

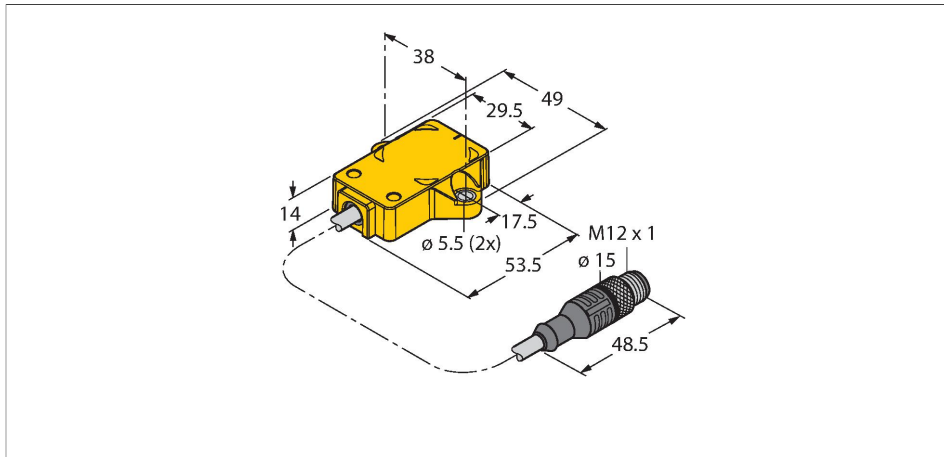
# RI360P0-QR14-ELIU5X2-0.3-RS5/S1264

## Inductive Angle Sensor – With Analog Output

### Premium Line

#### Features

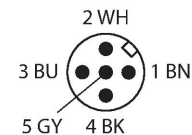
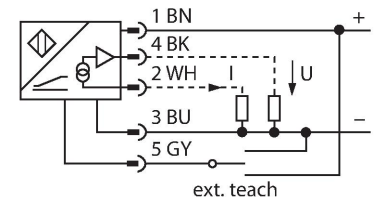
- Rectangular, plastic
- Compact, rugged housing
- Many mounting possibilities
- Measuring range displayed via LED
- Immune to electromagnetic interference
- Resolution, 12-bit
- Output signal returns to 0 V or rather 4 mA, provided the positioning element is outside the measuring range.
- 15...30 VDC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



#### Technical data

|                                             |                                                           |
|---------------------------------------------|-----------------------------------------------------------|
| Type                                        | RI360P0-QR14-ELIU5X2-0.3-RS5/S1264                        |
| ID                                          | 1590871                                                   |
| Measuring principle                         | Inductive                                                 |
| <b>General data</b>                         |                                                           |
| Starting torque shaft load (radial / axial) | Not applicable because of contactless measuring principle |
| Resolution                                  | 0.09°                                                     |
| Measuring range                             | 0...360 °                                                 |
| Nominal distance                            | 1.5 mm                                                    |
| Linearity deviation                         | ≤ 0.3 % f.s.                                              |
| Temperature drift                           | ≤ ± 0.01 %/K                                              |
| Output type                                 | Absolute singleturn                                       |
| <b>Electrical data</b>                      |                                                           |
| 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/yes (voltage supply)                                  |
| Output function                             | 5-pin, Analog output                                      |
| Voltage output                              | 0...10 V                                                  |
| Current output                              | 4...20 mA                                                 |
| Load resistance voltage output              | ≥ 4.7 kΩ                                                  |
| Load resistance current output              | ≤ 0.4 kΩ                                                  |

#### Wiring diagram

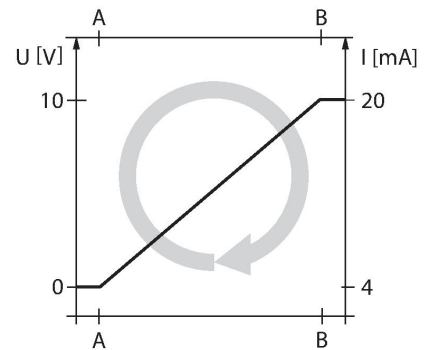


#### Functional principle

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.

