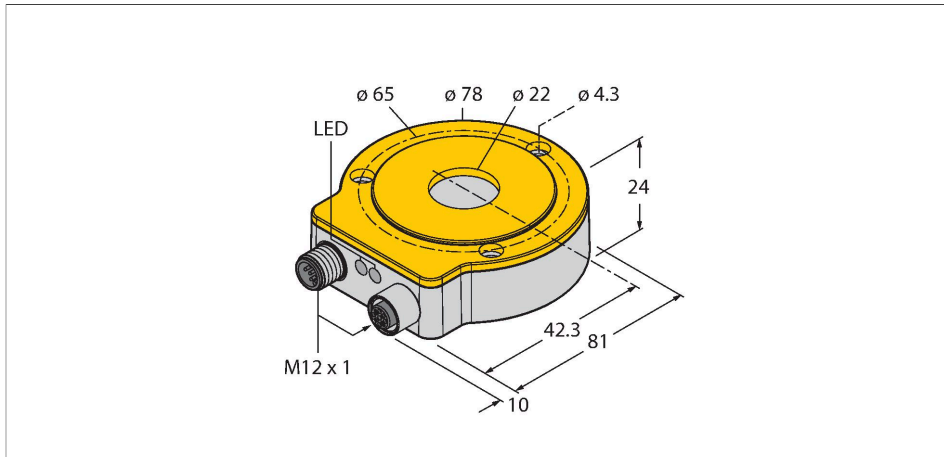


RI360P0-QR24M0-CNX4-2H1150

Contactless Encoder – CANopen

Premium Line



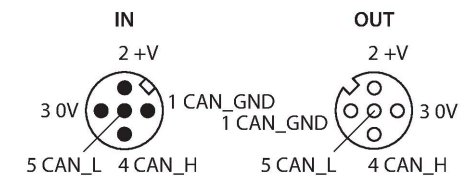
Features

- Compact, rugged housing
- Many mounting possibilities
- Status displayed via LED
- Positioning element and aluminium ring not incl.
- CANopen interface
- Baud rate 10 kbps up to 1 Mbps; Factory setting: 125 kbps
- Node address 1 to 127; Factory setting 3
- Terminating resistor switched in via CANopen device access
- Immune to electromagnetic interference
- 10 ... 30 VDC
- M12 x 1 male, 5-pin, CAN in, CAN out
- Acc. to CiA DS-301, CiA 305, CiA 406

Technical data

Type	RI360P0-QR24M0-CNX4-2H1150
Ident. no.	1590914
Measuring principle	Inductive
Max. Rotational Speed	2000 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
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	10...30 VDC
Residual ripple	≤ 10 % U _{ss}
Isolation test voltage	≤ 0.5 kV
Wire breakage/Reverse polarity protection	yes (voltage supply)
Output type	Absolute singleturn
Resolution singleturn	16 Bit
Communication protocol	CANopen
Interface	CANopen, DS406 device profile, LSS DS 305

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.

