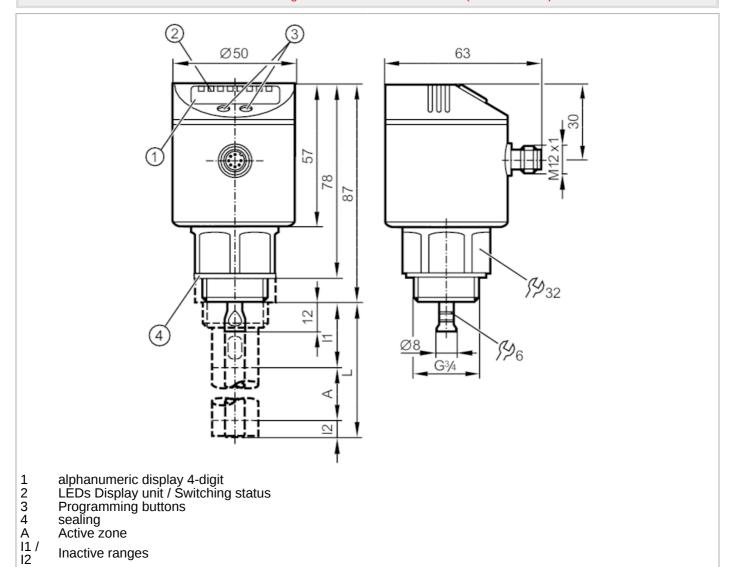
Continuous level sensor (guided wave radar)





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

For 8-wire cordsets the core colors are not standardized. Please note the wiring of the sensor and the cordsets (see data sheet).





Product characteristics			
Number of inputs and	outputs	Number of digital outputs: 4	
Probe length L	[mm]	1001600	
Process connection		G 3/4 external thread	

Continuous level sensor (guided wave radar)





