

# LR9020

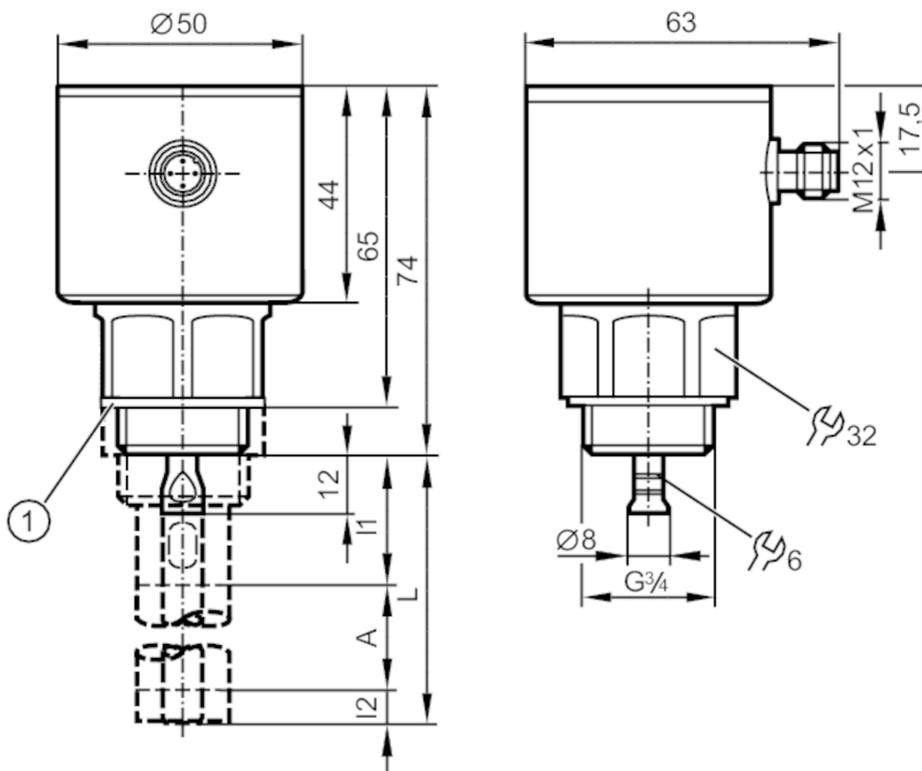


## Continuous level sensor (guided wave radar)

LR0000--BR34A1DKG/US

Please see the technical note under "Downloads"

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



- 1 Sealing
- A active range
- I1 / I2 inactive ranges



### Product characteristics

Number of inputs and outputs	Number of analogue outputs: 1
Probe length L [mm]	100...1600
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
Cannot be used for	See the operating instructions, chapter "Function and features".
Process temperature [°C]	-25...80; (90 < 1 h ; see note under remarks)
Pressure rating [bar]	16
Vacuum resistance [mbar]	-1000



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MAWP (for applications according to CRN)	[bar]	16
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### Electrical data

Operating voltage	[V]	18...30 DC
Current consumption	[mA]	< 25
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 analogue outputs: 1
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### Outputs

Total number of outputs		2
Output signal		analogue signal; IO-Link
Electrical design		PNP
Number of analogue outputs		1
Analogue current output	[mA]	4...20, invertible
Max. load	[Ω]	500
Analogue voltage output	[V]	0...10, invertible
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

### 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
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

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Profiles	no profile	
SIO mode	no	
Required master port type	A	
Process data analogue	1	
Min. process cycle time [ms]	2.3	
Supported DeviceIDs	<b>Type of operation</b>	<b>DeviceID</b>
	default	578

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]	239	
UL approval	UL Approval no.	H009
	File number UL	E174191

Mechanical data		
Weight [g]	470.9	
Materials	stainless steel (304/1.4301); stainless steel (316L/1.4404); FKM; PEI	
Materials (wetted parts)	stainless steel (303/1.4305); probe connection: stainless steel (316L/1.4435); PTFE; FKM; Sealing: NBR reinforced fibre	
Process connection	threaded connection G 3/4 external thread	

Remarks	
Notes	Please see the technical note under "Downloads"; For high process temperatures: The temperature at the process connection is decisive. The actual medium temperature may be higher.
Pack quantity	1 pcs.

### Electrical connection

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



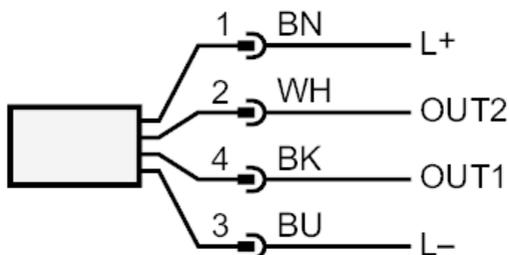
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### Connection



OUT1: IO-Link  
OUT2: analogue output  
colours to DIN EN 60947-5-2

Core colours :

BK = black  
BN = brown  
BU = blue  
WH = white

### Diagrams and graphs

Measurement deviation D at the limits of the active rod range

