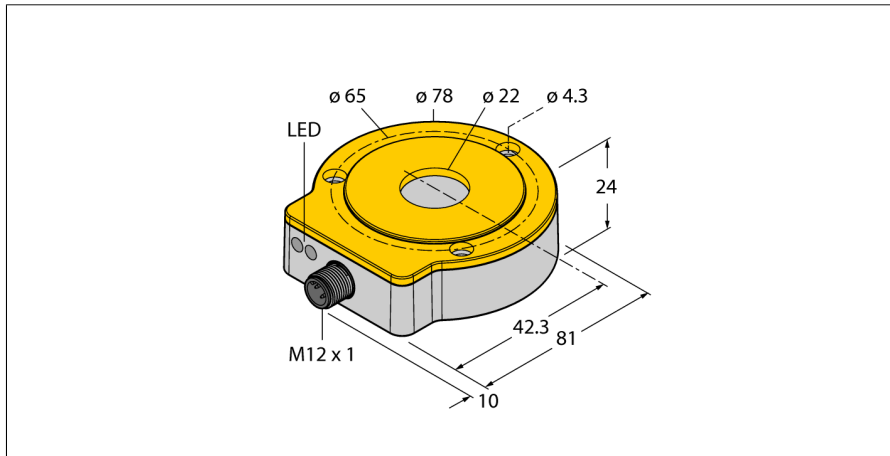
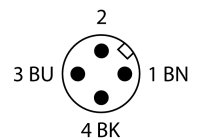
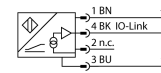


Contactless Encoder
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RI360P0-QR24M0-IOLX2 -H1141



- Compact, rugged housing
- Many mounting possibilities
- Status displayed via LED
- Immune to electromagnetic interference
- 16 bits singleturn
- Process value in 32 bit IO-Link telegram
- 3 error bits
- 16 bits singleturn
- 13 bits multiturn
- 15...30 VDC
- M12 × 1 male connector, 4-pin

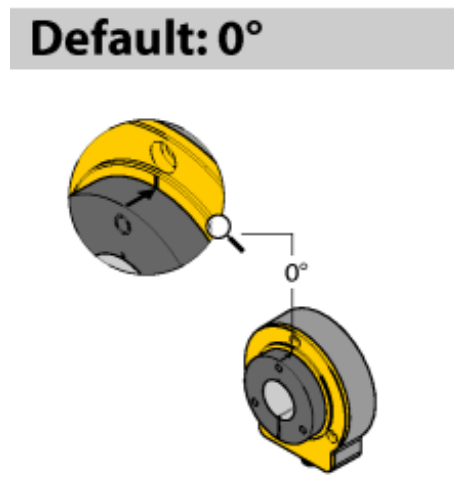
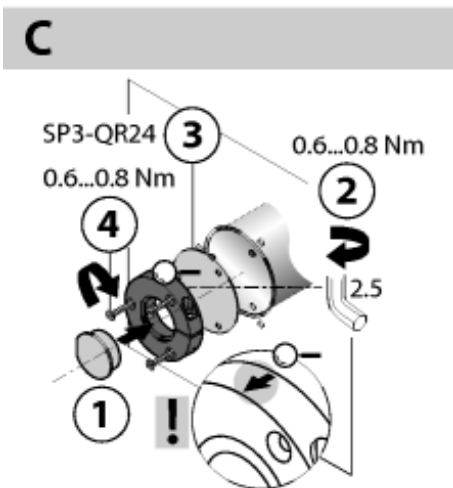
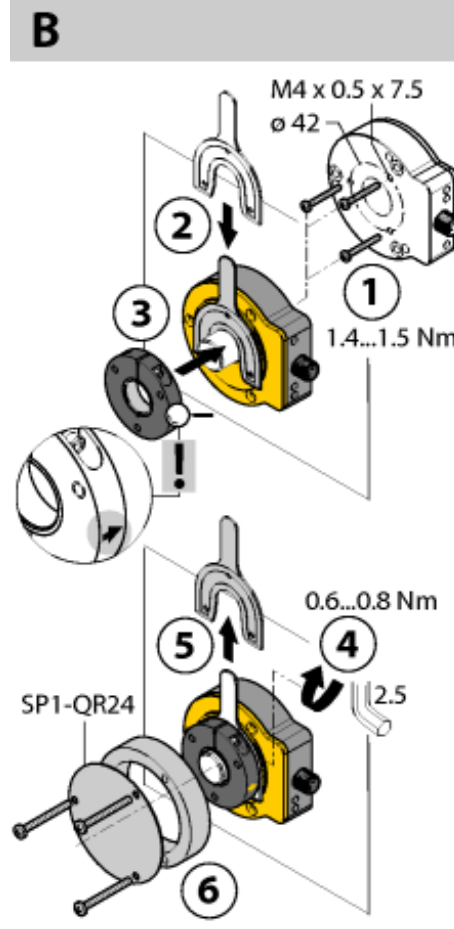
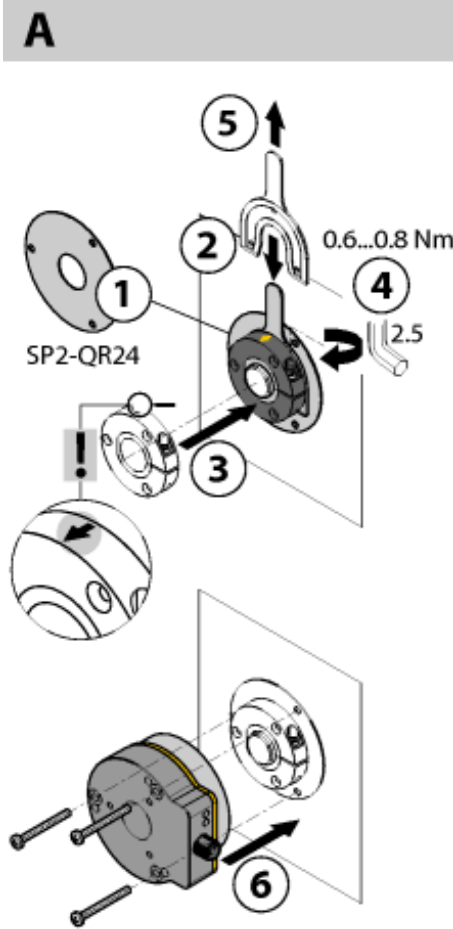
Wiring Diagram



