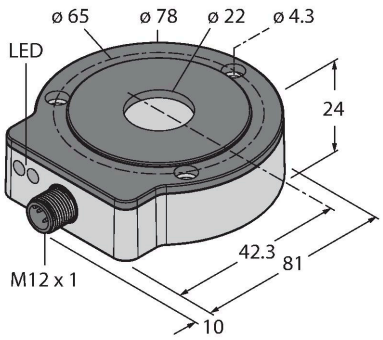
RI360P0-EQR24M0-INCRX2-H1181
Contactless Encoder with Stainless Steel Housing – Incremental: 1 … 5000 ppr
Premium Line



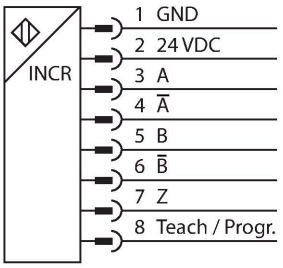
Technical data

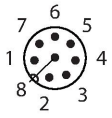
Type	RI360P0-EQR24M0-INCRX2-H1181
Ident. no.	1590912
Measuring principle	Inductive
Max. Rotational Speed	10000 rpm
	Determined with standardized construction, with a steel shaft Ø 20 mm, L = 50 mm and reducer Ø 20 mm
Starting torque shaft load (radial / axial)	not applicable, because of contactless measuring principle
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
Short-circuit protection	yes / Cyclic
Wire breakage/Reverse polarity protection	yes / yes (voltage supply)
Output type	Incremental
Resolution, incremental	1024 ppr
Pulse frequency max.	200 kHz
Signal level high	min. U_B - 2 V
Signal level low	max. 2.0 V
Output function	8-pin, Push-Pull/HTL
Sample rate	1000 Hz

Features

- Compact, rugged housing
- Active face, plastic PA12-GF30
- Housing, stainless steel V4A (1.4404)
- Status displayed via LED
- Immune to electromagnetic interference
- 1024 pulses per revolution (default)
- 360, 512, 1000, 1024, 2048, 2500, 3600, 4096, parametr. via Easy-Teach
- Free parametrization of the pulse number in the range from 1 to 5000 via PACT*ware*™
- Position of z-track set via Easy-Teach
- Burst function, absolute angular position output incrementally per Easy-Teach pulse
- 10…30 VDC
- Male M12 x 1, 8-pin
- Push-pull A, B, Z, A (inverse), B (inverse)

Wiring diagram



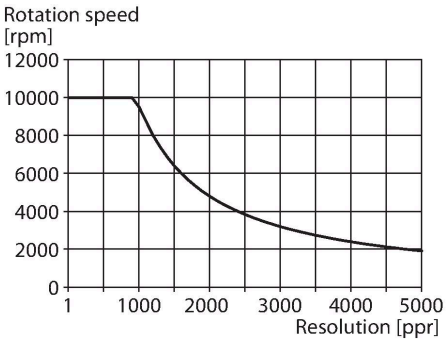


Functional principle

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.

Technical data

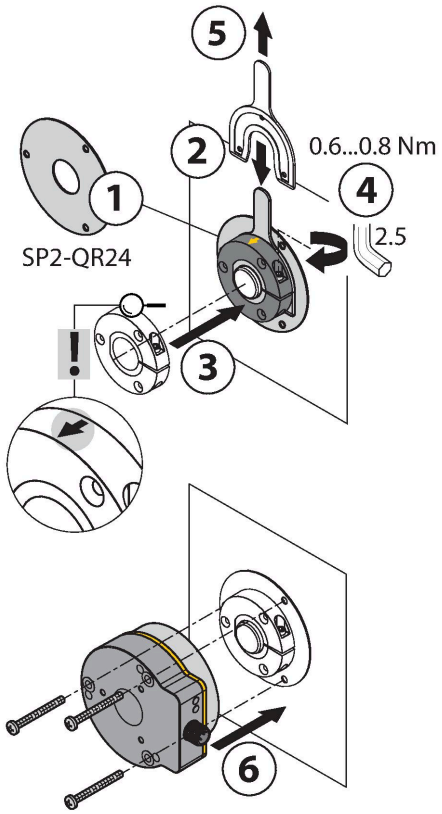
Current consumption	< 100 mA
Design	EQR24
Dimensions	81 x 78 x 24 mm
Flange type	Flange without mounting element
Shaft Type	Hollow shaft
Shaft diameter D [mm]	6 6.35 9.525 10 12 12.7 14 15.875 19.05 20
Housing material	Stainless-steel/Plastic, V4A (1.4404)/PA12-GF30
Electrical connection	Connectors, 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; 3 x each; 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
Measuring range display	LED, yellow, yellow flashing
Included in delivery	Adapter sleeve MT-QR24



