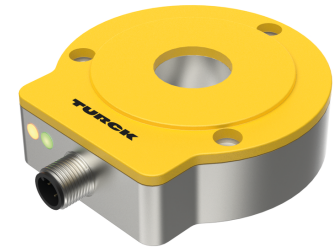
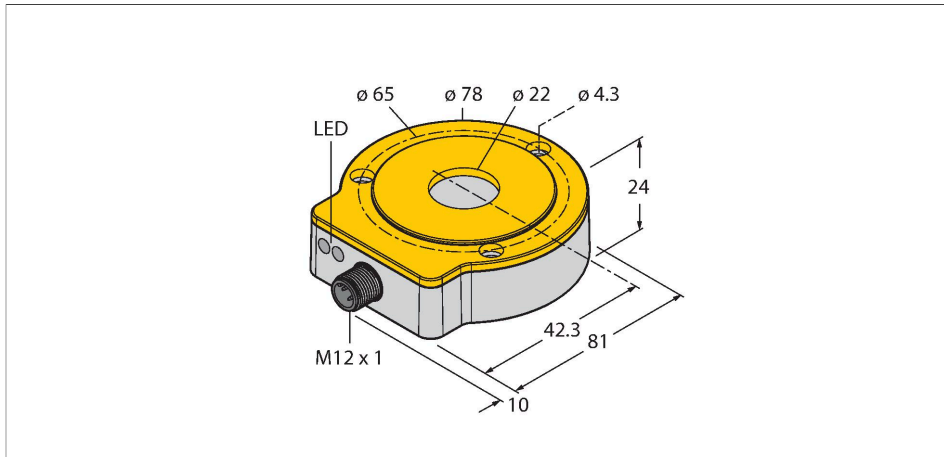


RI360P0-QR24M0-IOLX2-H1141

Contactless Encoder – IO-Link Premium Line



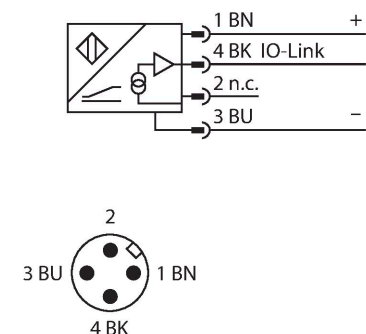
Technical data

Type	RI360P0-QR24M0-IOLX2-H1141
ID	1590975
Measuring principle	Inductive
General data	
Max. Rotational Speed	800 rpm
	Determined with standardized construction, with a steel shaft \varnothing 20 mm, L = 50 mm and reducer \varnothing 20 mm
Starting torque shaft load (radial / axial)	not applicable, because of contactless measuring principle
Measuring range	0...360 °
Nominal distance	1.5 mm
Repeat accuracy	≤ 0.01 % of full scale
Linearity deviation	≤ 0.05 % f.s.
Temperature drift	$\leq \pm 0.003$ % / K
Output type	Absolute semi-multiturn
Resolution singleturn	16 bit/65,536 units per revolution
Resolution multiturn	13 bit/8192 revolutions
Number of diagnostic bits	3 Bit
Electrical data	
Operating voltage	15...30 VDC
Residual ripple	≤ 10 % U_{ss}
Isolation test voltage	≤ 0.5 kV
Wire breakage/Reverse polarity protection	yes (voltage supply)

Features

- 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 multiturn
- 13 bits multiturn
- 15...30 VDC
- M12 × 1 male connector, 4-pin

Wiring diagram



Functional principle

The measuring principle of inductive encoders is based on oscillation circuit coupling between the positioning element and the