Functional principle

The measuring principle of inductive angle sensors is based on oscillation circuit coupling between the positioning element and the sensor, whereby an output signal is provided proportional to the angle of the positioning element. The rugged sensors are wear and maintenance-free, thanks to the contactless operating principle. They convince through their excellent repeatability, resolution and linearity within a broad temperature range. The innovative technology ensures a high immunity to electromagnetic DC and AC fields.

Type designation	RI360P0-QR24M0-IOLX2 -H1141
Ident-No.	1590975
Measuring principle	inductive
Max. Rotational Speed	800 rpm Determined with standardized construction, with a steel shaft Ø 20 mm, L = 50 mm and reducer Ø 20 mm
Starting torque shaft load (radial / axial)	not applicable, because of contactless measuring principle
Resolution	16 bit
Measuring range	0...360°
Nominal distance	1.5 mm
Repeat accuracy	≤ 0.01 % of full scale
Linearity deviation	≤ 0.05 % f.s.
Temperature drift	≤ ± 0.003 % / K
Ambient temperature	-25...+85 °C
Operating voltage	15...30 VDC
Residual ripple	≤ 10 % U _{is}
Isolation test voltage	≤ 0.5 kV
Output type	absolute multiturn
Sample rate	1000 Hz
Current consumption	< 50 mA
IO-Link Specification	Specified acc. to version 1.1
Programming	FDT/DTM
Communication Mode	COM 2 (38.4 kBaud)
Process data width	32 bit
Minimum cycle time	3 ms
Function Pin 4	IO-Link
Dimensions	81 x 78 x 24 mm
Shaft Type	Hollow shaft
Housing material	Metal/Plastic, ZnAlCu1/PBT-GF30-V0
Electrical connection	Connector, M12, 4-pin
Vibration resistance	55 Hz (1 mm)
Vibration resistance (EN 60068-2-6)	20 g; 10...3000 Hz; 50 cycles; 3 axes
Shock resistance (EN 60068-2-27)	100 g; 11 ms ½ sinus; each 3x; 3 axes
Continuous shock resistance (EN 60068-2-29)	40 g; 6 ms ½ sinus; each 4000 x; 3 axes
Protection class	IP68/IP69K
MTTF	138 years acc. to SN 29500 (Ed. 99) 40 °C
Packaging unit	1
Power-on indication	LED, Green
Measuring range display	LED, yellow, yellow flashing



Extensive range of mounting accessories for easy adaptation to many different shaft diameters. Based on the functional principle of RLC coupling, the sensor operates absolutely wear-free and is immune to magnetized metal splinters and other interference fields. Wrong installation is hardly possible.

