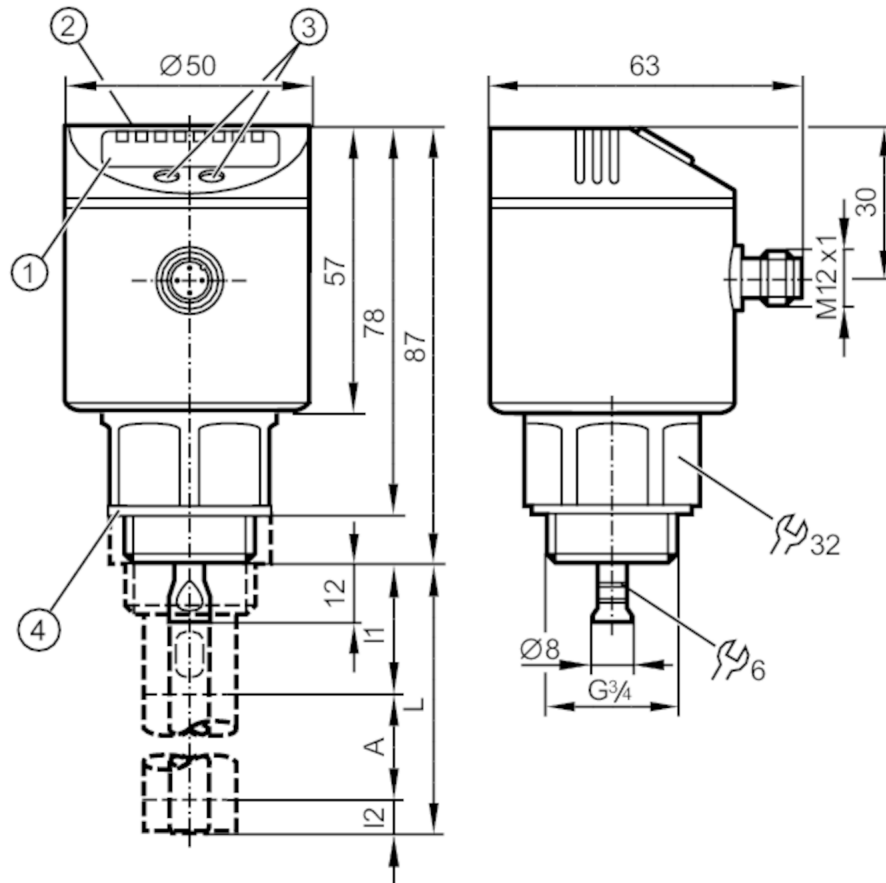


# LR3000



## 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
- A active range
- I1 / I2 inactive ranges



### Application

Media	hydrous coolants; oils; oil-based media; water; media similar to water
Dielectric constant of the medium	$\geq 2$ ; (for media with a dielectric constant of 2...20 (e.g. oils), a coaxial pipe is needed for operation)
Cannot be used for	greases; granulates; bulk material; acids; alkali; heavily foaming media
Medium temperature [°C]	0...80; (90 < 1 h)
Tank pressure [bar]	-1...16
MAWP (for applications according to CRN) [bar]	25

### Electrical data

Operating voltage [V]	18...30 DC
Current consumption [mA]	< 80
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
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
Max. load [ $\Omega$ ]	500
Analogue voltage output [V]	0...10
Min. load resistance [ $\Omega$ ]	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 (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)
Setting range	
Set point SP [mm]	$\geq 15$ (35) / $\leq L-30$
Note on setpoint SP	when set to oil and oil based media
Reset point rP [mm]	$\geq 10$ (30) / $\leq L-35$
Note on reset point rP	when set to oil and oil based media
In steps of [mm]	5
Hysteresis [mm]	> 5
Accuracy / deviations	
Repeatability [mm]	$\pm 5$
Switch point accuracy [mm]	$\pm (15 + 0,5 \%)$ ; (% of the final value of the measuring range: L - 30 mm)
Characteristics deviation	$\pm 10$
Offset error [mm]	10
Measuring sensitivity	16 mA $\div$ MEW 10 V $\div$ MEW
Resolution [mm]	0.5 (L < 300 mm) 0.2% MEW (L > 300 mm)
Zero signal (voltage) [V]	0...0.02
Zero signal (current) [mA]	3.95...4.0
Full signal (voltage) [V]	10.0...10.1
Full signal (current) [mA]	20...20.2

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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 CDV	
IO-Link device ID	344 d / 00 01 58 h	
Profiles	no profile	
SIO mode	yes	
Required master port type	A	
Process data analogue	1	
Process data binary	1	
Min. process cycle time [ms]	2.3	
Operating conditions		
Ambient temperature [°C]	0...60	
Storage temperature [°C]	-25...80	
Protection	IP 67	
Tests / approvals		
EMC	IEC 60947-1	
Shock resistance	DIN IEC 68-2-27	50 g (11 ms)
Vibration resistance	DIN IEC 68-2-6	5 g (10...2000 Hz)
MTTF [years]	174.71	
Mechanical data		
Weight [g]	387.6	
Materials	stainless steel (1.4301 / 304); FKM; PBT; PC; PEI; TPE-V; PTFE	
Materials (wetted parts)	stainless steel (1.4305 / 303); probe connection: stainless steel (1.4435 / 316L); PTFE; FKM; Sealing: NBR-PPTA 20	
Process connection	G 3/4 external thread	
Displays / operating elements		
Display	Display unit	3 x LED, green
	switching status	1 x LED, yellow
	level	alphanumeric display, 4-digit
	parameter setting	alphanumeric display, 4-digit
Accessories		
Accessories (optional)	Probe:, E43203...E43205 / E43207...E43210 Coaxial pipe:, E43211...E43221, E43223, E43224	
Remarks		
Pack quantity	1 pcs.	
Electrical connection		
Connector: 1 x M12; Contacts: gold-plated		

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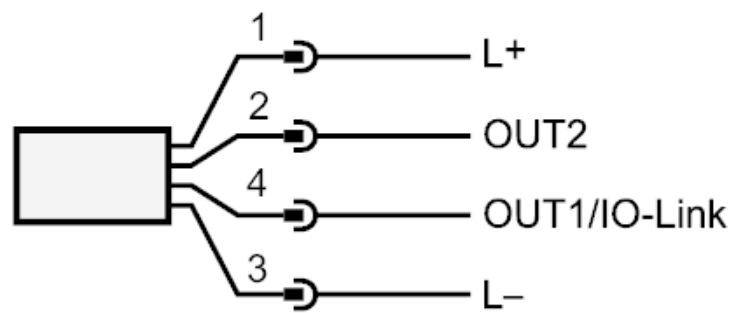


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### Connection



OUT1: switching output

OUT2: analogue output