Technical data

Communication protocol	IO-Link
Sample rate	1000 Hz
Current consumption	< 50 mA
IO-Link	
IO-Link specification	V 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
Included in the SIDI GSDML	Yes
Mechanical data	
Design	QR24
Dimensions	81 x 78 x 24 mm
Flange type	Flange without mounting element
Shaft Type	Hollow shaft
Shaft diameter D [mm]	6 6.35 9.525 10 12 12.7 14 15.875 19.05 20
Housing material	Metal/plastic, ZnAlCu1/PBT-GF30-V0
Electrical connection	Connector, M12 × 1
Environmental conditions	
Ambient temperature	-25...+85 °C
	Acc. to UL approval to +70 °C
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 sine; 3 × each; 3 axes
Continuous shock resistance (EN 60068-2-29)	40 g; 6 ms ½ sine; 4000 × each; 3 axes
Protection class	IP68 IP69K
MTTF	138 years acc. to SN 29500 (Ed. 99) 40 °C
Power-on indication	LED, Green
Measuring range display	LED, yellow, yellow flashing

sensor, whereby an output signal is provided proportional to the angle of the positioning element. Turck refers to semi-multiturn because the multiturn process data is calculated internally from the number of single-turn zero passes. Because the sensor does not detect any revolutions when not supplied with power, the plausibility of the multiturn process data is indicated by a diagnostic bit. The rugged sensors are maintenance- and wear-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 high immunity to electromagnetic DC and AC fields.

Technical data

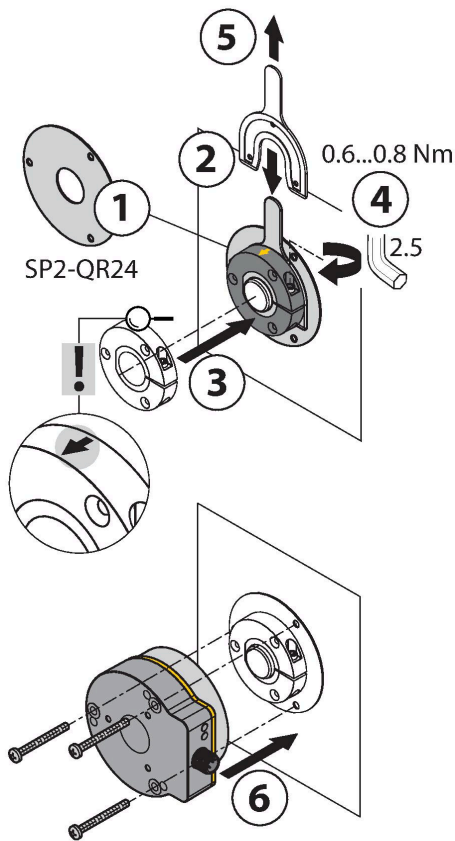
Included in delivery

MT-QR24 mounting aid

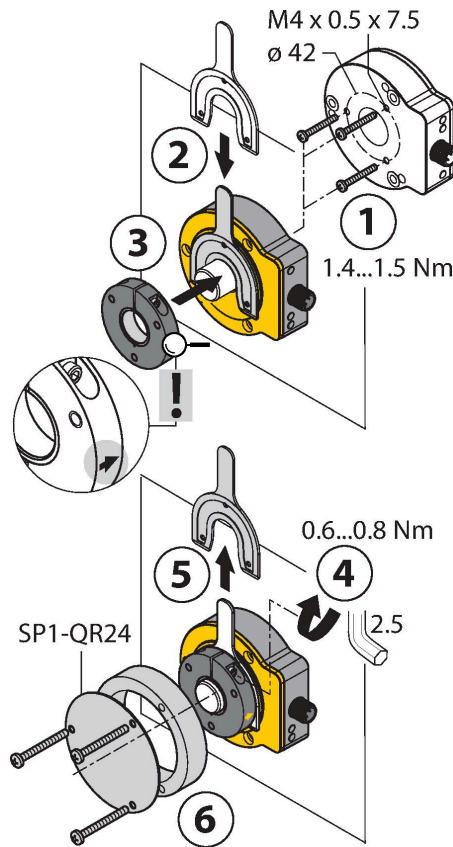
Mounting instructions

Mounting instructions/Description

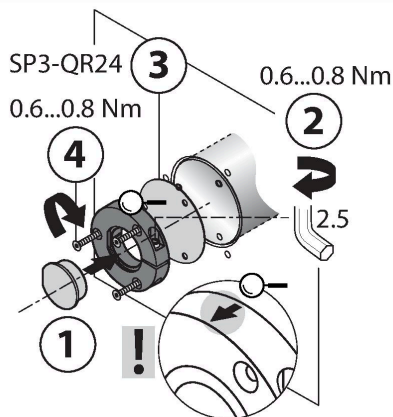
A



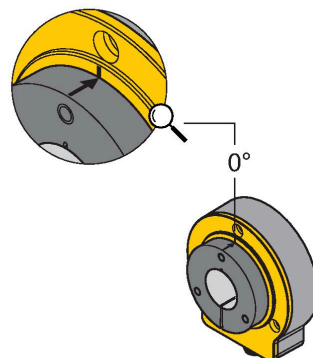
B



C



Default: 0°



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 side 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.