RI360P0-QR24M0-CNX4-2H1150 | 12/03/2020 06:55 | technical changes reserved

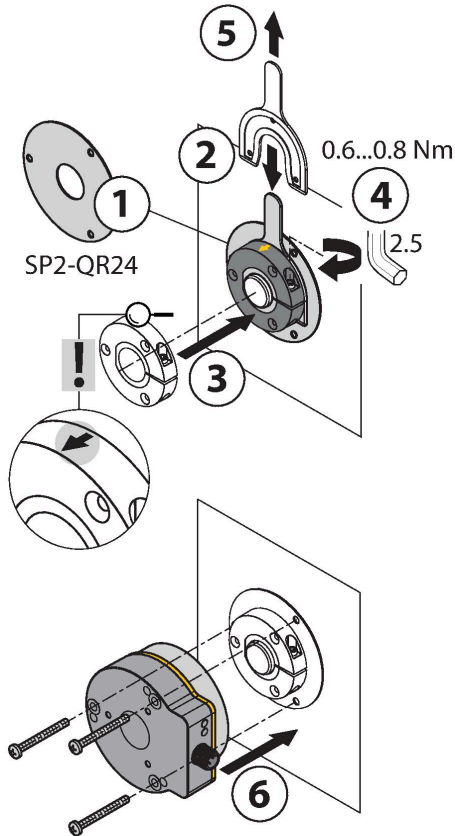
Technical data

Node ID	1...127; Werkseinstellung: 3
Baud rate	10, 20, 50, 125, 250, 500, 800 and 125 kbps, factory setting 125 kbps
Sample rate	800 Hz
Current consumption	< 60 mA
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
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
Power-on indication	LED, Green
Status CANopen	grün/rot
Measuring range display	LED, yellow, yellow flashing
Included in delivery	Mounting aid MT-QR24, closure cap VZ 3

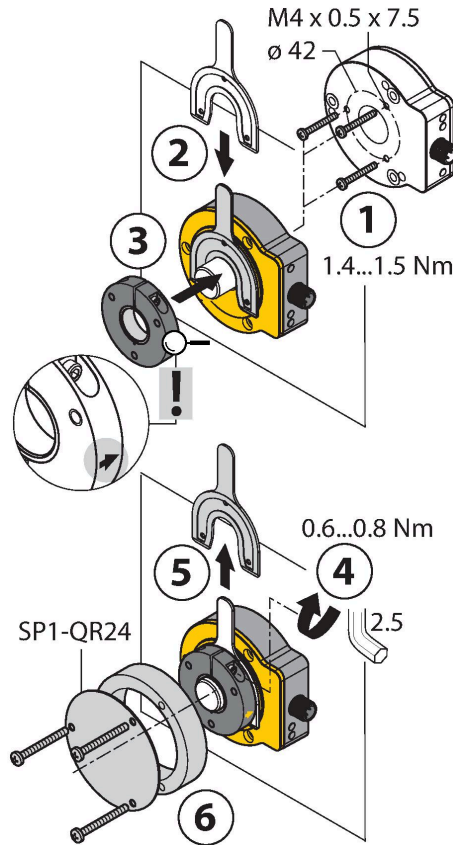
Mounting instructions

Mounting instructions/Description

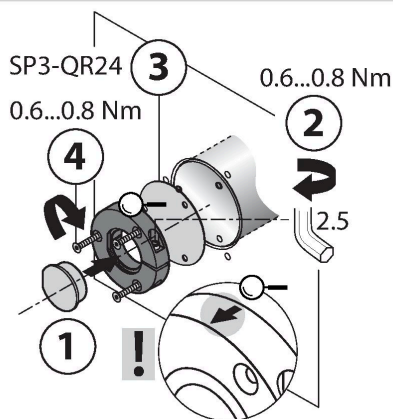
A



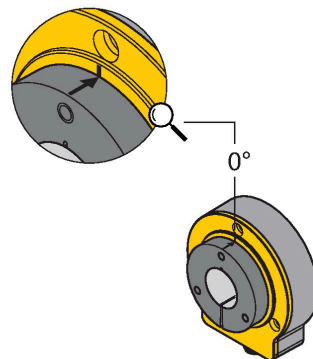
B



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 encoder is immune to magnetized metal splinters and other interferences.

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

Mounting option A:

First, interconnect positioning element and rotatable shaft with the bracket. 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 screwed on a rotating machine part and not to a shaft, you must first put on the dummy plug RA8-QR24. Then tie up the bracket. Screw on the encoder via the three bores.

When mounting, ensure that the positioning element is correctly aligned towards the sensor's active face. For correct fitting see arrow on the edge of the positioning element. (Arrow must point in direction of sensor)

Due to the separate installation of positioning element and sensor no electrical currents or harmful mechanical forces are transmitted via the shaft to the sensor. The encoder also offers a high degree of protection for life and stays permanently sealed.

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. Optionally, you can use the shield plates which are included in the accessories to increase the allowed distance between positioning element and sensor.

