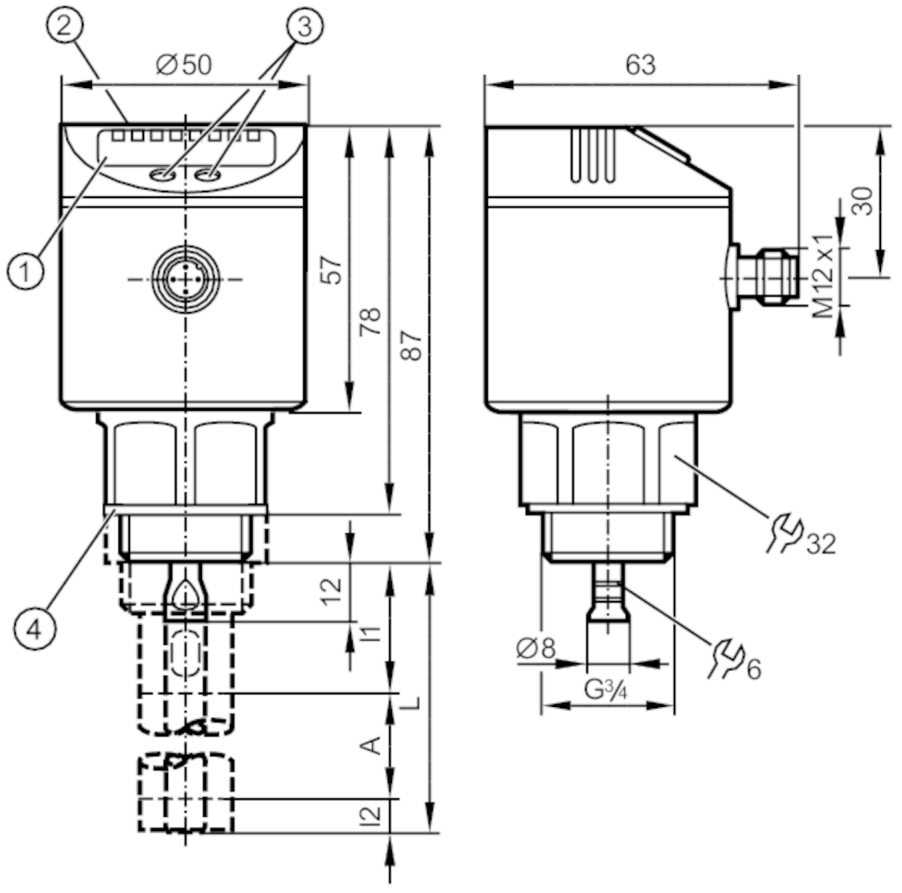
LR3000

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

CE CRN cULus LISTED EAC IO-Link

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		≥ 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

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Electrical data		
Operating voltage	[V]	18...30 DC
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
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 (35) / ≤ L-30
Note on setpoint SP		when set to oil and oil based media
Reset point rP	[mm]	≥ 10 (30) / ≤ L-35
Note on reset point rP		when set to oil and oil based media
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

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		10 V ÷ MEW	
Resolution	[mm]	0,5 (L < 300 mm) 0,2% MEW (L > 300 mm)	
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		Type of operation	DeviceID
		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	
Materials		stainless steel (1.4301 / 304); FKM; PBT; PC; PEI; TPE-V; PTFE	
Materials (wetted parts)		stainless steel (1.4305 / 303); probe connection: stainless steel (1.4435 / 316L); 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

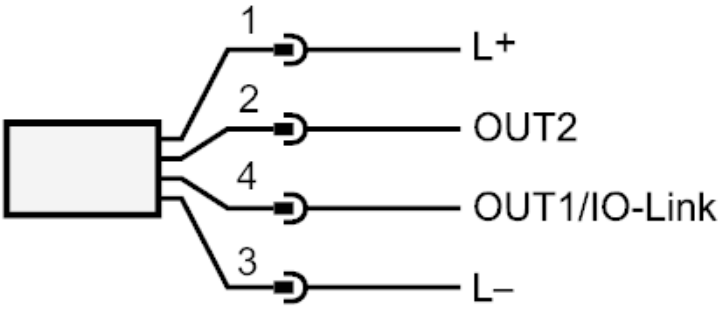
Pack quantity	1 pcs.

Electrical connection

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



Connection



OUT1: switching output

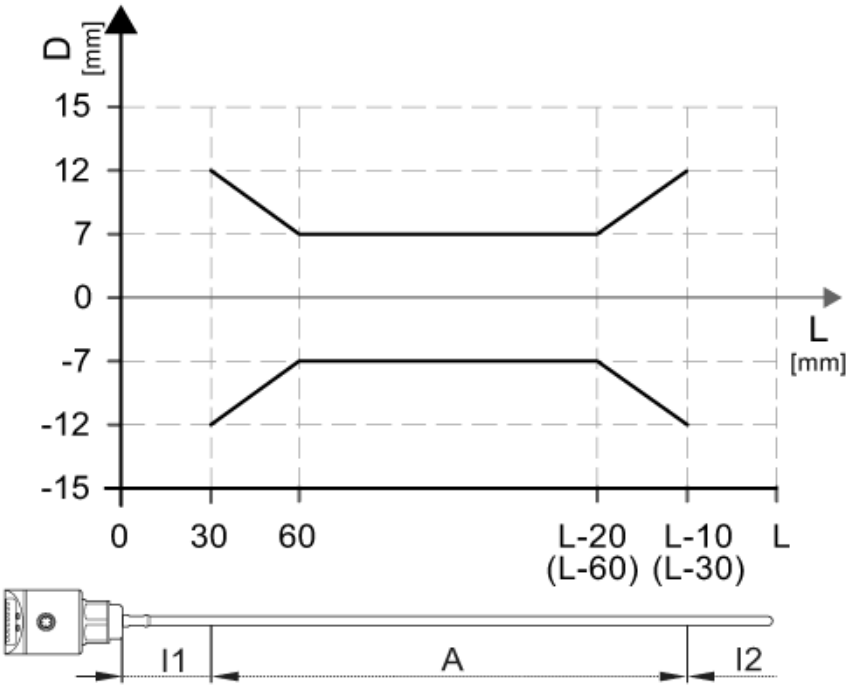
OUT2: analogue output

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Diagrams and graphs



Measurement deviation D at the limits of the active rod range