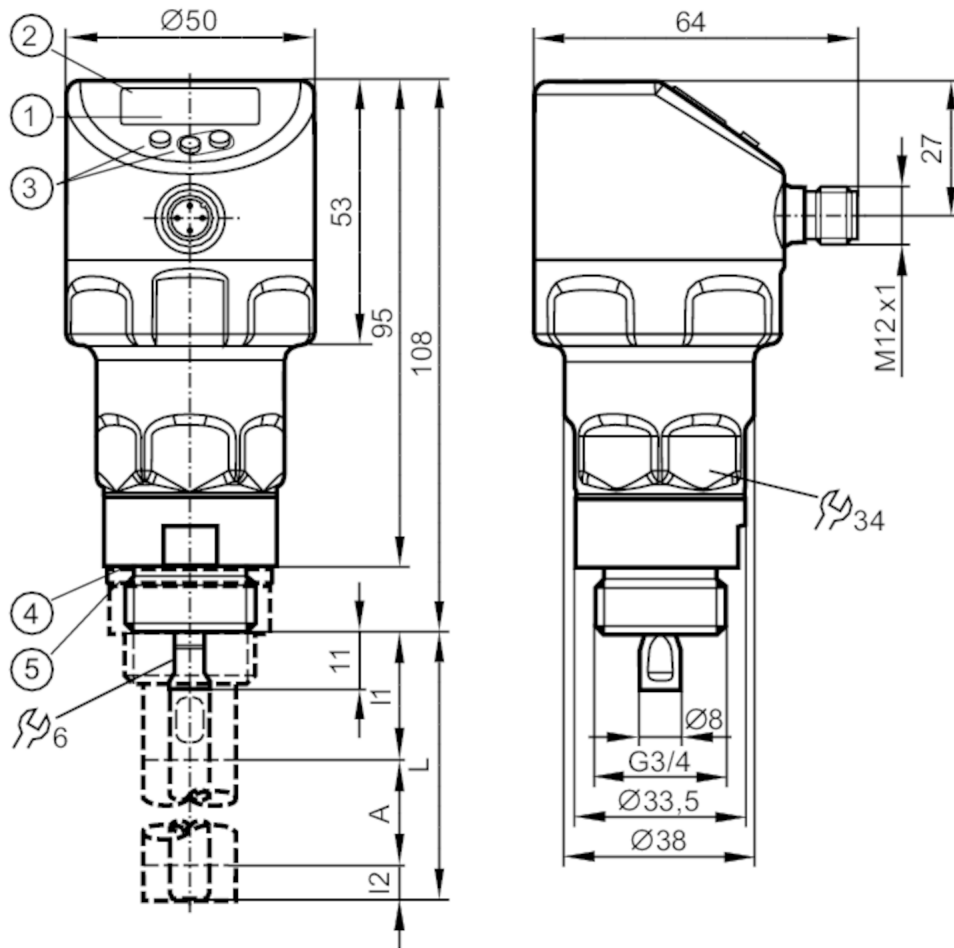


LR2050



Continuous level sensor (guided wave radar)

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- 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	G 3/4 external thread

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Application	
Special feature	Gold-plated contacts
Media	Liquids; oil-based media; hydrous media
Dielectric constant of the medium	$\geq 1,8$; (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]	-20...100
Tank pressure [bar]	-1...16
MAWP (for applications according to CRN) [bar]	16
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
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)
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

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Setting range		
Set point SP	[mm]	≥ 15 (35) / $\leq L-30$
Note on setpoint SP		when set to oil and oil based media
Reset point rP	[mm]	≥ 10 (30) / $\leq L-35$
Note on reset point rP		when set to oil and oil based media
In steps of	[mm]	1
Hysteresis	[mm]	> 5
Accuracy / deviations		
Measuring error	[% of the measured value]	± 7 mm
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
IO-Link device ID		0x0001DF
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
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 metal tank
	DIN EN 61000-6-4	: in a plastic tank
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	[years]	216

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Mechanical data

Weight	[g]	447.5
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		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

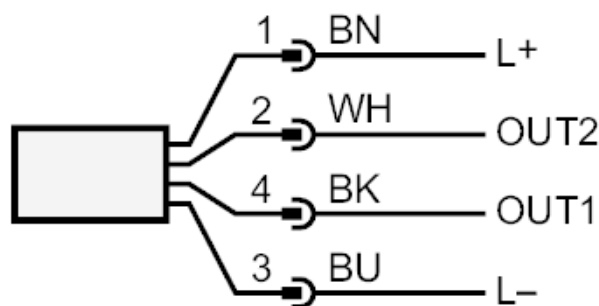
Pack quantity	1 pcs.
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Electrical connection

Connector: 1 x M12; 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