The adjacent figure shows the two separate units, sensor and positioning element.

Mounting option A:

First, interconnect positioning element and rotatable shaft. Then place the encoder above the rotating part in such a way that you get a tight and protected unit.

Mounting option B:

Push the encoder on the back site of the shaft and fasten it to the machine. Then clamp the positioning element to the shaft with the bracket.

Mounting option C:

If the positioning element is to be screwed on a rotating machine part, use the RA0-QR24 plug which is included in the delivery. Then tie up the bracket. Screw on the encoder via the three bores.

The separately arranged sensor and positioning element inhibit that compensating currents or damaging mechanical loads are transmitted via the shaft to the sensor. In addition, the encoder remains tight and highly protected during its entire lifespan.

The accessories enclosed in the delivery help to mount encoder and positioning element at an optimal distance from each other. LEDs indicate the switching status.

Status display via LED

green steady:

Optimal sensor supply

yellow steady:

Positioning element has reached the end of the measuring range. This is indicated by a lower signal quality.

yellow flashing:

Positioning element is outside the measuring range.

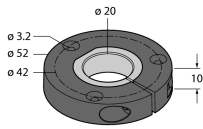
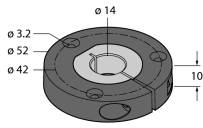
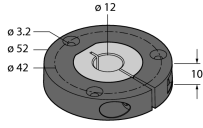
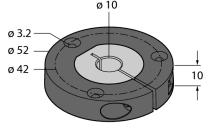
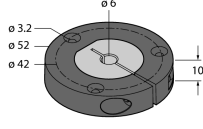
off:

Positioning element is in the measuring range.

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Accessories

Type code	Ident-No.	Description	
P1-RI-QR24	1590921	Positioning element, for Ø 20 mm shafts	
P2-RI-QR24	1590922	Positioning element, for Ø 14 mm shafts	
P3-RI-QR24	1590923	Positioning element, for Ø 12 mm shafts	
P4-RI-QR24	1590924	Positioning element, for Ø 10 mm shafts	
P5-RI-QR24	1590925	Positioning element, for Ø 6 mm shafts	

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Accessories

Type code	Ident-No.	Description	
P6-RI-QR24	1590926	Positioning element, for Ø 3/8" shafts	
P7-RI-QR24	1590927	Positioning element, for Ø 1/4" shafts	
P9-RI-QR24	1593012	Positioning element for installation on Ø 1/2" shafts	
P10-RI-QR24	1593013	Positioning element for installation on Ø 5/8" shafts	
P11-RI-QR24	1593014	Positioning element for installation on Ø 3/4" shafts	

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Accessories

Type code	Ident-No.	Description	
P8-RI-QR24	1590916	Positioning element with blanking plug for large shafts	
M1-QR24	1590920	Aluminium protecting ring, for inductive encoders Ri-QR24	
PE1-QR24	1590937	Positioning element without adapter sleeve	
RA1-QR24	1590928	Adapter sleeve, for Ø 20 mm shafts	
RA2-QR24	1590929	Adapter sleeve, for Ø 14 mm shafts	

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Accessories

Type code	Ident-No.	Description	
RA3-QR24	1590930	Adapter sleeve, for Ø 12 mm shafts	
RA4-QR24	1590931	Adapter sleeve, for Ø 10 mm shafts	
RA5-QR24	1590932	Adapter sleeve, for Ø 6 mm shafts	
RA6-QR24	1590933	Adapter sleeve, for Ø 3/8" shafts	
RA7-QR24	1590934	Adapter sleeve, for Ø 1/4" shafts	

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Accessories

Type code	Ident-No.	Description	
RA9-QR24	1590960	Adapter sleeve, for Ø 1/2" shafts	
RA10-QR24	1590961	Adapter sleeve, for Ø 5/8" shafts	
RA11-QR24	1590962	Adapter sleeve, for Ø 3/4" shafts	
RA8-QR24	1590959	Plug for Cu mounting option (reducing sleeves)	
SP1-QR24	1590938	Shield Ø 74 mm, aluminium	

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Accessories

Type code	Ident-No.	Description	
SP2-QR24	1590939	Shield Ø 74 mm, aluminium, with borehole for shaft feedthrough	
SP3-QR24	1590958	Shield Ø 52 mm, aluminium	
MT-QR24	1590935	Mounting aid for optimal alignment of positioning element	
RKC4T-2/TXL	6625500	Connection cable, female M12, straight, 3-pin, cable length: 2 m, sheath material: PUR, black; cULus approval; other cable lengths and qualities available, see www.turck.com	