

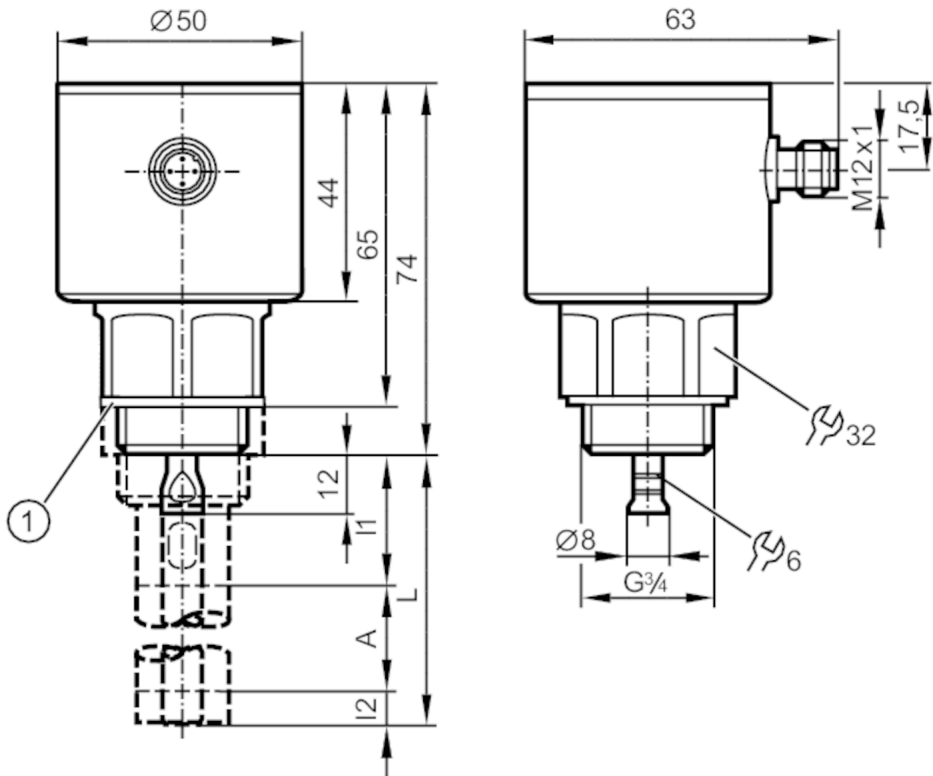
LR3020



Continuous level sensor (guided wave radar)

LR0000--BR34AMDKG/US

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



- 1 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...2000	
Process connection	threaded connection G 3/4 external thread	
Application		
System	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; water-based media; oils; oil-based media	
Process temperature [°C]	-25...80; (90 < 1 h ; 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]	< 25	

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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/NPN
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
Max. load [Ω]	500
Analog voltage output [V]	0...10, invertible
Min. load resistance [Ω]	2000
Short-circuit protection	yes
Type of short-circuit protection	yes (non-latching)
Overload protection	yes
Measuring/setting range	
Probe length L [mm]	100...2000
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: 30...L-30
Reset point rP [mm]	10... L-35
Note on reset point rP	when set to oil and oil based media: 35...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

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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	
Profiles	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	yes	
Required master port class	A	
Process data analog	3	
Process data binary	1	
Min. process cycle time	[ms]	3.2
Supported DeviceIDs	Type of operation	DeviceID
	default	687

Operating conditions		
Ambient temperature	[°C]	-25...60
Storage temperature	[°C]	-40...85
Protection	IP 68; IP 69K; (7 days / 1 m water depth / 0.1 bar: IP 68)	

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]	241
UL approval	UL approval number	H012
	File number UL	E174191

Mechanical data		
Weight	[g]	437.3
Dimensions	[mm]	Ø 50 / L = 86
Material	stainless steel (1.4301 / 304); stainless steel (1.4404 / 316L); FKM; PEI	
Materials (wetted parts)	stainless steel (1.4305 / 303); probe connection: stainless steel (1.4435 / 316L); PTFE; FKM; sealing: NBR fiber-reinforced	
Process connection	threaded connection G 3/4 external thread	

Remarks		
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Pack quantity	1 pcs.	

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Electrical connection - plug

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



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

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Diagrams and graphs

Measurement deviation D at the limits of the active rod range

