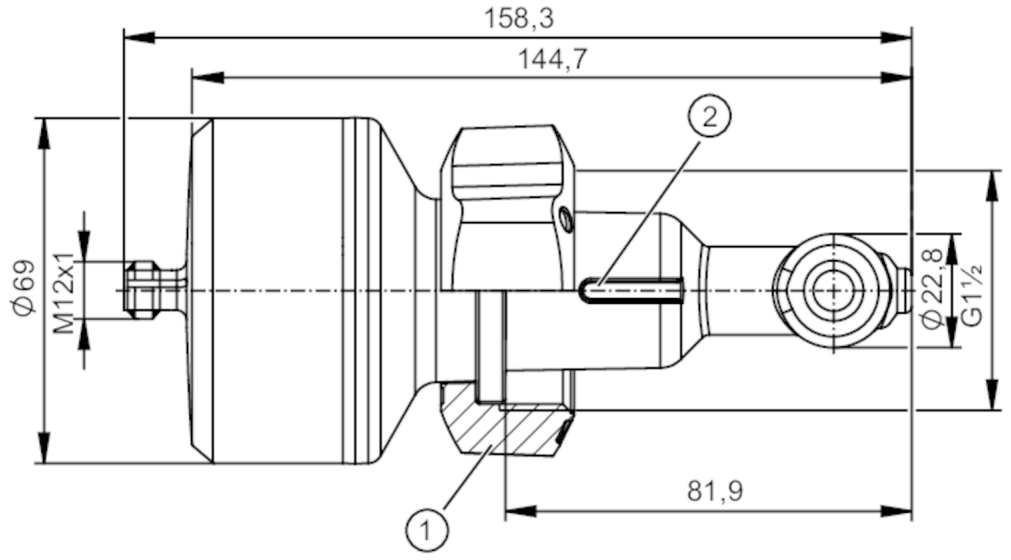
LDL400

Inductive conductivity sensor

IND CONDUCTIVITY IND G1 1/2 UN



1 Lock nut
2 alignment groove

Product characteristics		
Number of inputs and outputs		Number of analogue outputs: 1
Process connection		threaded connection G 1 1/2 internal thread
Application		
Special feature		Gold-plated contacts
Media		conductive liquids
Note on media		water
Cannot be used for		See the operating instructions, chapter "Function and features".
Medium temperature	[°C]	-5...60
Pressure rating	[bar]	10
Note on pressure rating		at medium temperature 20°C
Vacuum resistance	[mbar]	-1000
Electrical data		
Operating voltage	[V]	18...30 DC
Current consumption	[mA]	< 100
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[s]	2
Measuring principle		inductive
Inputs / outputs		
Number of inputs and outputs		Number of analogue outputs: 1
Outputs		
Total number of outputs		1
Output signal		analogue signal; IO-Link
Output function		selectable conductivity / temperature / NaCl concentration

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Number of analogue outputs		1	
Analogue current output	[mA]	4...20; (scalable)	
Max. load	[Ω]	500	
Measuring/setting range			
concentration measurement NaCl			
Measuring range	[%]	0...25; (Medium temperature: 20...50 °C)	
conductivity measurement			
Measuring range	[µS/cm]	100...2000000	
Resolution	[µS/cm]	0...10.000	1
		10.000...100.000	10
		100.000...2.000.000	100
temperature measurement			
Measuring range	[°C]	-25...100	
Accuracy / deviations			
concentration measurement NaCl			
Accuracy	[%]	(0...4 %) pure water	0,1
		(4...14 %) pure water	0,4
		(14...25 %) pure water	1
		(0...12 %) water with conductivity 1000 µS/cm	0,4
Resolution	[%]	0,1	
conductivity measurement			
Accuracy (in the measuring range)		2 % MW ± 25 µS/cm	
Drift	[%/K]	0,1 %/K MW	
Repeatability		1 % MW ± 25 µS/cm	
Long-term stability		0,5 % MW ± 25 µS/cm	
temperature measurement			
Accuracy	[K]	20...50 °C (Medium temperature)	< ± 0,5 K
		-25...100 °C (Medium temperature)	< ± 1,5 K
Repeatability	[K]	0,2	
Resolution	[K]	0.1	
Response times			
conductivity measurement			
Response time	[s]	< 2; (T09; Damping = 0); for conductance values <1000 µS/cm < 5s; (T09; Damping = 0)	
temperature measurement			
Response time	[s]	< 120; (T09)	
Interfaces			
Communication interface		IO-Link	
Transmission type		COM2 (38,4 kBaud)	
IO-Link revision		1.1	
SDCI standard		IEC 61131-9	

