

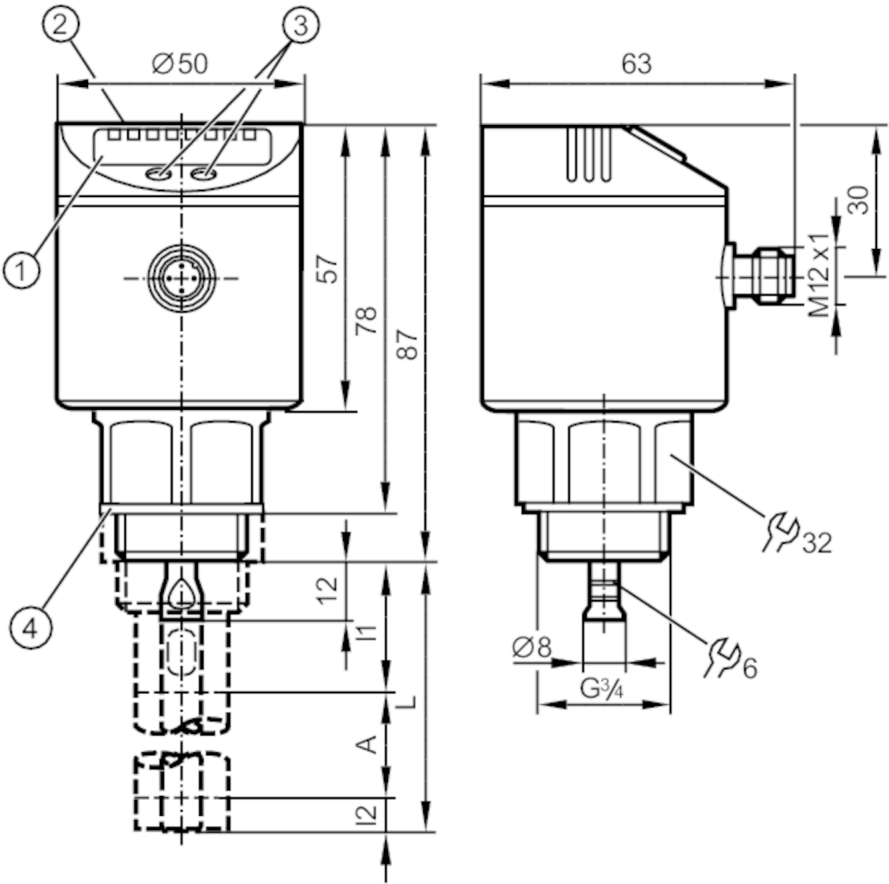
LR3000



Continuous level sensor (guided wave radar)

LR0000B-BR34AMPKG/US

Please see the technical note under "Downloads"



- 1 alphanumeric display 4-digit
- 2 LEDs Display unit / Switching status
- 3 Programming buttons
- 4 sealing
- A Active zone
- I1 / I2 Inactive ranges



Product characteristics	
Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1
Probe length L [mm]	100...1600
Process connection	G 3/4 external thread



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Application		
System		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; water-based 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	[bar]	-1...16
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 analog outputs: 1
Outputs		
Total number of outputs		2
Output signal		switching signal; analog signal; IO-Link
Electrical design		PNP
Number of digital outputs		1
Output function		normally open / closed; (configurable)
Max. voltage drop switching output DC	[V]	2.5
Permanent current rating of switching output DC	[mA]	200
Number of analog outputs		1
Analog current output	[mA]	4...20, invertible; (scalable)
Max. load	[Ω]	500
Analog 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

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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
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 class		A
Process data analog		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 number	H006
	File number UL	E174191

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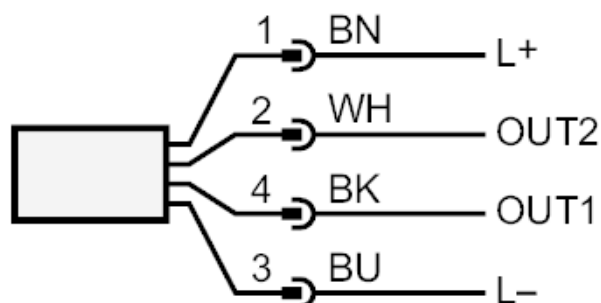
Mechanical data		
Weight	[g]	437
Material	stainless steel (1.4301 / 304); stainless steel (1.4404 / 316L); FKM; PBT; PC; PEI; TPE-V	
Materials (wetted parts)	stainless steel (1.4305 / 303); probe connection: stainless steel (1.4435 / 316L); PTFE; FKM; sealing: NBR fiber-reinforced	
Process connection	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
Remarks		
Notes	Please see the technical note under "Downloads"	
Pack quantity	1 pcs.	
Electrical connection		
Connector: 1 x M12; Contacts: gold-plated		
		



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Connection



OUT1: switching output or IO-Link

OUT2: analog output

Colors to DIN EN 60947-5-2

Core colors :

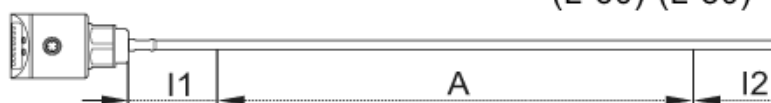
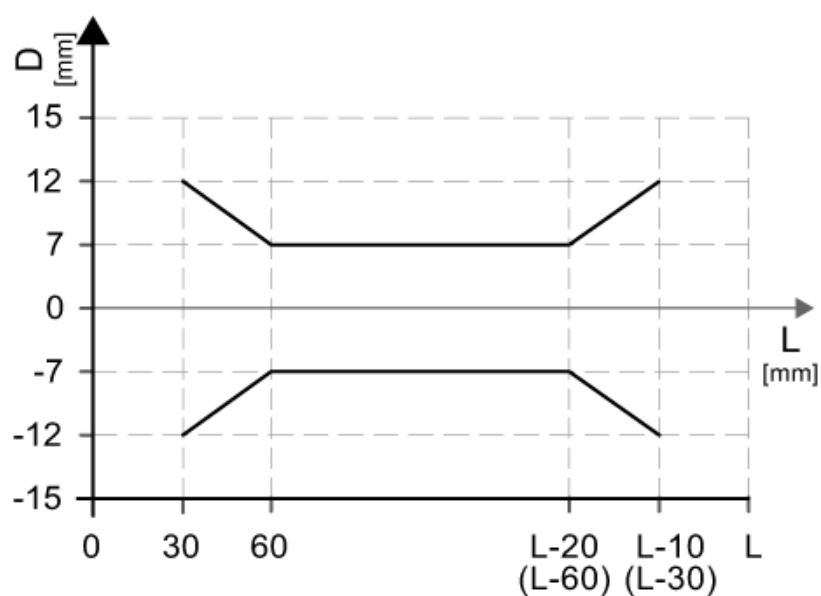
BK = black

BN = brown

BU = blue

WH = white

Diagrams and graphs



Measurement deviation D at the limits of the active rod range