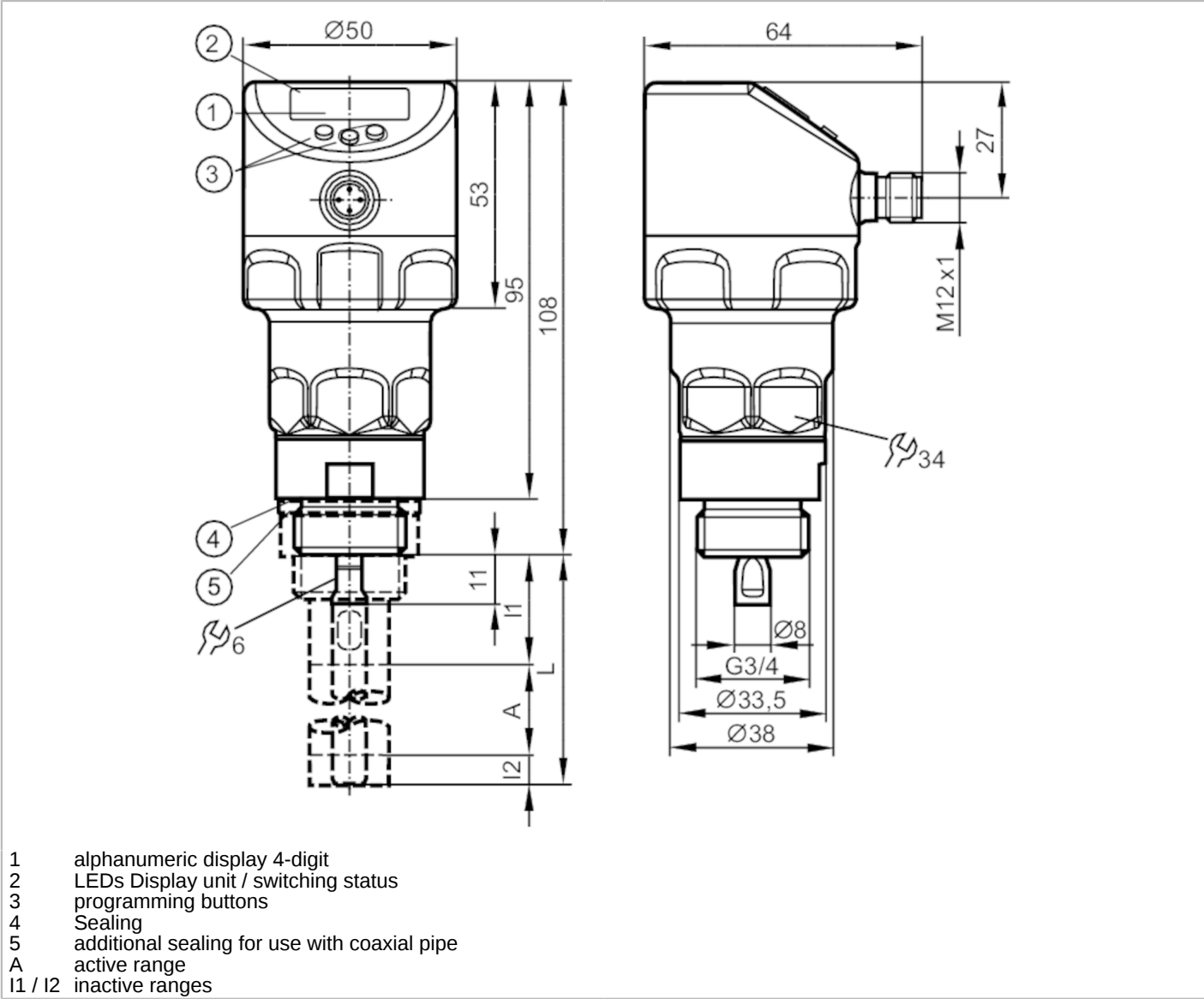




Continuous level sensor (guided wave radar)

LR0000B-ER34AKSKG/US

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



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	16 bar	1.6 MPa
Vacuum resistance	-1000 mbar	-0.1 MPa

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
Offset error	[mm]	5



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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	<table> <tr> <th>Type of operation</th><th>DeviceID</th></tr> <tr> <td>default</td><td>644</td></tr> </table>	Type of operation	DeviceID	default	644
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	<table> <tr> <td>DIN EN 61000-6-2</td><td></td></tr> <tr> <td>DIN EN 61000-6-3</td><td>: in a closed metal tank</td></tr> <tr> <td>DIN EN 61000-6-4</td><td>: in plastic or open metal tanks</td></tr> </table>	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
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	<table> <tr> <td>DIN EN 60068-2-27</td><td>50 g (11 ms) / 20 g (6 ms) with reference rod 0.5 m</td></tr> </table>	DIN EN 60068-2-27	50 g (11 ms) / 20 g (6 ms) with reference rod 0.5 m				
DIN EN 60068-2-27	50 g (11 ms) / 20 g (6 ms) with reference rod 0.5 m						
Vibration resistance	<table> <tr> <td>DIN EN 60068-2-6</td><td>20 g (10...2000 Hz) / 1 g (5...200 Hz) with reference rod 0.5 m</td></tr> </table>	DIN EN 60068-2-6	20 g (10...2000 Hz) / 1 g (5...200 Hz) with reference rod 0.5 m				
DIN EN 60068-2-6	20 g (10...2000 Hz) / 1 g (5...200 Hz) with reference rod 0.5 m						
MTTF	[years] 216						

Mechanical data

Weight	[g] 365.5
Dimensions	[mm] Ø 50 / L = 119
Materials	stainless steel (316L/1.4404); PEI; PFA; PBT; FKM
Materials (wetted parts)	stainless steel (316L/1.4404); stainless steel (316L/1.4435); PTFE; FKM
Process connection	threaded connection G 3/4 external thread

Displays / operating elements

Display	<table> <tr> <td>Display unit</td><td>3 x LED, green</td></tr> <tr> <td>switching status</td><td>2 x LED, yellow</td></tr> <tr> <td>level</td><td>alphanumeric display, 4-digit</td></tr> <tr> <td>parameter setting</td><td>alphanumeric display, 4-digit</td></tr> </table>	Display unit	3 x LED, green	switching status	2 x LED, yellow	level	alphanumeric display, 4-digit	parameter setting	alphanumeric display, 4-digit
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.

LR2059



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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

LR2059



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Diagrams and graphs

Measurement deviation D at the limits of the active rod range

