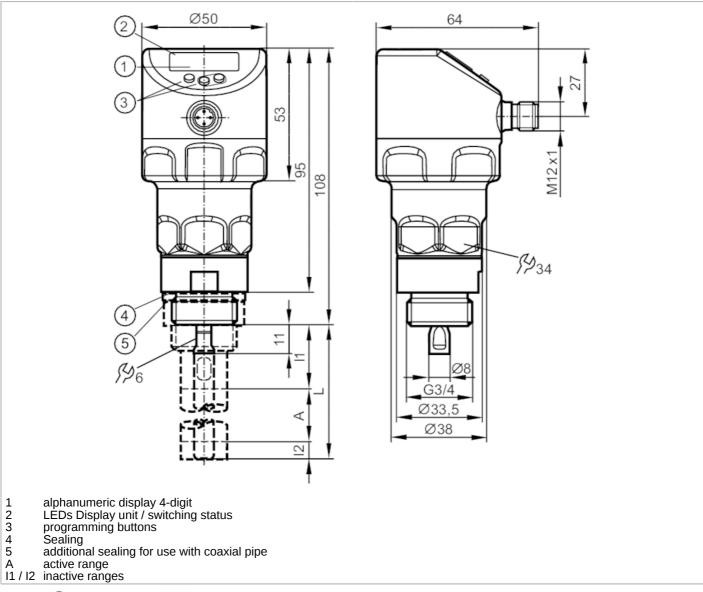
#### Continuous level sensor (guided wave radar)





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





Product characteristics						
Number of inputs and outputs		Number of digital outputs: 1; Number of analogue outputs: 1				
Probe length L	[mm]	1502000				
Process connection		threaded connection G 3/4 external thread				
Application						
Special feature		Gold-plated contacts				
Application		for industrial applications				
Media		Liquids				
Dielectric constant of the medium		≥ 1,8; (for media with a dielectric constant of 1.85 (e.g. oils), a coaxial pipe is needed for operation)				
Recommended media		water; hydrous media; oils; oil-based media				

## Continuous level sensor (guided wave radar)



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Process temperature	[°C]	-20100; (see note under remarks)
Pressure rating	[bar]	16
Vacuum resistance	[mbar]	-1000
Electrical data		
Operating voltage	[V]	1830 DC
Current consumption	[mA]	< 50
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[s]	< 3
Measuring principle		guided wave radar
Inputs / outputs		
Number of inputs and output	S	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]	420, invertible; (scalable)
Max. load	[Ω]	500
Factory setting		Electrical design: NPN
Short-circuit protection		yes
Type of short-circuit protection		pulsed
Overload protection		yes
Measuring/setting range		
Probe length L	[mm]	1502000
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
Setting range		
Set point SP	[mm]	15L-30
Note on setpoint SP		when set to oil and oil based media: 35L-30
Reset point rP	[mm]	10 L-35
Note on reset point rP		when set to oil and oil based media: 30L-35
In steps of	[mm]	1
Hysteresis	[mm]	> 5
Accuracy / deviations		
Measuring error	[mm]	± 7

