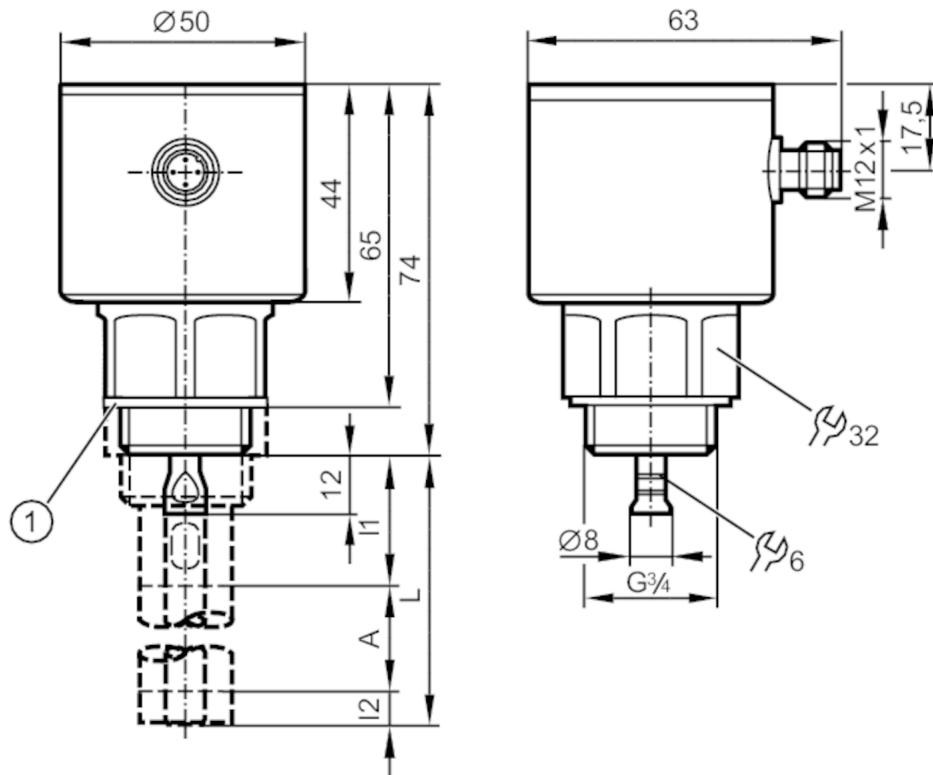


LR3020



Continuous level sensor (guided wave radar)

LR0000--BR34AMDKG/US



- 1 Sealing
- 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]	100...2000
Process connection	G 3/4 external thread

Application

Special feature	Gold-plated contacts
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
Medium temperature [°C]	-25...80; (90 < 1 h)
Tank pressure [bar]	-1...16

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



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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]	200
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	pulsed
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-35
Reset point rP [mm]	≥ 10 ...L-35
Note on reset point rP	when set to oil and oil based media: 35...L-30
In steps of [mm]	5
Hysteresis [mm]	> 5
Accuracy / deviations	
Repeatability [mm]	± 5
Measuring error [% of the measured value]	± 7 mm
Offset error [mm]	5
Resolution [mm]	1
Zero signal (voltage) [V]	0
Zero signal (current) [mA]	4.0
Full signal (voltage) [V]	10
Full signal (current) [mA]	20
Temperature drift per 10 K	± 0.2 %

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Interfaces	
Communication interface	IO-Link
Transmission type	COM2 (38,4 kBaud)
IO-Link revision	1.1
SDCI standard	IEC 61131-9
IO-Link device ID	0x0002AF
Profiles	Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis
SIO mode	yes
Required master port type	A
Process data analogue	3
Process data binary	1
Min. process cycle time [ms]	3.2

Operating conditions	
Ambient temperature [°C]	-25...60
Storage temperature [°C]	-40...85
Protection	IP 68; IP 69K; (IP68: 7 days / 1 m water depth / 0.1 bar)

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

Mechanical data	
Weight [g]	486.6
Materials	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 reinforced fibre
Process connection	G 3/4 external thread

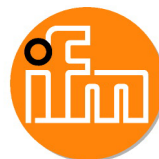
Remarks	
Pack quantity	1 pcs.

Electrical connection - plug

Connector: 1 x M12; Contacts: gold-plated



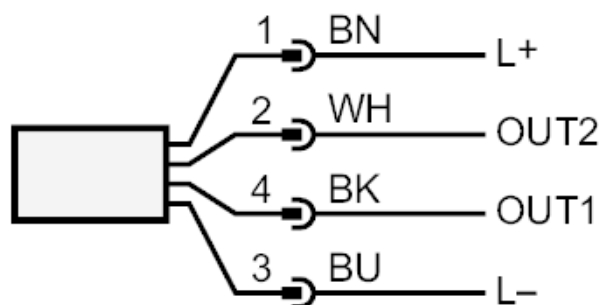
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Connection



OUT1: switching output or IO-Link

OUT2: analogue output

colours to DIN EN 60947-5-2

Core colours :

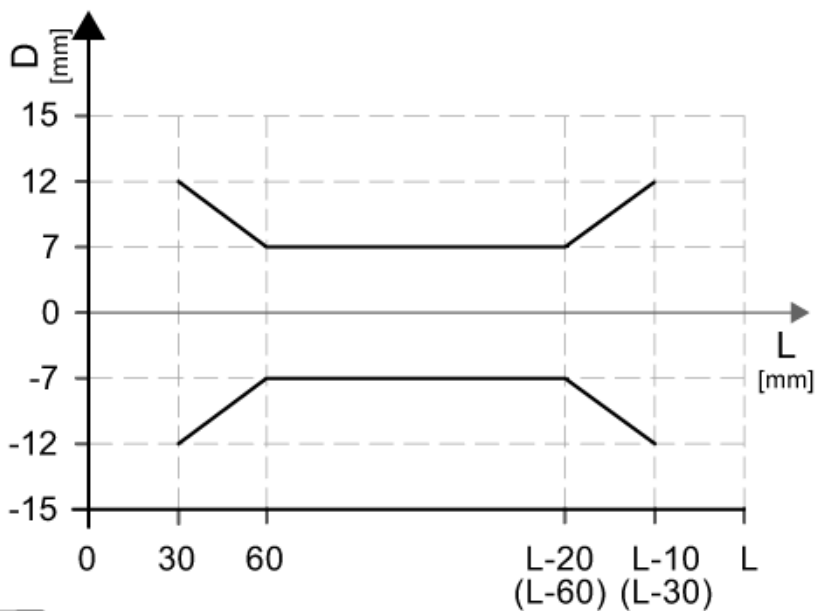
BK = black

BN = brown

BU = blue

WH = white

Diagrams and graphs



Measurement deviation D at the limits of the active rod range