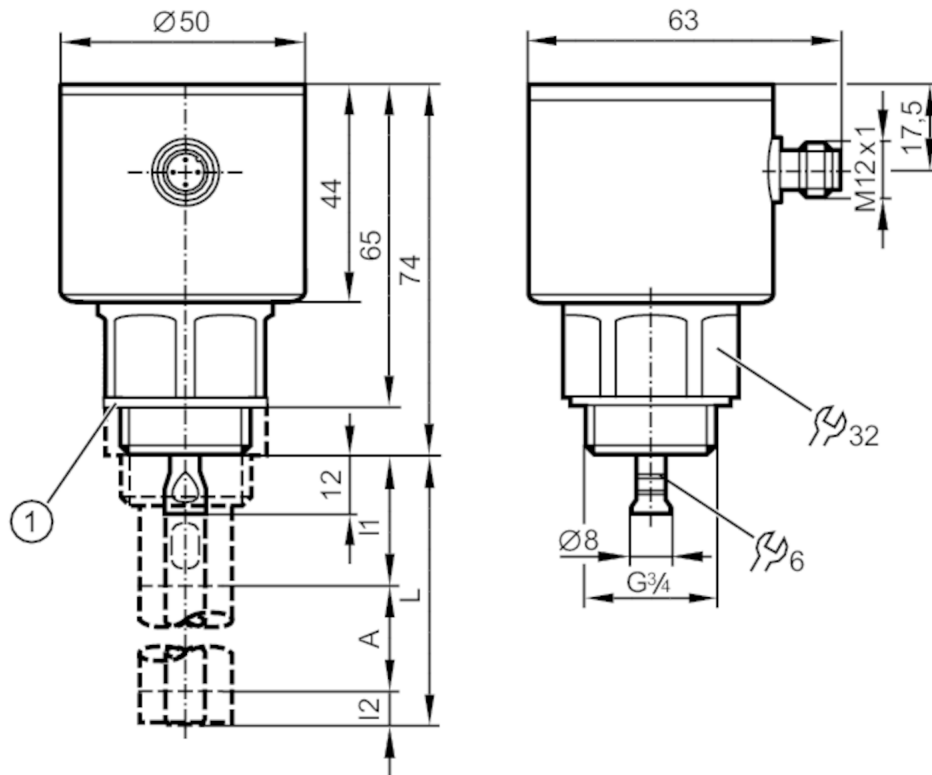




### Continuous level sensor (guided wave radar)

LR0400B--BR34A1DKG/US



- |         |                 |
|---------|-----------------|
| 1       | Sealing         |
| A       | active range    |
| I1 / I2 | inactive ranges |



## Product characteristics

|                              |                                                             |
|------------------------------|-------------------------------------------------------------|
| Number of inputs and outputs | Number of digital outputs: 1; Number of analogue outputs: 1 |
| Factory setting              | hydrous media; probe length L = 400 mm                      |
| Probe length L [mm]          | 100...1600                                                  |
| Process connection           | G 3/4 external thread                                       |

## Application

|                                   |                                                                                                              |                |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------|----------------|
| Special feature                   | Gold-plated contacts                                                                                         |                |
| Media                             | Liquids                                                                                                      |                |
| Dielectric constant of the medium | ≥ 1,8; (for media with a dielectric constant of 1.8...5 (e.g. oils), a coaxial pipe is needed for operation) |                |
| Recommended media                 | water; hydrous media; oils; oil-based media                                                                  |                |
| Cannot be used for                | See the operating instructions, chapter "Function and features".                                             |                |
| Medium temperature [°C]           | -25...80; (90 < 1 h)                                                                                         |                |
| Tank pressure                     | -1...16 bar                                                                                                  | -0.1...1.6 MPa |

## Electrical data

|                             |      |            |
|-----------------------------|------|------------|
| Operating voltage           | [V]  | 18...30 DC |
| Current consumption         | [mA] | < 25       |
| Protection class            |      | III        |
| Reverse polarity protection |      | yes        |