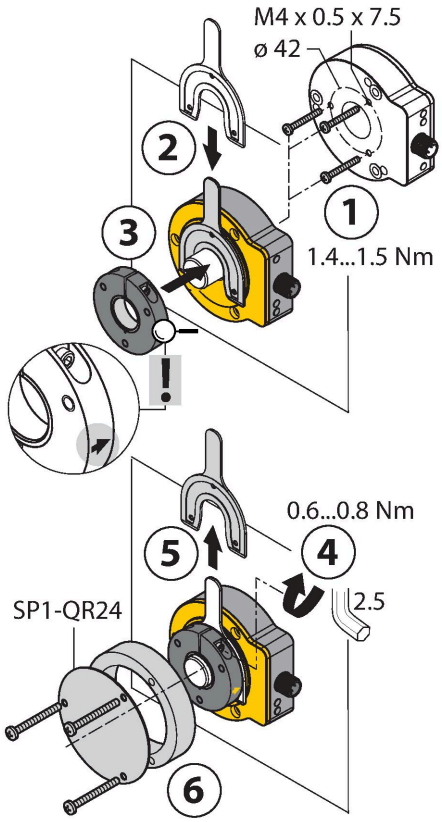
Mounting instructions

Mounting instructions/Description

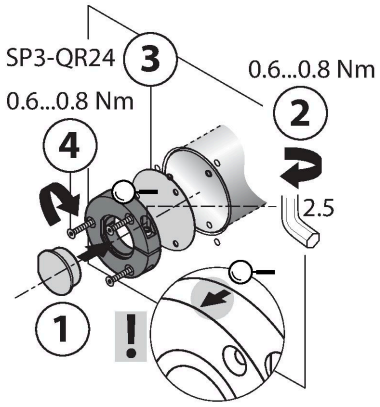
A



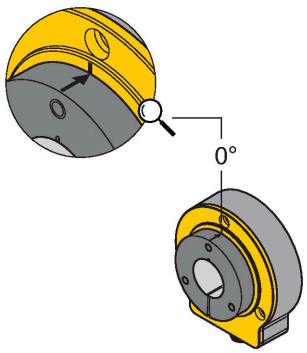
B



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 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 and not on a shaft, install first the dummy plug RA8-QR24. 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. Optionally, you can use the shields which are included in the accessories to increase the allowed distance between positioning element and sensor.

Status display via LED
green steady:
Sensor is operative
yellow steady:
Positioning element has reached the end of the measuring range. This is indicated by a weaker signal.
yellow flashing:
Positioning element is outside the measuring range.
off:
Positioning element is in the measuring range

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Individual Parameterization (Teaching with Positioning Element)

Jumper between teach input Pin 8	Gnd Pin 1	Ub Pin 2	LED
2 s	Z-track zero point teaching	One-time triggering of burst function	Status LED flashes then turns steady after 2 s
10 s	CCW rotation direction	CW rotation direction	After 10 s status LED flashes fast for 2 s
15 s	-	Factory setting (z-track, CW)	After 15 s power and status LED alternate

To avoid unintended teaching, keep pin 8 potential-free.

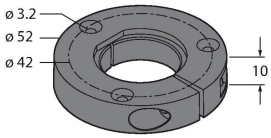
Preset Programming Mode (Teaching without Positioning Element)

Jumper between teach input Pin 8	Gnd Pin 1	Ub Pin 2	LED
	2 s Resolution setting mode active for 10 s	2 s Resolution setting mode active for 10 s	Status LED steady, flashes after 2 s as long as selection mode is active
360 pulses/360°	Start value		1 x flashing
512 pulses/360°	Press once		2 x flashing
1000 pulses/360°	Press twice		3 x flashing
1024 pulses/360°	Press three times		4 x flashing
2048 pulses/360°	Press four times		5 x flashing
2500 pulses/360°		Start value	1 x flashing
3600 pulses/360°		Press once	2 x flashing
4096 pulses/360°		Press twice	3 x flashing
5000 pulses/360°		Press three times	4 x flashing

To avoid unintended teaching, keep pin 8 potential-free.

