

RI360P0-EQR24M0-2500X2-H1181 Contactless Encoder with Stainless Steel Housing – Incremental: 2500 ppr Premium Line





Technical data

Туре	RI360P0-EQR24M0-2500X2-H1181	
ID	100020402	
Measuring principle	Inductive	
General data		
Max. rotational speed	4000 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	
Output type	Incremental	
Resolution incremental	2500 ppr	
Electrical data		
Operating voltage U _B	1030 VDC	
	≤ 10 % U _{Bmax}	
Isolation test voltage	0.5 kV	
Short-circuit protection	yes/Cyclic	
Wire break/reverse polarity protection	yes/yes (voltage supply)	
Pulse frequency max.	200 kHz	

Features

- Compact, rugged housing
- Active face, plastic PA12-GF30
- Housing, stainless steel V4A (1.4404)
- Status displayed via LED
- Immune to electromagnetic interference
- Position of z-track can be set via Easy-Teach
 Burst function, absolute angular position
- output incrementally via Easy-Teach pulse 10...30 VDC
- Male M12 x 1, 8-pin
- Push-pull A, B, Z, A (inverse), B (inverse)

Wiring diagram







Technical data

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	
Current consumption	< 100 mA	
Mechanical data		
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, 1.4404 (AISI 316L)/ PA12-GF30	
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; 103000 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	
Included in delivery	Adapter sleeve MT-QR24	
UL certificate	E210608	

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.



Mounting instructions



The extensive range of mounting accessories enables easy adaptation to many different shaft diameters. Due to the measuring principle, which is based on the functional principle of an RLC coupling, the encoder is immune to magnetized ferrous chips and other interferences. As a result, there are few possible causes of error during mounting. The adjacent figures show the simple installation of the two separate units: the sensor element and the positioning element: Mounting option A:

First, connect the positioning element to the rotatable shaft using the bracket. Then place the encoder with the aluminum ring above the rotating part in such a way that you get a closed and protected unit. Mounting option B:

Slide the encoder backward onto the shaft and fasten it to the machine. Then fasten the positioning element to the shaft using the bracket.

Mounting option C:

If the positioning element is screwed onto a rotating machine part rather than being put on a shaft, you must first insert the dummy plug RA8-QR24. Then tighten the bracket. Next. mount the encoder via the three bores.

the encoder via the three bores. Due to the separate installation of positioning element and sensor, no electrical currents or harmful mechanical forces are transmitted to the sensor via the shaft. The encoder also offers a high degree of protection throughout its service life and stays permanently sealed. During commissioning, the accessories included in the delivery help to mount the encoder and the positioning element at an optimal distance from each other. In addition, LEDs indicate the status. Optionally, you can use the shield plates included in the accessories to increase the permitted distance between the positioning element and the sensor. Status display via LED Green: Sensor is being supplied properly Yellow: Positioning element is within the measuring range, low signal quality (e.g. distance too great) Yellow flashing: Positioning element is outside the detection range Off: Positioning element is within the measuring range Due to the separate installation of positioning



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.

Accessories



TURCK Inc. | 3000 Campus Drive Minneapolis, MN 55441-2656 | Phone: 763-553-7300 | Application Support: 1-800-544-7769 | Fax 763-553-0708 | www.turck.com





Wiring accessories



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