## Continuous level sensor (guided wave radar)





Resolution	Offset error	[mm]		5		
Zero signal (current)						
Full signal (current)						
Interfaces						
Interfaces		[,,,,,]				
Transmission type COMZ (384 AkBaudy)  IO-Link revision 1.1  IO-Lin				± 0.2 //		
Transmission type   COM2 (38.4 kBaud)   IO-Link revision   1.1   SDCI standard   IEC 61131-9   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]   Supported DeviceIDs   Type of operation   DeviceID   default   644    Operating conditions   Ambient temperature   I*C   Protection   P 68; IP 69K    Tests / approvals   EMC   DIN EN 61000-6-2   in a closed metal tank   DIN EN 61000-6-3   in a losed metal tank   DIN EN 61000-6-3   in a losed metal tank   DIN EN 61000-6-3   in a closed metal tank   DIN EN 61000-6-3   in				IO Link		
D-Link revision						
SDCI standard   IEC 61131-9   Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis   yes   Required master port type   A   A						
Profiles Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis SIO mode Required master port type A Process data analogue Process data binary 2 Min. process cycle time [ms] Supported DeviceIDs Type of operation default State International Conditions Ambient temperature [°C] Protection Tests I approvals  EMC DIN EN 61000-6-2 DIN EN 61000-6-2 DIN EN 61000-6-4 DIN EN 61000-6-4 DIN EN 60688-2-27 DIN EN 60068-2-27 DIN EN 60068-2-6 DIN EN 60068-2-6 DIN EN 60068-2-6 DIN EN 60068-2-6 State International Conditions Materials Mechanical data  Weight Materials Materials Materials (wetted parts) Process connection  Displays / operating elements  Display of process temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive. The actual medium temperature at the process connection is decisive.						
SIO mode Required master port type Required master port type Process data analogue Process data analogue Process data binary 2 Supported DeviceIDs Supported						
Required master port type Process data analogue Process data binary  Min. process cycle time Supported DeviceIDs  Type of operation default  DeviceID default  Process data binary  Type of operation DeviceID default  Supported DeviceIDs  Type of operation DeviceID default  Process cycle time Supported DeviceIDs  Type of operation Default  Supported DeviceIDs  Type of operation DeviceID  G44  Process Connection  Process data binary  2  Type of operation DeviceID G44  DeviceID G44  Process Cycle time Supported DeviceIDs  DeviceID G44  DeviceID G44  DeviceID G44  Diverion Dive			Smart Sensor. Process			
Process data analogue Process data binary  Min. process cycle time [ms] Supported DeviceIDs  Type of operation default  DeviceID default  Div				<u> </u>		
Process data binary						
Min. process cycle time [ms] Supported DeviceIDs Type of operation default 644  Operating conditions  Ambient temperature [°C] Storage temperature [°C] Protection  DIN EN 61000-6-2 DIN EN 61000-6-2 DIN EN 61000-6-3 DIN EN 61000-6-4 DIN EN 61000-6-4 DIN EN 60068-2-27 DIN EN 60068-2-27 DIN EN 60068-2-27 DIN EN 60068-2-6  OIN EN 60068-2-6  DIN EN 60068-2-7  DIN EN 600068-2-7  DIN EN 600068-2-7  DIN EN 60006-4  In a closed metal tank  DIN EN 60006-2  DIN EN 61000-6-2  DIN EN 61000-6-3  DIN EN 61000-6-2  DIN EN 6100						
Supported DeviceIDS   Type of operation   default   644		[no.e.]				
Operating conditions		[ms]	Time of an austion			
Operating conditions       Ambient temperature     [°C]     -4080       Storage temperature     [°C]     -40100       Protection     IP 68; IP 69K       Tests / approvals       EMC     DIN EN 61000-6-2     : in a closed metal tank       DIN EN 61000-6-3     : in plastic or open metal tanks       Shock resistance     DIN EN 60068-2-27     50 g (11 ms) / 20 g (6 ms) with reference rod 0.5 m       Wibration resistance     DIN EN 60068-2-6     20 g (102000 Hz) / 1 g (5200 Hz) with reference rod 0.5 m       MTTF     [years]     216       Mechanical data       Weight     [g]     365.5       Materials (wetted parts)     stainless steel (316L/1.4404); PEI; PFA; PBT; FKM       Materials (wetted parts)     stainless steel (316L/1.4404); stainless steel (316L/1.4405); PTFE; FKM       Process connection     threaded connection G 3/4 external thread       Displays / operating elements       Display unit     3 x LED, green       switching status     2 x LED, yellow       level     alphanumeric display, 4-digit       parameter setting     alphanumeric display, 4-digit       Prof. high process temperatures: The temperature at the process connection is decisive. The actual medium temperature may be higher.	Supported DeviceiDs		•••			
