Guided Level Radar

Pulscon

LTC50

- Basic device for level measurement in liquids
- Measuring range up to 12 m
- Process connection 3/4 inch thread or with adapter flange
- Temperature range up to 80 °C (176 °F)
- Pressure range up to 6 bar (87 psi)
- Up to SIL 3 acc. to IEC/EN 61508

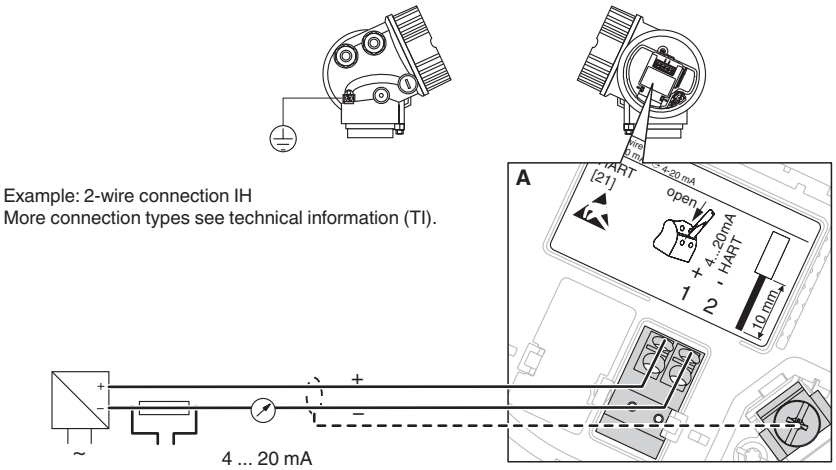
CE Ex SIL 3 Ü

Function

The device offers the following benefits:
- Reliable measurement even for changing product and process conditions
- HistoROM data management for easy commissioning, maintenance and diagnostics
- Highest reliability due to Multi-Echo tracking
- Seamless integration into control or asset management systems
- Intuitive user interface in national languages
- Approvals: ATEX, IECEx

The following interfaces are available for system integration:
- HART with 4 mA ... 20 mA analog (standard)
- PROFIBUS PA (option)

Connection



Example: 2-wire connection IH
More connection types see technical information (TI).

Technical Data

General specifications		
Measuring method		The device is a measuring system that functions according to the time-of-flight method. The distance from the reference point (process connection of the measuring device) to the product surface is measured.
Construction type		device with rod probe device with rope probe
Series		LTC50
Functional safety related parameters		

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Technical Data

Safety Integrity Level (SIL)		SIL 3
Supply		
Rated voltage	U_r	11.5 ... 35 V DC, 2-wire 10.4 ... 48 V DC, 4-wire 90 ... 253 V AC, 50/60 Hz
Input		
Measured variable		distance between reference point and product surface
Measuring range		rod probe: 4 m (13 ft) rope probe: 12 m (39 ft)
Output		
Output signal		4 ... 20 mA 2 x 4 ... 20 mA
Communication		4 ... 20 mA HART (standard) PROFIBUS PA (option)
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2006 , EN 61326-2-3:2006
Low voltage		
Directive 2014/35/EU		EN 61010-1:2010
Conformity		
Degree of protection		IEC 60529:2001
Measurement accuracy		
Accuracy		digital: ±2 mm (0.08 inch) analog: 0.02 % sum of non-linearity, non-repeatability and hysteresis included in the maximum measured error
Operating conditions		
Process conditions		
Process temperature		-20 ... 80 °C (-4 ... 176 °F)
Process pressure (static pressure)		-1 ... 6 bar (-14.5 ... 87 psi)
Dielectric constant		rod probe: DC ≥ 1.6 rope probe: DC ≥ 1.6
Ambient conditions		
Ambient temperature		-40 ... 80 °C (-40 ... 176 °F)
Mechanical specifications		
Degree of protection		IP68, NEMA 6P (24 hours in water 1.83 m (6 ft) deep) IP66, NEMA 4X
Connection		gland M20 thread M20, G1/2, NPT1/2 device plug M12, 7/8 in
Material		materials in contact with process : rod probe: 1.4404/316L rope probe: 1.4401/316 process connections: 1.4404/316L, PPS-GF40 process membran, seal: Viton
Dimensions		see technical information (TI)
Process connection		threads: G3/4, MNPT3/4 flanges: universal flange
Data for application in connection with hazardous areas		
EU-type examination certificate		see instruction manuals
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2012+A11:2013 , EN 60079-1:2007 , EN 60079-11:2012 , EN 60079-15:2010 , EN 60079-26:2007 , EN 60079-31:2009
International approvals		
IECEx approval		see instruction manuals
Indication and operation		
Display elements		without display display SD02 4-line , optional
Use		via communicator via pushbuttons
Certificates and approvals		