Accessories

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

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

P8-RI-QR24 1590916
 Positioning element with blanking plug for large shafts

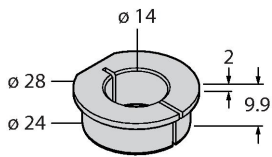
M1-QR24 1590920
 Aluminum protecting ring, for inductive encoders RI-QR24

PE1-QR24 1590937
 Positioning element without adapter sleeve

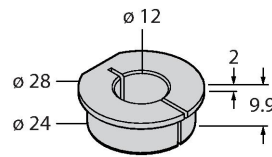
RA1-QR24 1590928
 Adapter sleeve, for Ø 20 mm shafts

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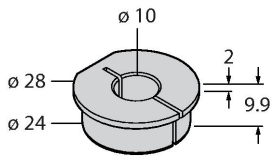
RA2-QR24 1590929 Adapter sleeve, for Ø 14 mm shafts



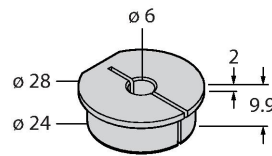
RA3-QR24 1590930 Adapter sleeve, for Ø 12 mm shafts



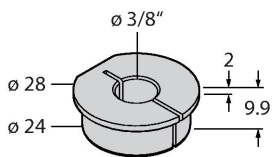
RA4-QR24 1590931 Adapter sleeve, for Ø 10 mm shafts



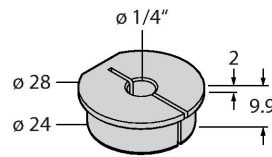
RA5-QR24 1590932 Adapter sleeve, for Ø 6 mm shafts



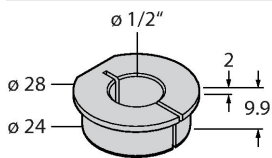
RA6-QR24 1590933 Adapter sleeve, for Ø 3/8" shafts



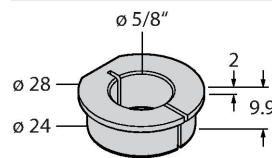
RA7-QR24 1590934 Adapter sleeve, for Ø 1/4" shafts



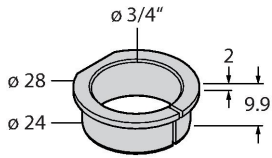
RA9-QR24 1590960 Adapter sleeve, for Ø 1/2" shafts



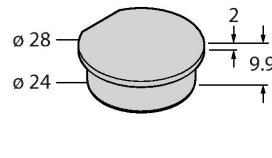
RA10-QR24 1590961 Adapter sleeve, for Ø 5/8" shafts



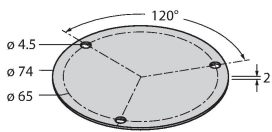
RA11-QR24 1590962 Adapter sleeve, for Ø 3/4" shafts



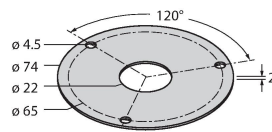
RA8-QR24 1590959 Plug for mounting option C



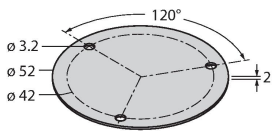
SP1-QR24 1590938 Shield plate Ø 74 mm, aluminium



SP2-QR24 1590939 Shield plate Ø 74 mm, aluminium, with borehole for shaft feedthrough



SP3-QR24 1590958 Shield plate Ø 52 mm, aluminium



MT-QR24 1590935 Mounting aid for optimal alignment of positioning element

