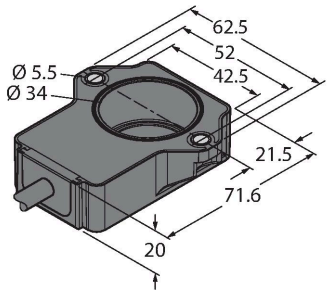
RI240P2-QR20-LI2X2
Miniature Encoder – With Analog Output
Premium Line



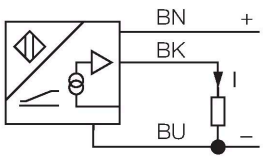
Technical data

Type	RI240P2-QR20-LI2X2
ID	100004586
Measuring principle	Inductive
General data	
Starting torque shaft load (radial / axial)	Not applicable because of contactless measuring principle
Resolution	0.09°
Measuring range	-120…120 °
Nominal distance	1 mm
Repeat accuracy	≤ 0.0375 % of full scale
Linearity deviation	≤ 0.9 % f.s.
Temperature drift	≤ ± 0.03 %/K
Output type	Absolute singleturn
Electrical data	
Operating voltage U_B	15…30 VDC
Ripple U_{ss}	≤ 10 % U_{Bmax}
Isolation test voltage	0.5 kV
Short-circuit protection	yes
Wire break/reverse polarity protection	yes/Complete
Output function	3-wire, Analog output
Current output	4…20 mA
Diagnostic	Positioning element not detected: Output signal 22 mA (typ.)

Features

- Rectangular, plastic
- Compact and robust housing
- Versatile mounting possibilities
- Positioning element P2-RI-QR20 included in delivery
- High protection class IP68/IP69K
- Protection against salt spray
- Measuring range displayed via LED
- Immune to electromagnetic interference
- 0.09° resolution
- 3-wire, 15…30 VDC
- Analog output 4…20 mA
- Output 22 mA (typ.) where there is no RLC coupling
- Cable length 2m

Wiring diagram



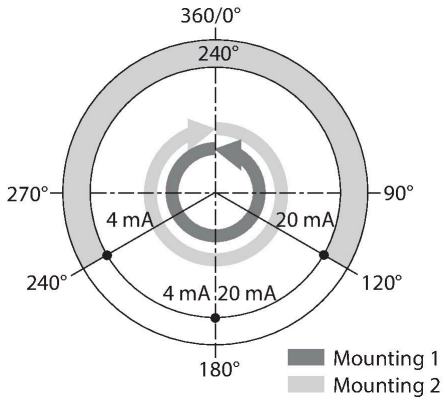
Functional principle

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

Technical data

Load resistance current output	≤ 0.4 kΩ
Sample rate	500 Hz
Current consumption	< 100 mA
Mechanical data	
Design	Rectangular, QR20
Dimensions	71.6 x 62.6 x 20 mm
Flange type	Flange without mounting element
Shaft Type	Blind hole shaft
Shaft diameter D (mm)	6 6.35
Housing material	Plastic, Ultem
Electrical connection	Cable
Cable quality	Ø 5.2 mm, Lif32Y32Y, TPE, 2 m
Core cross-section	3 x 0.5 mm²
Environmental conditions	
Ambient temperature	-40…+70 °C
Storage temperature	-40…+125 °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
Salt spray test (EN 60068-2-52)	Severity degree 5 (4 test cycles)
Protection class	IP68 IP69K
MTTF	348 years acc. to SN 29500 (Ed. 99) 40 °C
Power-on indication	LED, Green
Measuring range display	multifunction LED, green green flashing
Included in delivery	Positioning element P2-RI-QR20; for technical details see data sheet

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.



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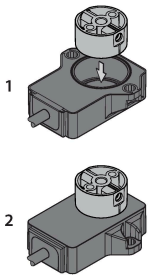
Mounting instructions

Mounting instructions/Description



There are two different mounting options. One option is to position the positioning element above the sensor housing. However, it can also be mounted so that the sensor housing completely encloses the positioning element.

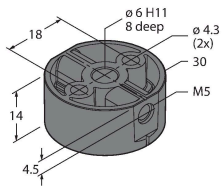
LED function
Operating voltage
Green:Power on
Displayed measuring range
Green:Positioning element is in the detection range
Green flashing:Positioning element is within the measuring range, low signal intensity (e.g. distance too large)
Off:Positioning element is outside the detection range

Inductive measuring principle provides more safety
Due to the measuring principle, which is based on the functional principle of an RLC coupling, the sensor operates absolutely wear-free and is immune to magnetized ironware and other interferences. The amplitude of the signal can be changed by metal parts, which in turn affects the accuracy.
Owing to the differential analysis, the output signal remains almost unchanged, even if the position of the positioning element deviates from the ideal axis of rotation. The distance between the sensor and the positioning element can be up to 5 mm, whereby the nominal distance is 1 mm.

Accessories

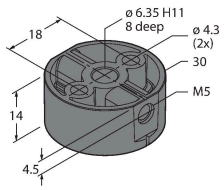
P1-RI-QR20	1593041

Positioning element for encoder RI-QR20, for Ø 6 mm shafts



P2-RI-QR20	1593042

Positioning element for encoder RI-QR20, for Ø 6.35 mm shafts



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