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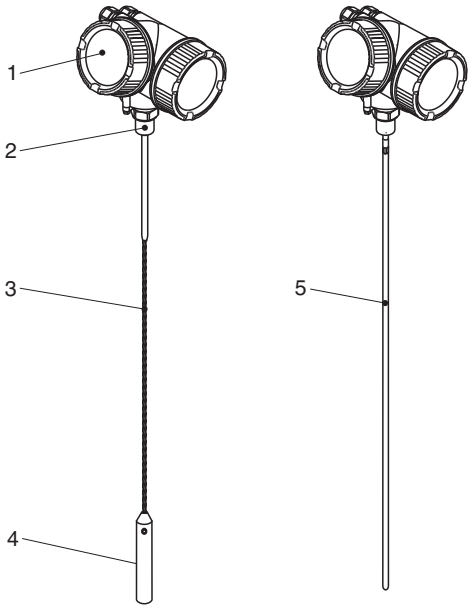
Technical Data

Overspill protection		see approval (ZE)
Telecommunications		radio license FCC
General information		
Supplementary documentation		technical information (TI) manuals, brief instructions (BA, KA) instruction manuals approval (ZE)
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com.
Accessories		
Designation		see technical information (TI)

Assembly



1 Electronics housing
2 Process connection (thread)
3 Rope probe
4 End-of-probe weight
5 Rod probe

Type Code

This overview does not mark options which are mutually exclusive.
Option with * = on request/in preparation
Option with ** = multiple options can be selected

L	T	C	5	0	–	(1)	–	(2)	(3)	(4)	–	(5)	(6)	(7)	–	(8)	(9)	.	L

LTC50	Device
LTC50	Guided level radar

(1)	Type of probe
1	in mm, rod Ø8 mm, 1.4404/316L
2	in mm, rope Ø4 mm, 1.4401/316
3	in inch, rod Ø1/6 inch, 1.4401/316
5	in inch, rope Ø1/3 inch, 1.4404/316L
X	Special version

(2)	Process connection
Threads	
G21	G3/4, ISO 228, 1.4404/316L
N21	MNPT3/4, ANSI, 1.4404/316L
XXX	Special version

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Type Code

(3)	Electrical connection
A	Gland M20, IP66/68, NEMA 4X/6P
B	Thread M20, IP66/68, NEMA 4X/6P
C	Thread G1/2, IP66/68, NEMA 4X/6P
D	Thread NPT1/2, IP66/68, NEMA 4X/6P
I	Connector M12, IP66/68, NEMA 4X/6P
M	Connector 7/8 inch, IP66/68, NEMA 4X/6P
X	Special version

(4)	Seal
2	Viton, -20 to +80 °C
X	Special version

(5)	Housing
A1	GT19 dual compartment, plastics PBT
A2	GT20dual compartment, alu coated
XX	Special version

(6)	Electrical output
AH	4-wire, 90 to 253 V AC, 4 to 20 mA HART
DH	4-wire, 10.4 to 48 V DC, 4 to 20 mA HART
ID	2-wire, 4 to 20 mA HART, switching output (PFS)
IE	2-wire, 4 to 20 mA HART, 4 to 20 mA
IH	2-wire, 4 to 20 mA HART
XX	Special version

(7)	Display, operation
B	Without display, via communicator
D	SD02 4-line, push-buttons and data backup function
E	SD03 4-line, illuminated, touch control and data backup function

(8)	Approval
C1	CSA C/US IS Cl.I,II,III Div.1 Gr.A-G, NI Cl.1 Div.2, Ex ia
C2	CSA C/US XP Cl.I,II,III Div.1 Gr.A-G, NI Cl.1 Div.2, Ex d
CB	CSA C/US IS Cl.I Div.1 Gr.A-D
CC	CSA C/US XP Cl.I Div.1 Gr.A-D
CG	CSA C/US General Purpose
E1	ATEX II 1G Ex ia IIC T6...T1 Ga
E3	ATEX II 3G Ex nA IIC T6...T1 Gc
E4	ATEX II 3G Ex ic IIC T6...T1 Gc
FI	* FM IS Cl.I,II,III Div.1 Gr.A-G, AEx ia, NI Cl.1 Div.2
FM	FM IS Cl.I Div.1 Gr.A-D
FN	* FM XP Cl.I,II,III Div.1 Gr.A-G, AEx d, NI Cl.1 Div.2
FX	FM XP Cl.I Div.1 Gr.A-D
IA	IECEx Ex ia T6...T1 Ga
IG	IECEx Ex nA IIC T6...T1 Gc
IH	IECEx Ex ic IIC T6...T1 Gc
NA	Version for non-explosion-hazardous area