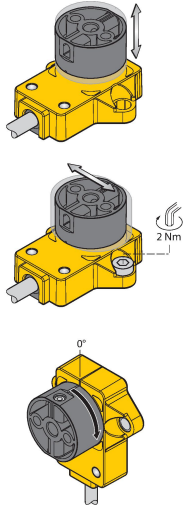
## Technical data

|                                             |                                            |
|---------------------------------------------|--------------------------------------------|
| Sample rate                                 | 500 Hz                                     |
| Current consumption                         | < 50 mA                                    |
| <b>Mechanical data</b>                      |                                            |
| Design                                      | Rectangular, QR14                          |
| Dimensions                                  | 53.5 x 49 x 14 mm                          |
| Flange type                                 | Flange without mounting element            |
| Shaft Type                                  | Blind hole shaft                           |
| Shaft diameter D (mm)                       | 6<br>6.35                                  |
| Housing material                            | Plastic, PBT-GF30-V0                       |
| Electrical connection                       | Cable with connector, M12 × 1              |
| Cable quality                               | Ø 5.2 mm, Black, LifYY, PVC, 0.3 m         |
| Core cross-section                          | 5 x 0.25 mm <sup>2</sup>                   |
| <b>Environmental conditions</b>             |                                            |
| Ambient temperature                         | -25...+70 °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     |
| Protection class                            | IP68<br>IP69K                              |
| MTTF                                        | 138 years acc. to SN 29500 (Ed. 99) 40 °C  |
| Power-on indication                         | LED, Green                                 |
| Measuring range display                     | multifunction LED, green<br>green flashing |



## Mounting instructions

### Mounting instructions/Description



Variably adjustable (teaching with position sensor)

|                                       |                                                |                                               |                                                  |
|---------------------------------------|------------------------------------------------|-----------------------------------------------|--------------------------------------------------|
| Bridge between teach input pin 5 (GY) | Gnd<br>Pin 3 (BU)                              | Ub<br>Pin 1 (BN)                              | LED                                              |
| 2 seconds                             | Initial value                                  | End value                                     | Power LED flashes then lights steadily after 2 s |
| 10 seconds                            | CCW rotation, then return to last preset value | CW rotation, then return to last preset value | After 10 s power LED flashes quickly for 2 s     |
| 15 seconds                            | -                                              | Factory setting (360°, CW)                    | Power and status LED alternate after 15 seconds  |

Preset – Mode (teach without position sensor)

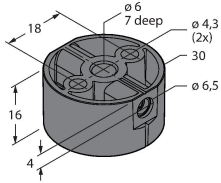
|                                       |                                                |                                               |                                                 |
|---------------------------------------|------------------------------------------------|-----------------------------------------------|-------------------------------------------------|
| Bridge between teach input pin 5 (GY) | Gnd<br>Pin 3 (BU)                              | Ub<br>Pin 1 (BN)                              | LED                                             |
| 2 seconds                             | Activate preset mode                           | Activate preset mode                          | Power 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 power LED flashes quickly for 2 s    |
| 15 seconds                            | -                                              | Factory settings (360°, CW)                   | Power and status LED alternate after 15 seconds |
| Angular range                         | Gnd<br>Pin 3 (BU)                              | Ub<br>Pin 1 (BN)                              | Power LED                                       |
| 30°                                   | Press x 1                                      | -                                             | Blinking x 1                                    |
| 45°                                   | Press x 2                                      | -                                             | Blinking x 2                                    |
| 60°                                   | Press x 3                                      | -                                             | Blinking x 3                                    |
| 90°                                   | -                                              | Press x 1                                     | Blinking x 1                                    |
| 180°                                  | -                                              | Press x 2                                     | Blinking x 2                                    |
| 270°                                  | -                                              | Press x 3                                     | Blinking x 3                                    |
| 360°                                  | -                                              | Press x 4                                     | Blinking x 4                                    |

## Accessories

P1-RI-QR14

1590812

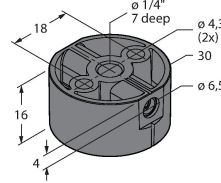
Positioning element for angle sensors RI-QR14, for Ø 6 mm shafts



P2-RI-QR14

1590819

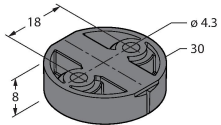
Positioning element for angle sensors RI-QR14, for Ø 6.35 mm shafts



P3-RI-QR14

1590865

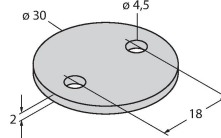
Positioning element for angle sensors RI-QR14, flat design, using shield plate SP1-QR14 is recommended



SP1-QR14

1590873

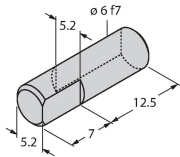
Shield plate Ø 30 mm, aluminium



HSA-M6-QR14

6901051

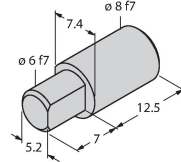
Adapter for RI-QR14 specific positioning elements, hollow on solid shaft, Ø 6 mm



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