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Profiles		**Function class**	**Designation**
		0x0019	Measuring and Switching Sensor, floating point, 2 channel
		0x4000	Identification and Diagnosis
		0x8014	Quantity detection
		0x8101	Locator
SIO mode		no	
Required master port type		A	
Process data analogue		1	
Min. process cycle time	[ms]	6.4	
IO-Link process data (cyclical)		**function**	**bit length**
		conductivity	32
		temperature	32
		status	4
		binary switching information	4
IO-Link functions (acyclical)		NaCl concentration; Speicher; operating hours counter; internal temperature; simulation function	
Supported DeviceIDs		**Type of operation**	**DeviceID**
		default	1593
Operating conditions			
Ambient temperature	[°C]	-25...50	
Storage temperature	[°C]	-25...75	
Protection		IP 68; IP 69K; (7 days / 3 m water depth / 0.3 bar: IP 68)	
Tests / approvals			
EMC		DIN EN 61326-1	group 1: class B
Shock resistance		DIN EN 60068-2-27	50 g (11 ms)
Vibration resistance		DIN EN 60068-2-6	20 g (10...2000 Hz)
MTTF	[ANN]	127	
Mechanical data			
Weight	[g]	404.4	
Materials		housing: PP reinforced fibre; Lock nut: PP reinforced fibre	
Materials (wetted parts)		housing: PP reinforced fibre; Lock nut: PP reinforced fibre; O-ring: EPDM	
Process connection		threaded connection G 1 1/2 internal thread	
Surface characteristics Ra/Rz of the wetted parts		Ra: < 0.8	
Remarks			
Remarks		MW = measured value	
Pack quantity		1 pcs.	

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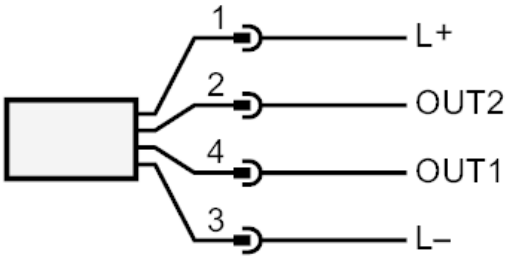
Electrical connection

Connector: 1 x M12 (EN 61067-2-101); coding: A; Contacts: gold-plated

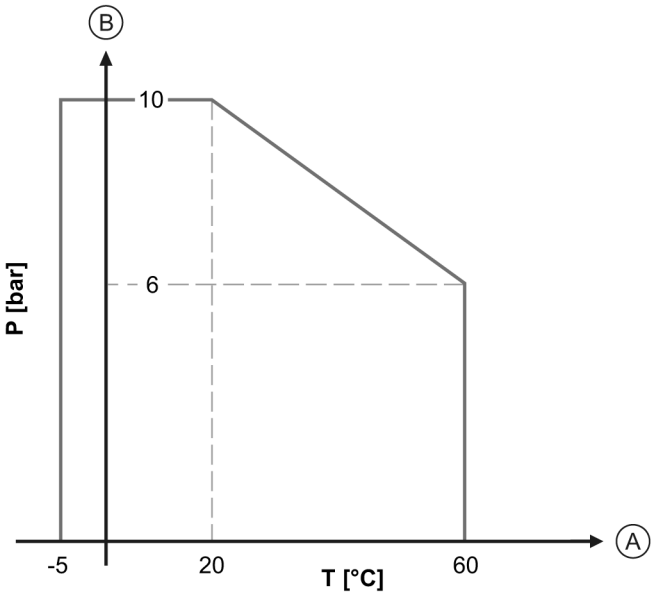
Connection



OUT1: IO-Link
OUT2: analogue output

Diagrams and graphs

characteristic line for derating



A Medium temperature

B Pressure rating