Status / Power LED:

Green:

Sensor is properly supplied, positioning element in the coverage

Yellow:

Positioning element is in the measuring range, signal low (e.g. distance too large)

Yellow flashing:

Positioning element is outside the coverage

Status CAN

Green / Red: CAN communication active / not active

Red / Green alternating: LSS services active

Green flashing: Pre-operational state

Green 1 x flashing: CAN communication stopped

Red 2 x flashing: Error control event

Red 3 x flashing: Sync Error

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

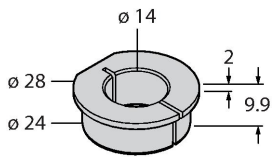
P8-RI-QR24 1590916
 Positioning element with blanking plug for large shafts

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

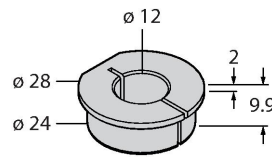
PE1-QR24 1590937
 Positioning element without adapter sleeve

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

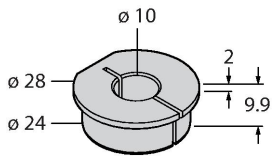
RA2-QR24 1590929 Adapter sleeve, for Ø 14 mm shafts



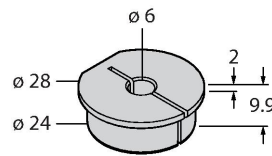
RA3-QR24 1590930 Adapter sleeve, for Ø 12 mm shafts



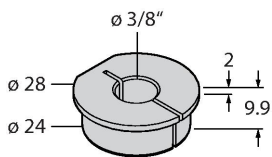
RA4-QR24 1590931 Adapter sleeve, for Ø 10 mm shafts



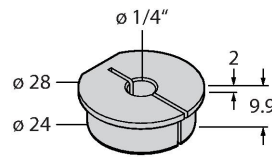
RA5-QR24 1590932 Adapter sleeve, for Ø 6 mm shafts



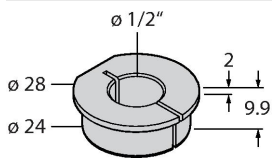
RA6-QR24 1590933 Adapter sleeve, for Ø 3/8" shafts



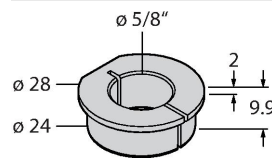
RA7-QR24 1590934 Adapter sleeve, for Ø 1/4" shafts



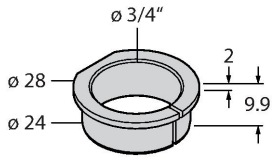
RA9-QR24 1590960 Adapter sleeve, for Ø 1/2" shafts



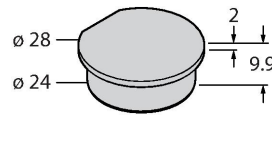
RA10-QR24 1590961 Adapter sleeve, for Ø 5/8" shafts



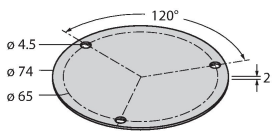
RA11-QR24 1590962 Adapter sleeve, for Ø 3/4" shafts



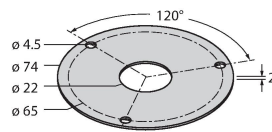
RA8-QR24 1590959 Plug for mounting option C



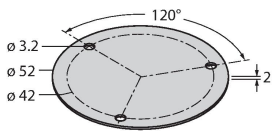
SP1-QR24 1590938 Shield plate Ø 74 mm, aluminium



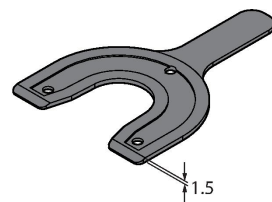
SP2-QR24 1590939 Shield plate Ø 74 mm, aluminium, with borehole for shaft feedthrough



SP3-QR24 1590958 Shield plate Ø 52 mm, aluminium



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



Wiring accessories

Dimension drawing	Type	Ident. no.	Description
	RKC5701-5M	6931034	Bus cable for CAN (DeviceNet, - CANopen), M12 coupling, straight, cable length: 5m, jacket material: PUR, anthracite; cULus approval; other cable lengths and qualities available, see www.turck.com