## Continuous level sensor (guided wave radar)

LR0400B--BR34A1DKG/US

|                                  |      |                                                             |
|----------------------------------|------|-------------------------------------------------------------|
| Power-on delay time              | [s]  | < 3                                                         |
| Measuring principle              |      | guided wave radar                                           |
| <b>Inputs / outputs</b>          |      |                                                             |
| Number of inputs and outputs     |      | Number of digital outputs: 1; Number of analogue outputs: 1 |
| <b>Outputs</b>                   |      |                                                             |
| Total number of outputs          |      | 2                                                           |
| Output signal                    |      | analogue signal; IO-Link                                    |
| Electrical design                |      | PNP                                                         |
| Number of digital outputs        |      | 1                                                           |
| Number of analogue outputs       |      | 1                                                           |
| Analogue current output          | [mA] | 4...20, invertible                                          |
| Max. load                        | [Ω]  | 500                                                         |
| Analogue voltage output          | [V]  | 0...10, invertible                                          |
| Min. load resistance             | [Ω]  | 2000                                                        |
| Short-circuit protection         |      | yes                                                         |
| Type of short-circuit protection |      | thermal, pulsed                                             |
| Overload protection              |      | yes                                                         |
| <b>Measuring/setting range</b>   |      |                                                             |
| Factory setting                  |      | hydrous media; probe length L = 400 mm                      |
| Probe length L                   | [mm] | 100...1600                                                  |
| Active range A                   | [mm] | L-40; (when set to oil and oil based media: L-60)           |
| Inactive range I1 / I2           | [mm] | 30 / 10; (when set to oil and oil based media: 30 / 30)     |
| Sampling rate                    | [Hz] | 4                                                           |
| <b>Accuracy / deviations</b>     |      |                                                             |
| Repeatability                    | [mm] | ± 5                                                         |
| Measuring error                  | [mm] | ± 7                                                         |
| Offset error                     | [mm] | 5                                                           |
| Resolution                       | [mm] | 1                                                           |
| Zero signal (voltage)            | [V]  | 0                                                           |
| Zero signal (current)            | [mA] | 4                                                           |
| Full signal (voltage)            | [V]  | 10                                                          |
| Full signal (current)            | [mA] | 20                                                          |
| Temperature drift per 10 K       |      | ± 0.2 %                                                     |
| <b>Interfaces</b>                |      |                                                             |
| Communication interface          |      | IO-Link                                                     |
| Transmission type                |      | COM2 (38,4 kBaud)                                           |
| IO-Link revision                 |      | 1.1                                                         |
| SDCI standard                    |      | IEC 61131-9 CDV                                             |
| Profiles                         |      | no profile                                                  |
| SIO mode                         |      | no                                                          |
| Required master port type        |      | A                                                           |
| Process data analogue            |      | 1                                                           |



## Continuous level sensor (guided wave radar)

LR0400B--BR34A1DKG/US

|                         |                          |                 |
|-------------------------|--------------------------|-----------------|
| Min. process cycle time | [ms]                     | 2.3             |
| Supported DeviceIDs     | <b>Type of operation</b> | <b>DeviceID</b> |
|                         | default                  | 685             |

| Operating conditions |                                                            |          |
|----------------------|------------------------------------------------------------|----------|
| Ambient temperature  | [°C]                                                       | -25...60 |
| Storage temperature  | [°C]                                                       | -40...85 |
| Protection           | IP 68; IP 69K; (7 days / 1 m water depth / 0.1 bar: IP 68) |          |

| Tests / approvals    |                   |                                                                |
|----------------------|-------------------|----------------------------------------------------------------|
| EMC                  | DIN EN 61000-6-2  |                                                                |
|                      | DIN EN 61000-6-3  | in a closed metal tank                                         |
|                      | DIN EN 61000-6-4  | in plastic or open metal tanks                                 |
| Shock resistance     | DIN EN 60068-2-27 | 50 g (11 ms) / 25 g (6 ms) with reference rod 0.5 m            |
| Vibration resistance | DIN EN 60068-2-6  | 5 g (10...2000 Hz) / 1 g (5...200 Hz) with reference rod 0.5 m |
| MTTF                 | [years]           | 239                                                            |
| UL approval          | File number UL    | E355663                                                        |

| Mechanical data          |                                                                                                                         |               |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------|---------------|
| Weight                   | [g]                                                                                                                     | 431.5         |
| Dimensions               | [mm]                                                                                                                    | Ø 50 / L = 86 |
| Materials                | stainless steel (304/1.4301); stainless steel (316L/1.4404); FKM; PEI                                                   |               |
| Materials (wetted parts) | stainless steel (303/1.4305); probe connection: stainless steel (316L/1.4435); PTFE; FKM; Sealing: NBR reinforced fibre |               |
| Process connection       | G 3/4 external thread                                                                                                   |               |

| Remarks       |        |
|---------------|--------|
| Pack quantity | 1 pcs. |

## Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated



## Continuous level sensor (guided wave radar)

LR0400B--BR34A1DKG/US

### Connection



OUT1: IO-Link  
OUT2: analogue output  
colours to DIN EN 60947-5-2  
Core colours :

BK = black  
BN = brown  
BU = blue  
WH = white

### Diagrams and graphs

Measurement deviation D at the limits of the active rod range