System gold-plated contacts Installation Operation only in conjunction with rod and coaxial pipe. Media Piblicatric constant of the medium ≥ 2 Cannot be used for See the operating instructions, chapter "Function and features". Process temperature [*C] 080; (see note under remarks) Prosum resistance [mbar] 4 Vacuum resistance [mbar] -500 Electrical data Electrical data Upperating voltage [V] 1830 DC Current consumption [mA] < 30	Application		
Media hydrous coolants; oils; oil-based media; water; media similar to water	System		gold-plated contacts
Dielectric constant of the medium ≥ 2	Installation		Operation only in conjunction with rod and coaxial pipe.
See the operating instructions, chapter "Function and features". Process temperature C	Media		hydrous coolants; oils; oil-based media; water; media similar to water
Process temperature [*C] 080; (see note under remarks) Pressure rating [bar] 4 Vacuum resistance [mbar] -500 Electrical data -500 Operating voltage [V] 1830 DC Current consumption [mA] < 30			≥ 2
Pressure rating [bar] 4 Vacuum resistance [mbar] -500 Electrical data	Cannot be used for		See the operating instructions, chapter "Function and features".
Vacuum resistance	Process temperature	[°C]	080; (see note under remarks)
Electrical data Operating voltage [V] 1830 DC Current consumption [mA] < 30 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	Pressure rating	[bar]	4
Operating voltage [V] 1830 DC Current consumption [mA] A	Vacuum resistance	[mbar]	-500
Current consumption [mA] < 30 Protection class Reverse polarity protection Power-on delay time [s] < 3 Measuring principle guided wave radar Inputs / outputs Number of inputs and outputs Number of digital outputs: 4 Output signal switching signal Electrical design PNP Number of digital outputs A Output function normally open / closed; (configurable) Max. voltage drop switching of switching output DC Permanent current rating of switching output DC Short-circuit protection yes Measuring/setting range Probe length L [mm] 1001600 Active range A [mm] L-40; (when set to oil and oil based media: 30 / 30) Inactive range 11 / 12 [mm]	Electrical data		
Protection class Reverse polarity protection Power-on delay time [s]	Operating voltage	[V]	1830 DC
Reverse polarity protection Power-on delay time [s] Measuring principle Inputs / outputs Number of inputs and outputs Number of outputs: Total number of outputs Output signal Electrical design Number of digital outputs 4 Output function Number of digital outputs 4 Output function Number of digital outputs [V] Permanent current rating of switching output DC Permanent current rating of switching output DC Short-circuit protection Type of short-circuit protection Ves Measuring/setting range Probe length L [mm] Active range A [mm] L-40; (when set to oil and oil based media: 1.60) Inactive range I1 / 12 [mm] Shumber of digital outputs: 4 4 Output Shumber of digital outputs: 4 4 Output signal And the set oil and oil based media: 30 / 30)	Current consumption	[mA]	< 30
Power-on delay time [s] quided wave radar Inputs / outputs Number of inputs and outputs Number of digital outputs: 4 Outputs Total number of outputs	Protection class		III
Inputs / outputs	Reverse polarity protection		yes
Inputs / outputs Number of inputs and outputs Number of inputs and outputs Outputs Total number of outputs Output signal Electrical design Number of digital outputs A Output function Number of digital outputs A Output function Normally open / closed; (configurable) Max. voltage drop switching output DC Permanent current rating of switching output DC Permanent current rating of switching output DC Short-circuit protection Type of short-circuit protection Type of short-circuit protection Ves Measuring/setting range Probe length L [mm] 1001600 Active range A [mm] L-40; (when set to oil and oil based media: 10.0) Inactive range 11./12 [mm] 30./10; (when set to oil and oil based media: 30./30)	Power-on delay time	[s]	< 3
Number of digital outputs: 4 Outputs Total number of outputs Output signal Electrical design Number of digital outputs Output function Max. voltage drop switching output DC Permanent current rating of switching output DC Short-circuit protection Type of short-circuit protection Type of short-circuit protection Overload protection Measuring/setting range Probe length L [mm] Active range A [mm] Inactive range I1 / 12 [mm] A A A A A A A A A	Measuring principle		guided wave radar
Total number of outputs Output signal Switching signal Electrical design PNP Number of digital outputs Output function normally open / closed; (configurable) Max. voltage drop switching output DC Permanent current rating of switching output DC Short-circuit protection yes Type of short-circuit protection Type of short-circuit protection Overload protection yes Measuring/setting range Probe length L [mm] 1001600 Active range A [mm] L-40; (when set to oil and oil based media: 100.00) Inactive range I1 / 12 [mm] 30 / 10; (when set to oil and oil based media: 30 / 30)	Inputs / outputs		
Total number of outputs Output signal Electrical design Number of digital outputs Output function Max. voltage drop switching output DC Permanent current rating of switching output DC Short-circuit protection Type of short-circuit protection Overload protection Probe length L [mm] Active range A [mm] Inactive range I1 / 12 [mm] Switching signal At the switching signal PNP At the switching signal FNP At the switching signal At the switching signa	Number of inputs and outputs	6	Number of digital outputs: 4
Output signal Electrical design Number of digital outputs Output function Max. voltage drop switching output DC Permanent current rating of switching output DC Short-circuit protection Type of short-circuit protection Overload protection Probe length L [mm] Active range A [mm] Inactive range I1 / I2 [mm] Switching signal Switching signal PNP PNP At the mall switching signal PNP 4 Active range I1 / I2 [mm] Switching signal PNP 2.5 (configurable) 2.5 200 Substituting value 200 Substituting range Pobe length L [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)	Outputs		
Electrical design Number of digital outputs Output function Max. voltage drop switching output DC Permanent current rating of switching output DC Short-circuit protection Type of short-circuit protection Overload protection Weasuring/setting range Probe length L [mm] Active range A [mm] Inactive range I1 / I2 [mm] PNP 4 4 4 4 4 4 4 4 4 4 4 4 4	Total number of outputs		4
Number of digital outputs Output function Max. voltage drop switching output DC Permanent current rating of switching output DC Short-circuit protection Type of short-circuit protection Overload protection Overload protection Probe length L [mm] Active range A [mm] Inactive range I1 / I2 [mm] Active range I1 / I2 [mm]	Output signal		switching signal
Output function Max. voltage drop switching output DC Permanent current rating of switching output DC Short-circuit protection Type of short-circuit protection Overload protection Weasuring/setting range Probe length L [mm] Active range A [mm] Inactive range I1 / I2 [mm] Active range I1 / I2 Inactive range I1 / I2	Electrical design		PNP
Max. voltage drop switching output DC Permanent current rating of switching output DC Short-circuit protection Type of short-circuit protection Overload protection Weasuring/setting range Probe length L [mm] Active range A [mm] L-40; (when set to oil and oil based media: 30 / 30) [mA] 2.5 200 200 thermal, pulsed thermal, pulsed 1001600 L-40; (when set to oil and oil based media: L-60) Inactive range I1 / I2 [mm]	Number of digital outputs		4
output DC Permanent current rating of switching output DC Short-circuit protection Type of short-circuit protection Overload protection Probe length L [mm] Active range A [mm] Inactive range I1 / I2 [mm] Permanent current rating of [mA] 200 thermal, pulsed thermal, pulsed 1001600 L-40; (when set to oil and oil based media: L-60) Inactive range I1 / I2 [mm]	Output function		normally open / closed; (configurable)
Short-circuit protection Type of short-circuit protection Overload protection Weasuring/setting range Probe length L [mm] 1001600 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)		[V]	2.5
Type of short-circuit protection Overload protection Weasuring/setting range Probe length L [mm] 1001600 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)		[mA]	200
Overload protection yes Measuring/setting range Probe length L [mm] 1001600 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)	Short-circuit protection		yes
Measuring/setting range Probe length L [mm] 1001600 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)			thermal, pulsed
Probe length L [mm] 1001600 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)	Overload protection		yes
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)	Measuring/setting range		
Inactive range I1 / I2 [mm] 30 / 10; (when set to oil and oil based media: 30 / 30)	Probe length L	[mm]	1001600
	Active range A	[mm]	L-40; (when set to oil and oil based media: L-60)
Sampling rate [Hz] 4	Inactive range I1 / I2	[mm]	30 / 10; (when set to oil and oil based media: 30 / 30)
	Sampling rate	[Hz]	4