Ambient temperature         [°C]         -4080           Storage temperature         [°C]         -40100           Protection         IP 68; IP 69K           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 DIN EN 60068-2-27 DIN EN 60068-2-27 DIN EN 60068-2-6 DIN EN 60068-2-2 DIN EN 60068-2-6 DIN EN 60068-2-2 DIN EN 60068-2-2 DIN EN 60068-2-6 DIN EN 60068-2-6 DIN EN 60068-2-2 DIN EN 60	Operating conditions		uerauit	0444		
Storage temperature   [°C]   -40100     P 68; IP 69K   P		[00]		40.00		
Protection   P 68;  P 69K    Tests / approvals    EMC	·					
Din En 61000-6-2		[ 0]				
EMC         DIN EN 61000-6-2 DIN EN 61000-6-3 DIN EN 61000-6-3 DIN EN 61000-6-4         : in a closed metal tank           Shock resistance         DIN EN 61000-6-4         : in plastic or open metal tanks           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 (102000 Hz) / 1 g (5200 Hz) with reference rod 0.5 m           MTTF         [years]         216           Mechanical data           Weight         [g]         365.5           Materials         stainless steel (316L/1.4404); PEI; PFA; PBT; FKM           Materials (wetted parts)         stainless steel (316L/1.4404); stainless steel (316L/1.4435); PTFE; FKM           Process connection         threaded connection G 3/4 external thread           Display / operating elements           Display unit         3 x LED, green           switching status         2 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.				IP 68; IP 69K		
DIN EN 61000-6-3 DIN EN 61000-6-4 DIN EN 60006-2-27 DIN EN 60068-2-27 DIN EN 60068-2-27 DIN EN 60068-2-6 DIN EN 60068-2-7 DIN EN 60068-2 DIN EN 60068-2 DIN EN 60068-2 DIN EN 60						
DIN EN 61000-6-4 : in plastic or open metal tanks  Shock resistance DIN EN 60068-2-27	EMC			Lin a algorid motal tords		
Shock resistance  DIN EN 60068-2-27  50 g (11 ms) / 20 g (6 ms) with reference rod 0.5 m  DIN EN 60068-2-6  DIN EN 60068-2-6  20 g (102000 Hz) / 1 g (5200 Hz) with reference rod 0.5 m  MTTF [years]  Mechanical data  Weight [g] 365.5  Materials  Materials (wetted parts) 5 stainless steel (316L/1.4404); PEI; PFA; PBT; FKM  Materials (wetted parts) 5 stainless steel (316L/1.4404); stainless steel (316L/1.4435); PTFE; FKM  Process connection 5 stainless steel (316L/1.4404); stainless steel (316L/1.4435); PTFE; FKM  Displays / operating elements  Display   Display unit						
Vibration resistance  DIN EN 60068-2-6  DIN EN 60068-2-6  20 g (102000 Hz) / 1 g (5200 Hz) with reference rod 0.5 m  MTTF  [years]  Mechanical data  Weight  [g]  Materials  Materials  Materials (wetted parts)  Process connection  Stainless steel (316L/1.4404); PEI; PFA; PBT; FKM  Materials (wetted parts)  Process connection  Threaded connection G 3/4 external thread  Displays / operating elements  Display unit  Switching status  level  parameter setting  Display alphanumeric display, 4-digit  parameter setting  Remarks  Notes  For high process temperatures: The temperature at the process connection is decisive. The actual medium temperature may be higher.	Shock resistance					
MTTF [years] 216  Mechanical data  Weight [g] 365.5  Materials Stainless steel (316L/1.4404); PEI; PFA; PBT; FKM  Materials (wetted parts) Stainless steel (316L/1.4404); stainless steel (316L/1.4435); PTFE; FKM  Process connection threaded 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  Notes For high process temperatures: The temperature at the process connection is decisive. The actual medium temperature may be higher.						
