

LR3000

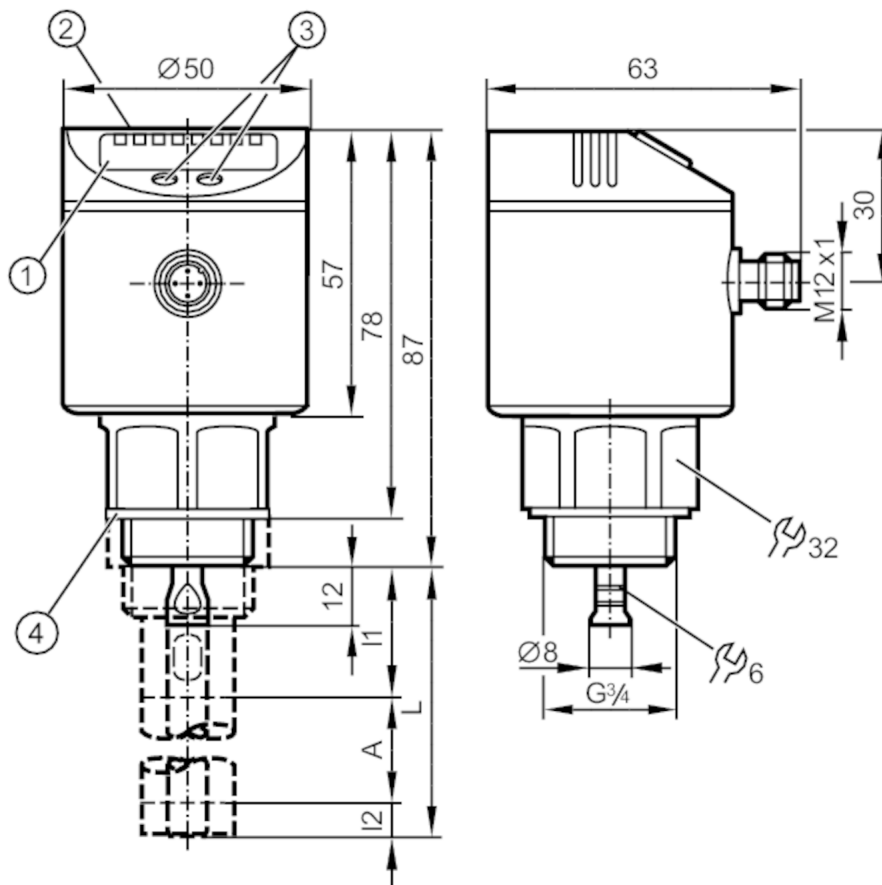


Continuous level sensor (guided wave radar)

LR0000B-BR34AMPKG/US

Please see the technical note under "Downloads"

For high process temperatures: The temperature at the process connection is decisive. The actual medium temperature may be higher.



- 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	Liquids
Dielectric constant of the medium	$\geq 1,8$; (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".
Process temperature [°C]	-25...80; (90 < 1 h ; see note under remarks)

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Pressure rating	[bar]	16
Vacuum resistance	[mbar]	-1000
MAWP (for applications according to CRN)	[bar]	16

Electrical data

Operating voltage	[V]	18...30 DC
Current consumption	[mA]	< 30
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, invertible; (scalable)
Max. load	[Ω] 500
Analogue voltage output	[V] 0...10, invertible; (scalable)
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; (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

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

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Accuracy / deviations		
Repeatability	[mm]	± 5
Measuring error	[mm]	± 7
Offset error	[mm]	5
Resolution	[mm]	1
Zero signal (voltage)	[V]	0
Zero signal (current)	[mA]	4.0
Full signal (voltage)	[V]	10
Full signal (current)	[mA]	20
Temperature drift per 10 K		± 0.2
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	Type of operation	DeviceID
	Default	344
Operating conditions		
Ambient temperature	[°C]	-25...60
Storage temperature	[°C]	-40...80
Protection		IP 67
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]	196
UL approval	UL Approval no.	H006
	File number UL	E174191
Mechanical data		
Weight	[g]	378.4
Materials		stainless steel (1.4301 / 304); stainless steel (1.4404 / 316L); FKM; PBT; PC; PEI; TPE-V
Materials (wetted parts)		stainless steel (1.4305 / 303); probe connection: stainless steel (1.4435 / 316L); PTFE; FKM; Sealing: NBR reinforced fibre
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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

Remarks

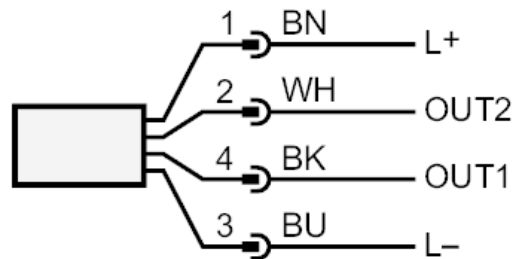
Notes	Please see the technical note under "Downloads"; For high process temperatures: The temperature at the process connection is decisive. The actual medium temperature may be higher.
Pack quantity	1 pcs.

Electrical connection

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



Connection



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

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

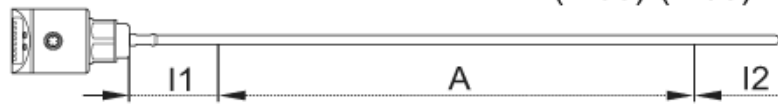
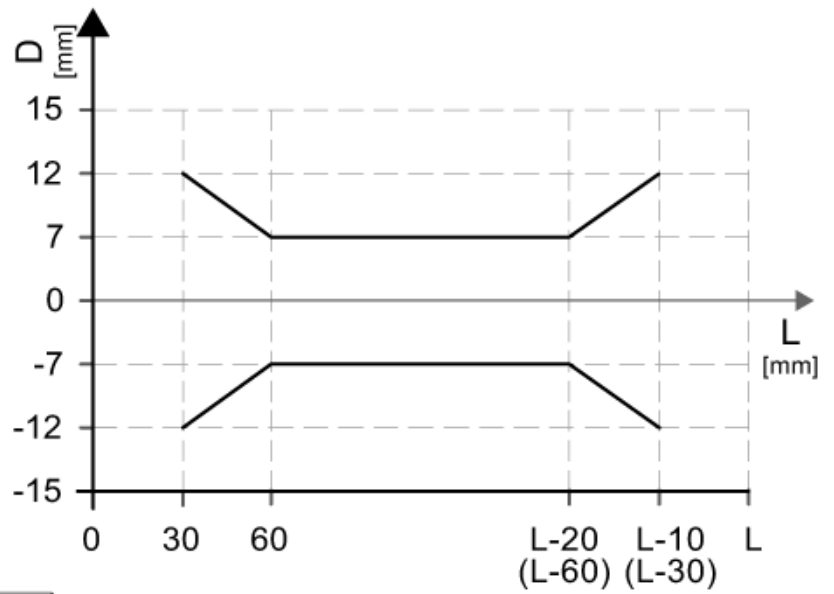
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Diagrams and graphs



Measurement deviation D at the limits of the active rod range