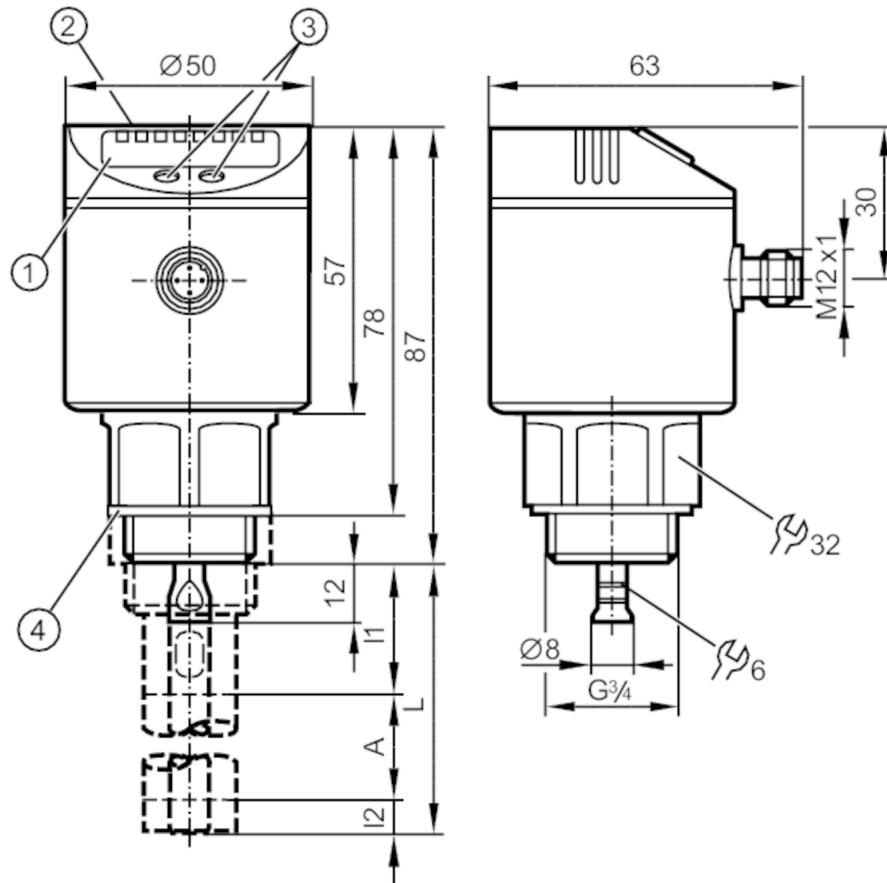


# LR3000



## Continuous level sensor (guided wave radar)

LR0000B-BR34AMPKG/US



- 1 alphanumeric display 4-digit
- 2 LEDs Display unit / switching status
- 3 programming buttons
- 4 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
Probe length L [mm]	100...1600
Process connection	G 3/4 external thread

### Application

Special feature	Gold-plated contacts
Media	hydrous coolants; oils; oil-based media; water; media similar to water
Dielectric constant of the medium	$\geq 2$ ; (for media with a dielectric constant of 2...20 (e.g. oils), a coaxial pipe is needed for operation)
Cannot be used for	greases; granulates; bulk material; acids; alkali; heavily foaming media
Medium temperature [°C]	0...80; (90 < 1 h)
Tank pressure [bar]	-1...16
MAWP (for applications according to CRN) [bar]	25

### Electrical data

Operating voltage [V]	18...30 DC
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Current consumption	[mA]	< 80
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[s]	< 3
Measuring principle		guided wave radar

### Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 1; Number of analogue outputs: 1
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### Outputs

Total number of outputs	2
Output signal	switching signal; analogue signal; IO-Link
Electrical design	PNP
Number of digital outputs	1
Output function	normally open / normally closed; (parameterisable)
Max. voltage drop switching output DC	[V] 2.5
Permanent current rating of switching output DC	[mA] 200
Number of analogue outputs	1
Analogue current output	[mA] 4...20
Max. load	[Ω] 500
Analogue voltage output	[V] 0...10
Min. load resistance	[Ω] 2000
Short-circuit protection	yes
Type of short-circuit protection	thermal, pulsed
Overload protection	yes

### Measuring/setting range

Probe length L	[mm] 100...1600
Active range A	[mm] L-40 (L-60); (when set to oil and oil based media)
Inactive range I1 / I2	[mm] 30 / 10 (30); (when set to oil and oil based media)

### Setting range

Set point SP	[mm] 15...L-30
Note on setpoint SP	when set to oil and oil based media: 35...L-30
Reset point rP	[mm] 10... L-35
Note on reset point rP	when set to oil and oil based media: 30...L-35
In steps of	[mm] 5
Hysteresis	[mm] > 5

### Accuracy / deviations

Repeatability	[mm] ± 5
Switch point accuracy	[mm] ± (15 + 0,5 % ); (% of the final value of the measuring range: L - 30 mm)
Offset error	[mm] 10
Measuring sensitivity	16 mA ÷ MEW 10 V ÷ MEW
Resolution	[mm] 0,5 (L < 300 mm) 0,2% MEW (L > 300 mm)

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Zero signal (voltage)	[V]	0...0.02
Zero signal (current)	[mA]	3.95...4.0
Full signal (voltage)	[V]	10.0...10.1
Full signal (current)	[mA]	20...20.2
Characteristics deviation		± 10

### Interfaces

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		yes
Required master port type		A
Process data analogue		1
Process data binary		1
Min. process cycle time	[ms]	2.3
Supported DeviceIDs	<b>Type of operation</b>	<b>DeviceID</b>
	default	344

### Operating conditions

Ambient temperature	[°C]	0...60
Storage temperature	[°C]	-25...80
Protection		IP 67

### Tests / approvals

EMC	IEC 60947-1	
Shock resistance	DIN IEC 68-2-27	50 g (11 ms)
Vibration resistance	DIN IEC 68-2-6	5 g (10...2000 Hz)
MTTF	[years]	196

### Mechanical data

Weight	[g]	378.4
Dimensions	[mm]	Ø 50 / L = 99
Materials	stainless steel (304/1.4301); FKM; PBT; PC; PEI; TPE-V; PTFE	
Materials (wetted parts)	stainless steel (303/1.4305); probe connection: stainless steel (316L/1.4435); PTFE; FKM; Sealing: NBR-PPTA 20	
Process connection	G 3/4 external thread	

### Displays / operating elements

Display	Display unit	3 x LED, green
	switching status	1 x LED, yellow
	level	alphanumeric display, 4-digit
	parameter setting	alphanumeric display, 4-digit

### Accessories

Accessories (optional)	Probe:, E43203...E43205 / E43207...E43210 Coaxial pipe:, E43211...E43221, E43223, E43224
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### Remarks

Pack quantity	1 pcs.
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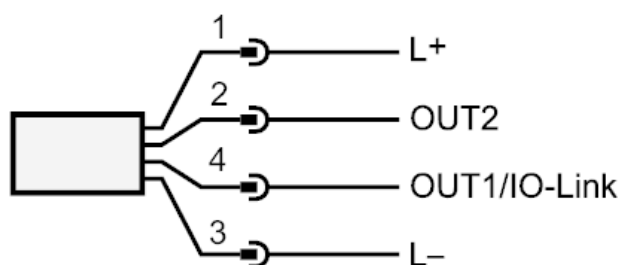
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### Electrical connection

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



### Connection



OUT1: switching output  
OUT2: analogue output

### Diagrams and graphs

Measurement deviation D at the limits of the active rod range