Mechanical data       Weight     [g]     365.5       Materials     stainless steel (316L/1.4404); PEI; PFA; PBT; FKM       Materials (wetted parts)     stainless steel (316L/1.4404); stainless steel (316L/1.4435); PTFE; FKM       Process connection     threaded connection G 3/4 external thread       Displays / operating elements       Display unit     3 x LED, green       switching status     2 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.	Vibration resistance		DIN EN 60068-2-6			
Weight [g] 365.5  Materials stainless steel (316L/1.4404); PEI; PFA; PBT; FKM  Materials (wetted parts) stainless steel (316L/1.4404); stainless steel (316L/1.4435); PTFE; FKM  Process connection threaded 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  Notes For high process temperatures: The temperature at the process connection is decisive. The actual medium temperature may be higher.	MTTF	[years]		216		
Materials stainless steel (316L/1.4404); PEI; PFA; PBT; FKM  Materials (wetted parts) stainless steel (316L/1.4404); stainless steel (316L/1.4435); PTFE; FKM  Process connection threaded connection G 3/4 external thread  Displays / operating elements  Display unit 3 x LED, green switching status 2 x LED, yellow level alphanumeric display, 4-digit 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.	Mechanical data					
Materials stainless steel (316L/1.4404); PEI; PFA; PBT; FKM  Materials (wetted parts) stainless steel (316L/1.4404); stainless steel (316L/1.4435); PTFE; FKM  Process connection threaded connection G 3/4 external thread  Displays / operating elements  Display Display unit 3 x LED, green 2 x LED, yellow 2 x LED, yellow 3 alphanumeric display, 4-digit 4 parameter setting alphanumeric display, 4-digit 5 parameter setting 7 x LED, yellow 8 x LED, yellow 9 x LED, yellow 9 x LED, yellow 1 x LED,	Weight	[g]		365.5		
Materials (wetted parts)  Stainless steel (316L/1.4404); stainless steel (316L/1.4435); PTFE; FKM  Process connection  threaded connection G 3/4 external thread  Displays / operating elements  Display unit 3 x LED, green  switching status 2 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.	Materials		stainless s	steel (316L/1.4404); PEI; PFA; PBT; FKM		
Process connection threaded connection G 3/4 external thread  Displays / operating elements  Display unit 3 x LED, green switching status 2 x LED, yellow level alphanumeric display, 4-digit 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.	Materials (wetted parts)			·		
Display unit  switching status  level  parameter setting  Remarks  Notes  Display unit  switching status  2 x LED, yellow  alphanumeric display, 4-digit  alphanumeric display, 4-digit  alphanumeric display, 4-digit  The temperature at the process connection is decisive. The actual medium temperature may be higher.	Process connection					
Display unit  switching status  level  parameter setting  Remarks  Notes  Display unit  switching status  2 x LED, yellow  alphanumeric display, 4-digit  alphanumeric display, 4-digit  alphanumeric display, 4-digit  The temperature at the process connection is decisive. The actual medium temperature may be higher.	Displays / operating elem	nents				
switching status  level alphanumeric display, 4-digit alphanumeric display, 4-digit alphanumeric display, 4-digit 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.			Display unit	3 x LED. green		
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.	-17			-		
Remarks  Notes  For high process temperatures: The temperature at the process connection is decisive. The actual medium temperature may be higher.				-		
Notes  For high process temperatures: The temperature at the process connection is decisive. The actual medium temperature may be higher.			parameter setting	alphanumeric display, 4-digit		
connection is decisive. The actual medium temperature may be higher.	Remarks					
	Notes					
	Pack quantity					
				•		

#### Continuous level sensor (guided wave radar)

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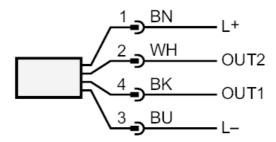


#### **Electrical connection**

Connector: 1 x M12; coding: A; 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

### Continuous level sensor (guided wave radar)





### Diagrams and graphs

Measurement deviation D at the limits of the active rod range

