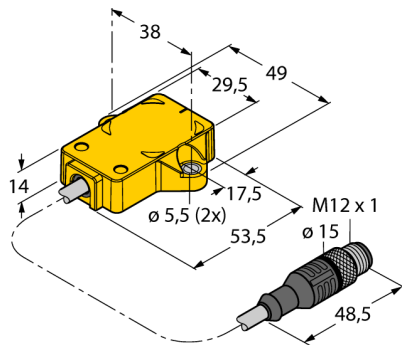


**Inductive angle sensor
with analog output**
Ri360P0-QR14-ELiU5X2-0,3-RS5/S1264



- Rectangular, plastic
- Compact, rugged housing
- Many mounting possibilities
- LED indicates measuring range
- Immune to electromagnetic interference
- Resolution, 12-bit
- Output signal returns to 0 V or rather 4 mA, provided the positioning element is outside the measuring range.
- 4-wire, 15...30 VDC
- Analog output
- Programmable measuring range
- 0...10 V and 4...20 mA
- Cable with male end M12 x 1

Type code Ri360P0-QR14-ELiU5X2-0,3-RS5/S1264
Ident-No. 1590871

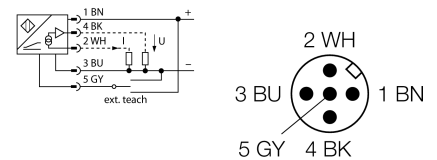
Resolution 12 bit
Measuring range 0...360°
Linearity deviation ≤ 0.3 %
Temperature drift ≤ ± 0.01 % / K
Ambient temperature -25...+70 °C

Operating voltage 15...30VDC
Residual ripple ≤ 10 % U_{ss}
Rated insulation voltage ≤ 0.5 kV
Short-circuit protection yes
Wire breakage / Reverse polarity protection yes/ yes (voltage supply)
Output function 4-wire, analog output
Voltage output 0...10V
Current output 4...20mA
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
Housing material plastic, PBT
Connection cable with connector, M12 x 1
Cable quality 5.2 mm, Lif9YH-11YH, PUR, 0.3 m
Flame retardant acc. to VDE 0472, part 804B
Cable cross section 5 x 0.34 mm²
Vibration resistance 55 Hz (1 mm)
Shock resistance (EN 60068-2-27) 30 g
Protection class IP67
MTTF 138 years acc. to SN 29500 (Ed. 99) 40 °C

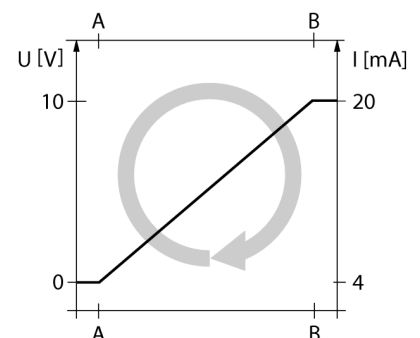
Power-on indication LED green
Measuring range display multifunction LED, green

Wiring diagram



Functional principle

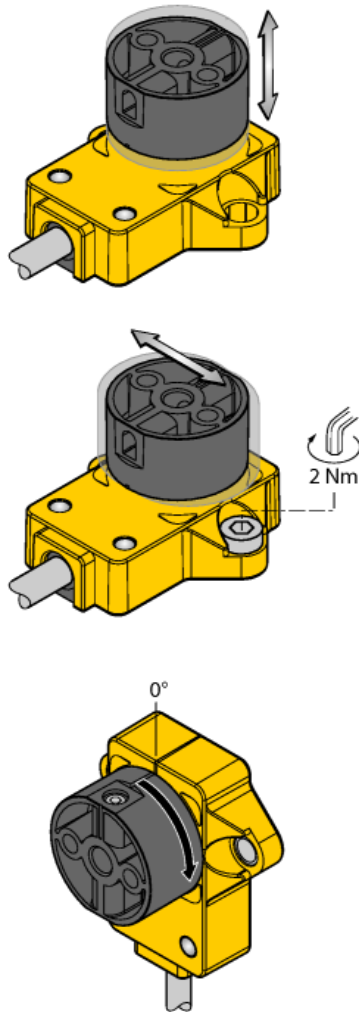
The measuring principle of inductive angle sensors is based on oscillation circuit coupling between the transducer and the sensor, whereby an output signal is provided proportional to the angle of the positioning element. The rugged sensors are wear and maintenance-free, thanks to the contactless operating principle. They convince through their excellent repeatability, resolution and linearity within a broad temperature range. Thanks to the innovative technology, electromagnetic AC and DC fields have no effects on the measured signal.



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Adapter pins provide more flexibility

Extensive range of mounting accessories for easy adaptation to many different shaft diameters.

LED function

Operating voltage

green steady: Power on

Measuring range

green steady: Positioning element is in the measuring range

green flashing: Positioning element has reached the end of the measuring range. This is indicated by a weaker signal.

off: Positioning element is outside the coverage.

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 mm.

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Teaching instructions

Individual (teaching with positioning element)

Jumper between teach input Pin 5 (GY)	Gnd Pin 3 (BU)	Ub Pin 1 (BN)	LED
2 seconds	start value	end value	status LED flashes, after 2 s steady
10 seconds	CCW rotation, then return to last preset value	CW rotation, then return to last preset value	after 10 s status LED flashes fast for 2 s
15 seconds	-	default setting (360°, CW)	after 15 s power and status LED alternate

Preset – Mode (teaching without positioning element)

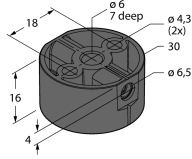
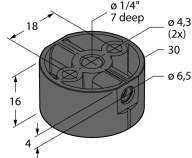
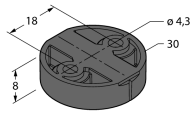
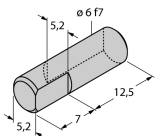
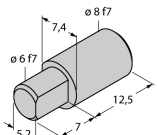
Jumper between teach input Pin 5 (GY)	Gnd Pin 3 (BU)	Ub Pin 1 (BN)	LED
2 seconds	activate preset mode	activate preset mode	status LED steady, flashes after 2 s
10 seconds	CCW rotation, then return to last preset value	CW rotation, then return to last preset value	after 10 s status LED flashes fast for 2 s
15 seconds	-	default setting (360°, CW)	after 15 s power and status LED alternate
Angular range	Gnd Pin 3 (BU)	Ub Pin 1 (BN)	status LED
30°	press once	-	1 x flashing
45°	press twice	-	2 x flashing
60°	press three times	-	3 x flashing
90°	-	press once	1 x flashing
180°	-	press twice	2 x flashing
270°	-	press three times	3 x flashing
360°	-	press four times	4 x flashing

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Accessories

Type code	Ident-No.	Description	Dimension drawing
P1-Ri-QR14	1590812	Positioning element for inductive angle sensors	
P2-Ri-QR14	1590819	Positioning element for inductive angle sensors	
P3-Ri-QR14	1590865	Positioning element for inductive angle sensor, flat design	
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	

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Accessories

Type code	Ident-No.	Description	Dimension drawing
DS-Ri-QR14	1590814	Spacer sleeves for rear mounting of Ri-QR14, 2 pcs. per bag	
TX1-Q20L60	6967114	Teach adapter for inductive encoders, linear position, angle and ultrasonic sensors	