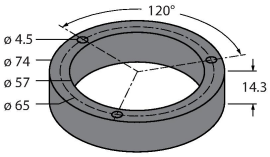
Accessories

PE1-EQR24 **1590966**



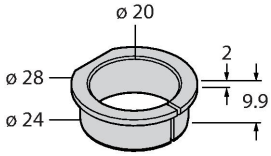
Positioning element with stainless steel compression fitting, without adapter sleeve

M5-QR24 **1590965**



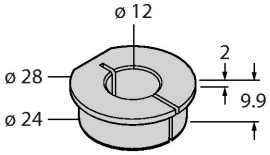
Plastic protecting ring for encoders RI-EQR24

RA1-EQR24 **1593019**



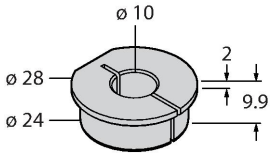
Stainless steel adapter sleeve, for Ø 20 mm shafts

RA3-EQR24 **1593020**



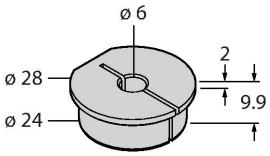
Stainless steel adapter sleeve, for Ø 12 mm shafts

RA4-EQR24 **1593023**



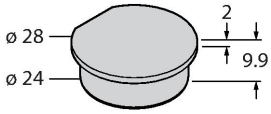
Stainless steel adapter sleeve, for Ø 10 mm shafts

RA5-EQR24 **100000375**



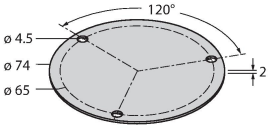
Stainless steel adapter sleeve, for Ø 6 mm shafts

RA8-EQR24 **100000289**



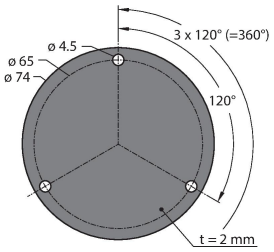
Stainless steel plug for mounting option C

SP1-EQR24 **1590979**



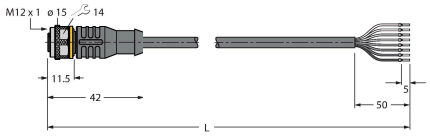
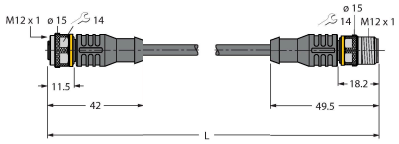
Shield plate Ø 74 mm, stainless steel

SP5-QR24	100003689

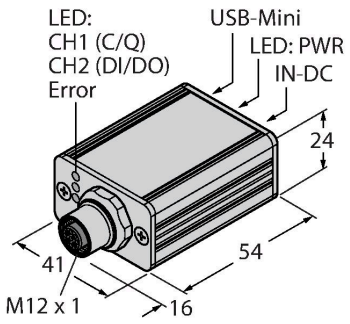


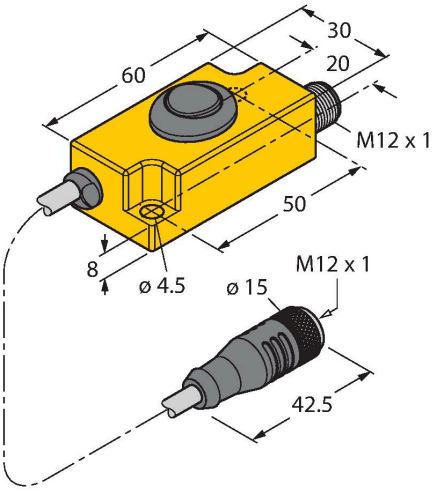
Protective plate Ø 74 mm, plastic

Accessories

Dimension drawing	Type	Ident. no.	
	**RKCV8T-2/TFW**	**6934668**	Connection cable, M12 coupling, straight, 8-pin, stainless steel coupling nut, cable length: 2 m, sheath material: PP-EPDM, white; other cable lengths and variants available, see www.turck.com
	**RKC8T-2/TXL**	**6625142**	Connection cable, female M12, straight, 8-pin, cable length: 2 m, sheath material: PUR, black; cULus approval; other cable lengths and qualities available, see www.turck.com
	**RKC8.302T-1.5-RSC4T/TXL320**	**6625003**	Adapter cable to connect sensor to USB-2-IOL-0002 parametrizing unit; female M12, straight, 8-pin on male M12, straigth, 3-pin; cable length: 1.5 m; sheath material: PUR, sheath color: black, cULus approved; RoHS conform; protection class IP67

Accessories

Dimension drawing	Type	Ident. no.	
	**USB-2-IOL-0002**	**6825482**	IO-Link Master with integrated USB port

Dimension drawing	Type	Ident. no.	
	**TX2-Q20L60**	**6967117**	Teach adapter for inductive encoders with 8-pin male M12 x 1, for simple programming via Easy Teach

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