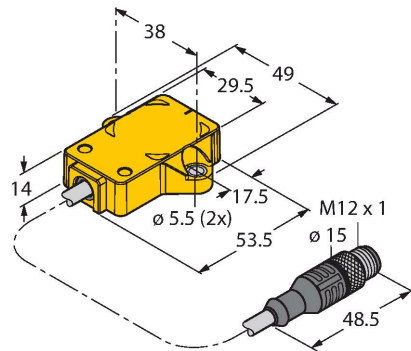


RI45P1-QR14-LIU5X2-0.3-RS4

Inductive Angle Sensor – With Analog Output

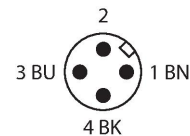
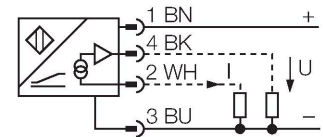
Premium Line



Features

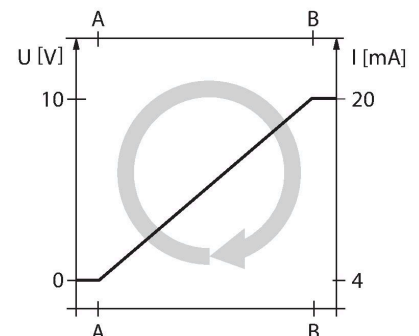
- Rectangular, plastic
- Many mounting possibilities
- P1-Ri-QR14 included in delivery
- Measuring range displayed via LED
- Immune to electromagnetic interference
- Resolution, 12-bit
- 4-wire, 15...30 VDC
- Analog output
- 0...10 V and 4...20 mA
- Cable with male end M12 x 1

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

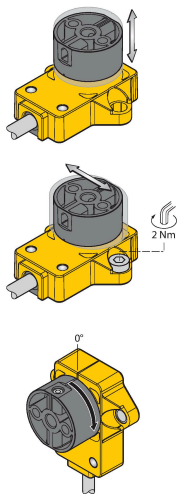
Type	RI45P1-QR14-LIU5X2-0.3-RS4
Ident. no.	1590842
Measuring principle	Inductive
Starting torque shaft load (radial / axial)	Not applicable because of contactless measuring principle
Resolution	0.09°
Measuring range	0...45°
Nominal distance	1.5 mm
Linearity deviation	≤ 0.3 %f.s.
Temperature drift	≤ ± 0.01 % / K
Ambient temperature	-25...+70 °C
Operating voltage	15...30 VDC
Residual ripple	≤ 10 % U _{ss}
Isolation test voltage	≤ 0.5 kV
Short-circuit protection	yes
Wire breakage/Reverse polarity protection	yes / yes (voltage supply)
Output function	4-wire, Analog output
Output type	absolute singleturn
Voltage output	0...10 V
Current output	4...20 mA
Load resistance voltage output	≥ 4.7 kΩ
Load resistance, current output	≤ 0.4 kΩ
Sample rate	500 Hz
Current consumption	< 100 mA
Design	Rectangular, QR14
Dimensions	53.5 x 49 x 14 mm

Technical data

Flange type	Flange without mounting element
Shaft Type	Blind hole shaft
Shaft diameter D (mm)	6 6.35
Housing material	Plastic, PBT-GF30-V0
Electrical connection	Cable with connector, M12 × 1
Cable quality	Ø 5.2 mm, Gray, LifYY, PVC, 0.3 m
Core cross-section	4 x 0.34 mm ²
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
Measuring range display	multifunction LED, green green flashing
Included in delivery	positioning element P1-Ri-QR14; for technical details see data sheet

Mounting instructions

Mounting instructions/Description



Adapter pins provide more flexibility
Extensive range of mounting accessories for easy adaptation to many different shaft diameters.

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

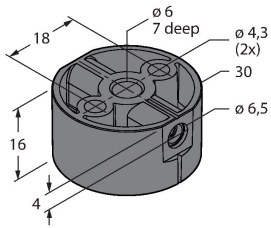
Functional safety through inductive measuring principle
Based on the functional principle of RLC coupling, the sensor operates absolutely wear-free and is immune to magnetized metal splinters and other interferences.
Owing to the differential analysis, the output signal remains almost unchanged, even 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 1.5mm.

Accessories

P1-RI-QR14

1590812

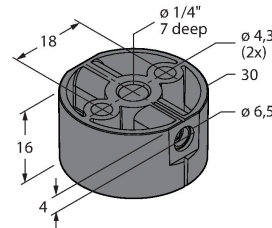
Positioning element for angle sensors RI-QR14



P2-RI-QR14

1590819

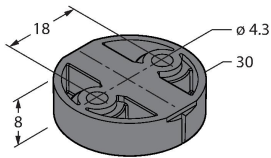
Positioning element for angle sensors RI-QR14



P3-RI-QR14

1590865

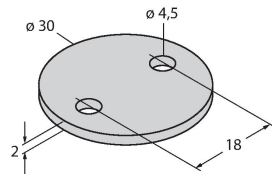
Positioning element for angle sensors RI-QR14, flat design, using shield plate SP1-QR14 is recommended



SP1-QR14

1590873

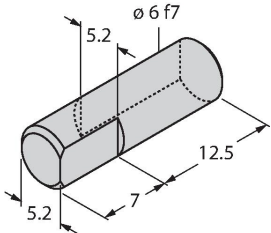
Shield plate Ø 30 mm, aluminium



HSA-M6-QR14

6901051

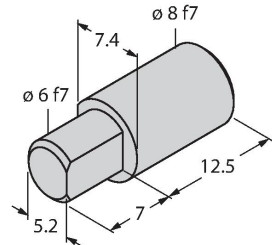
Adapter for RI-QR14 specific positioning elements, hollow on solid shaft, Ø 6 mm



HSA-M8-QR14

6901052

Adapter for RI-QR14 specific positioning elements, hollow on solid shaft, Ø 8 mm



DS-RI-QR14

1590814

Spacer sleeves for rear mounting of RI-QR14, 2 pcs. per bag

