

TURCK

Your Global Automation Partner

Inductive Ring Sensors Family



AI generated image



Small Metal Parts Detection - Big Performance

Detect small metal parts reliably, even at high speeds and in tight spaces. TURCK offers a range of variants with and without IO-Link. The BlxR-W20 family of inductive ring sensors is offered in 8 diameters (6 – 50 mm) with IO-Link. This capability provides digital parameterization and real-time diagnostics, including operating hours, switching cycles and device temperature. Other versions without IO-Link come in 8 diameters (6 - 100 mm) with static or dynamic switching outputs.

TURCK's ring sensors use a symmetrical coil array to detect metal parts and wire regardless of their position, orientation or rotation. They are ideal for feeding systems for automatic screw driving machines, part counting to identify missing parts, sorting in conveyor

systems, as well as wire breakage and jam detection. In dynamic mode, the ring sensors detect even small and fast-moving parts with an adjustable pulse length and high repeatability.

These highly configurable sensors can replace multiple fixed-function sensors with one standardized, IO-Link-capable solution. That means fewer device variants, simpler inventory management and greater application flexibility for customers.

Your benefits

- Identify missing/duplicate metal parts, prevent blockages & monitor wire breaks
- Easy digital parameterization & real-time diagnostics via IO-Link (depending on variant)
- Rugged, low profile housing, rated IP67
- Reduced variety of variants needed thanks to flexible configuration
- Easy commissioning & retrofitting

Technical Data

General data

Operating Voltage	10..30 VDC
DC Rated Operating Current	≤200 mA Static or Dynamic, ≤100 mA IO-Link
Ambient Temperature	-25... +70 °C
Protection Class	IP67

Part number selection - IO-Link

ID Number	Part Number	Ring Size	Minimum Target Size	Programmable Output Signal	Output Type	Electrical Connection
100053316	BI6R-W20-IOL6X-H1141	6 mm	≥ 0.5 mm	Static/Dynamic	IO-Link or PNP/NPN	M12 connection
100053319	BI10R-W20-IOL6X-H1141	10 mm	≥ 0.6 mm	Static/Dynamic	IO-Link or PNP/NPN	M12 connection
100053320	BI15R-W20-IOL6X-H1141	15 mm	≥ 0.8 mm	Static/Dynamic	IO-Link or PNP/NPN	M12 connection
100053321	BI20R-W20-IOL6X-H1141	20 mm	≥ 1 mm	Static/Dynamic	IO-Link or PNP/NPN	M12 connection
100053322	BI25R-W20-IOL6X-H1141	25 mm	≥ 1.2 mm	Static/Dynamic	IO-Link or PNP/NPN	M12 connection
100053323	BI30R-W20-IOL6X-H1141	30 mm	≥ 1.8 mm	Static/Dynamic	IO-Link or PNP/NPN	M12 connection
100053324	BI35R-W20-IOL6X-H1141	35 mm	≥ 2 mm	Static/Dynamic	IO-Link or PNP/NPN	M12 connection
100053325	BI50R-W20-IOL6X-H1141	50 mm	≥ 2.5 mm	Static/Dynamic	IO-Link or PNP/NPN	M12 connection

Part number selection - Non IO-Link

ID Number	Part Number	Ring Size	Minimum Target Size	Output Signal	Output Type	Electrical Connection
1407000	BI6R-Q14-AP6X2-H1141	6 mm	≥ 2 mm	Static	PNP	M12 connection
1407100	BI10R-Q14-AP6X2-H1141	10 mm	≥ 2 mm	Static	PNP	M12 connection
14038	BI10R-W30-DAP6X-H1141	10 mm	≥ 2 mm	Dynamic	PNP	M12 connection
1406120	BI10R-Q14-AN6X2	10 mm	≥ 2 mm	Static	NPN	2 m cable w/ flying leads
1407200	BI15R-Q14-AP6X2-H1141	15 mm	≥ 3 mm	Static	PNP	M12 connection
14040	BI15R-W30-DAP6X-H1141	15 mm	≥ 3 mm	Dynamic	PNP	M12 connection
1407220	BI15R-Q14-AN6X2-H1141	15 mm	≥ 3 mm	Static	NPN	M12 connection
1406200	BI15R-Q14-AP6X2	15 mm	≥ 3 mm	Static	PNP	2 m cable w/ flying leads
1406200	BI15R-Q14-AP6X2	15 mm	≥ 3 mm	Static	PNP	2 m cable w/ flying leads
1407300	BI20R-Q14-AP6X2-H1141	20 mm	≥ 4 mm	Static	PNP	M12 connection
14042	BI20R-W30-DAP6X-H1141	20 mm	≥ 4 mm	Dynamic	PNP	M12 connection
1407320	BI20R-Q14-AN6X2-H1141	20 mm	≥ 4 mm	Static	NPN	M12 connection
14043	BI20R-W30-DAN6X-H1141	20 mm	≥ 4 mm	Dynamic	NPN	M12 connection
1407500	BI30R-Q20-AP6X2-H1141	30 mm	≥ 6 mm	Static	PNP	M12 connection
14045	BI30R-W30-DAP6X-H1141	30 mm	≥ 6 mm	Dynamic	PNP	M12 connection
1407520	BI30R-Q20-AN6X2-H1141	30 mm	≥ 6 mm	Static	NPN	M12 connection
1404501	BI30R-W30-DAN6X-H1141	30 mm	≥ 6 mm	Dynamic	NPN	M12 connection
1407530	BI50R-Q80-AP6X2-H1141	50 mm	≥ 8 mm	Static	PNP	M12 connection
1407531	BI65R-Q80-AP6X2-H1141	65 mm	≥ 10 mm	Static	PNP	M12 connection
1510301	NI100R-S32XL-VP44X-H1141	100 mm	≥ 10 mm	Static	PNP	M12 connection