Continuous level sensor (guided wave radar)





Setting range				
Set point SP	[mm]	≥ 15	≥ 15L-30	
Note on setpoint SP		when set to oil and oil b	ased media: 35L-30	
Reset point rP	[mm]	≥ 10	L-35	
Note on reset point rP		when set to oil and oil b	ased media: 30L-35	
In steps of	[mm]	5		
Hysteresis	[mm]	> !	5	
Overflow switch point OP	[mm]	70L	30	
Hysteresis, OP	[mm]	10)	
Accuracy / deviations				
Repeatability	[mm]	± 5	5	
Measuring error	[mm]	±	7	
Offset error	[mm]	5		
Resolution	[mm]	1		
Temperature drift per 10 K		± 0.2	2 %	
Interfaces				
Communication interface IO-Link		ink		
Transmission type		COM2 (38,4 kBaud)		
IO-Link revision		1.1		
SDCI standard		IEC 61131-9		
Profiles		no profile		
SIO mode		yes		
Required master port class		A		
Process data analog		1		
Process data binary		4		
Min. process cycle time	[ms]	2.3		
Supported DeviceIDs		Type of operation	DeviceID	
Supported DeviceiD3		default	1250	
Operating conditions				
Ambient temperature	[°C]	060		
Storage temperature	[°C]	-2580		
Protection		IP 67		
Tests / approvals				
Approval		WHG; General building authority approval; overflow prevention		
		DIN EN 61000-6-2		
EMC		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 (102000 Hz) / 1 g (5200 Hz) with reference rod 0.5 m	
MTTF	[years]	19	198	

Continuous level sensor (guided wave radar)





Mechanical data				
Weight	[g]	402		
Material		stainless steel (1.4404 / 316L); stainless steel (1.4301 / 304); FKM; PBT; PC; PEI; TPE-V		
Materials (wetted parts)		sensor:: stainless steel (1.4305 / 303); stainless steel (1.4435 / 316L); PTFE; FKM; NBR fiber-reinforced; Probe:: stainless steel (1.4404 / 316L); Coaxial tubes for level sensors:: stainless steel (1.4301 / 304); stainless steel (1.4404 / 316L); stainless steel (1.4310 / 301); PPS fiber-reinforced		
Process connection		G 3/4 external thread		
Displays / operating elements				
		Display unit	3 x LED, green	
		Switching status	4 x LED. vellow	

Display	Switching status	4 x LED, yellow	
	Level	alphanumeric display, 4-digit	
	Parameter setting	alphanumeric display, 4-digit	
Remarks			
Notes	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

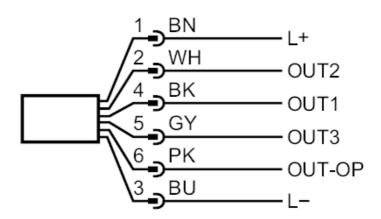


Continuous level sensor (guided wave radar)





Connection



OUT1: IO-Link / Switching output

OUT2: Switching output
OUT3: Switching output

OUT-OP: Switching output overflow prevention

Colors to DIN EN 60947-5-2

Core colors:

 BN =
 brown

 WH =
 white

 BK =
 black

 GY =
 grey

 PK =
 pink

 BU =
 blue

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Diagrams and graphs

