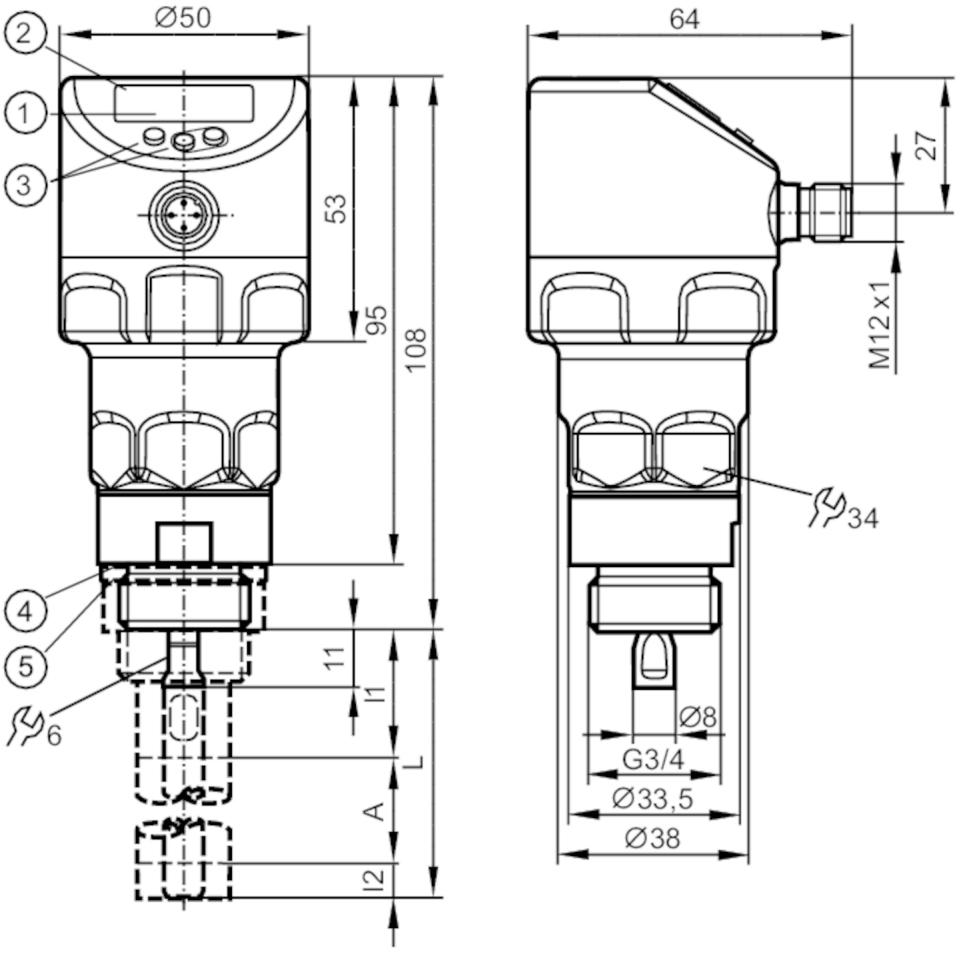
LR2059

Continuous level sensor (guided wave radar)

LR0000B-ER34AKSKG/US

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
5 additional sealing for use with coaxial pipe
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]	150...2000
Process connection	threaded connection G 3/4 external thread
Application	
Special feature	Gold-plated contacts
Application	for industrial applications
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

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Process temperature	[°C]	-20...100; (see note under remarks)
Pressure rating	[bar]	16
Vacuum resistance	[mbar]	-1000
Electrical data		
Operating voltage	[V]	18...30 DC
Current consumption	[mA]	< 50
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/NPN
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]	150; (200 (...60 °C))
Number of analogue outputs		1
Analogue current output	[mA]	4...20, invertible; (scalable)
Max. load	[Ω]	500
Factory setting		Electrical design: NPN
Short-circuit protection		yes
Type of short-circuit protection		pulsed
Overload protection		yes
Measuring/setting range		
Probe length L	[mm]	150...2000
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)
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]	1
Hysteresis	[mm]	> 5
Accuracy / deviations		
Measuring error	[mm]	± 7

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Offset error	[mm]	5	
Resolution	[mm]	1	
Zero signal (current)	[mA]	4.0	
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	
Profiles		Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis	
SIO mode		yes	
Required master port type		A	
Process data analogue		1	
Process data binary		2	
Min. process cycle time	[ms]	2.3	
Supported DeviceIDs		**Type of operation**	**DeviceID**
		default	644
Operating conditions			
Ambient temperature	[°C]	-40...80	
Storage temperature	[°C]	-40...100	
Protection		IP 68; IP 69K	
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) / 20 g (6 ms) with reference rod 0.5 m
Vibration resistance		DIN EN 60068-2-6	20 g (10...2000 Hz) / 1 g (5...200 Hz) with reference rod 0.5 m
MTTF	[ANN]	216	
Mechanical data			
Weight	[g]	365.5	
Materials		stainless steel (1.4404 / 316L); PEI; PFA; PBT; FKM	
Materials (wetted parts)		stainless steel (1.4404 / 316L); stainless steel (1.4435 / 316L); PTFE; FKM	
Process connection		threaded connection G 3/4 external thread	
Displays / operating elements			
Display		Display unit	3 x LED, green
		switching status	2 x LED, yellow
		level	alphanumeric display, 4-digit
		parameter setting	alphanumeric display, 4-digit
Remarks			
Notes		For high process temperatures: The temperature at the process connection is decisive. The actual medium temperature may be higher.	
Pack quantity		1 pcs.	

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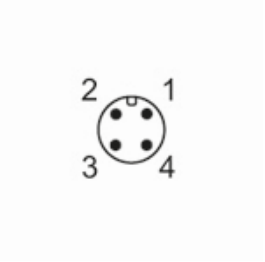
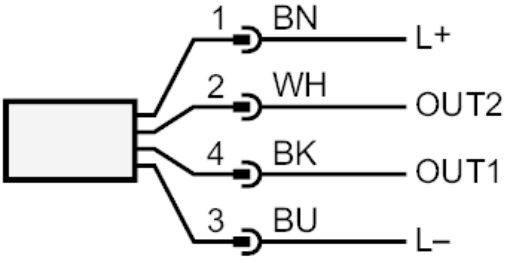
Electrical connection

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



Connection



OUT1:	switching output IO-Link
OUT2:	switching output 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