	0	0
BI15R	3	0	0	0
BI20R	5	3	3	0
BI25R	10	4	7	3
BI30R	13	8	12	5
BI35R	18	10	14	8
BI50R	50	40	40	15

Static operation	[mm]	
Distance	S	G
BI6R	0	0
BI10R	0	0
BI15R	2	0
BI20R	4	2
BI25R	5	2
BI30R	6	4
BI35R	7	9
BI50R	22	17

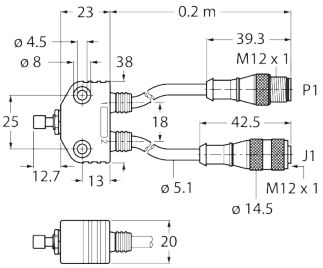
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Connection accessories

RKC4.4T-2/TXL	6625503
	Connection cable, M12 female connector, straight, 4-pin, cable length: 2 m, jacket material: PUR, black; cULus approval

WKC4.4T-2/TEL	6625025
	Connection cable, M12 female connector, angled, 4-pin, cable length: 2 m, jacket material: PVC, black; cULus approval

Functional accessories

VB2-SP1	A3501-29
	Teach adapter

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