Additional Options

(9)	Additional operation language
C	French
D	Spanish
E	Italian
F	Dutch
G	Portuguese
H	Polish
I	Russian
J	Turkish
K	Chinese abbreviations
L	Japanese
M	Korean
O	Bahasa
Q	Vietnamnese
R	Czech

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Type Code

(9)	Calibration
4	5-point linearity protocol

(9)	Service **
T	Customized parametrization HART

(9)	Test, certificate **
A	Material certificate, wetted metallic parts, EN 10204-3.1 inspection certificate

(9)	Additional approval **
S	SIL Functional Safety
W	WHG overfill protection

(9)	Probe design **
B	Sensor remote, 3 m cable, detachable, with mounting bracket
C	Sensor remote, 6 m cable, detachable, with mounting bracket
D	Sensor remote, 9 m cable, detachable, with mounting bracket

(9)	Firmware version
5	01.00.zz, HART, DevRev01

(9)	Marking
1	Tagging (TAG), see additional specification
2	Bus address, see additional specifications

L	Probe length
Length	Length depends on chosen type of probe: - Rod probe: length in mm, 16 mm to 4000 mm - Rope probe: length in mm, 16 mm to 12000 mm

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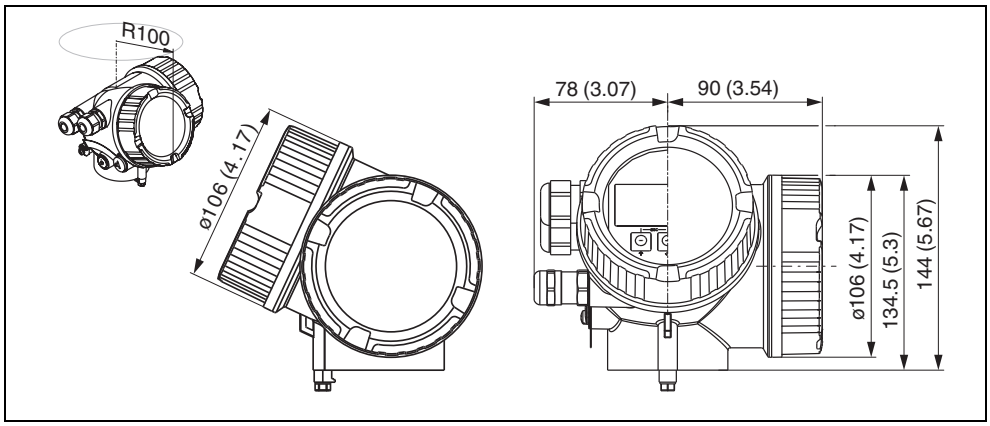
Dimensions

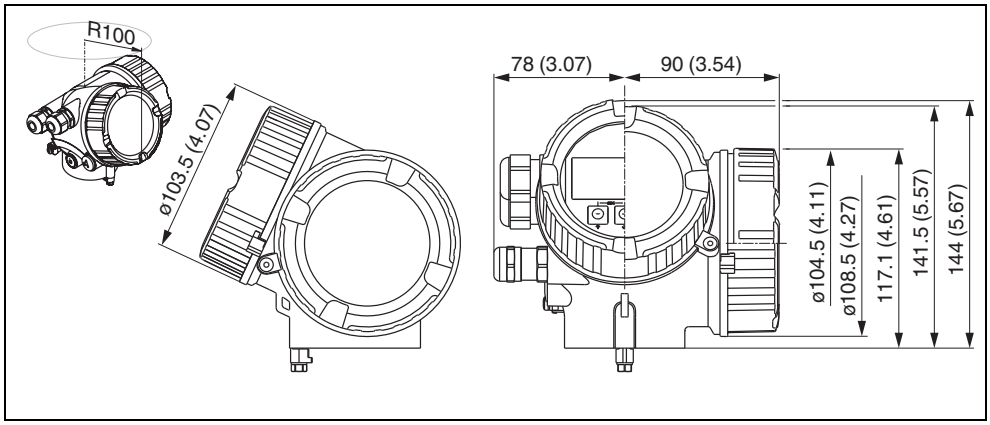
Housing GT19, plastics PBT (version A1)

Dimensions in mm (in)



Housing GT20, alu coated (version A2)

Dimensions in mm (in)



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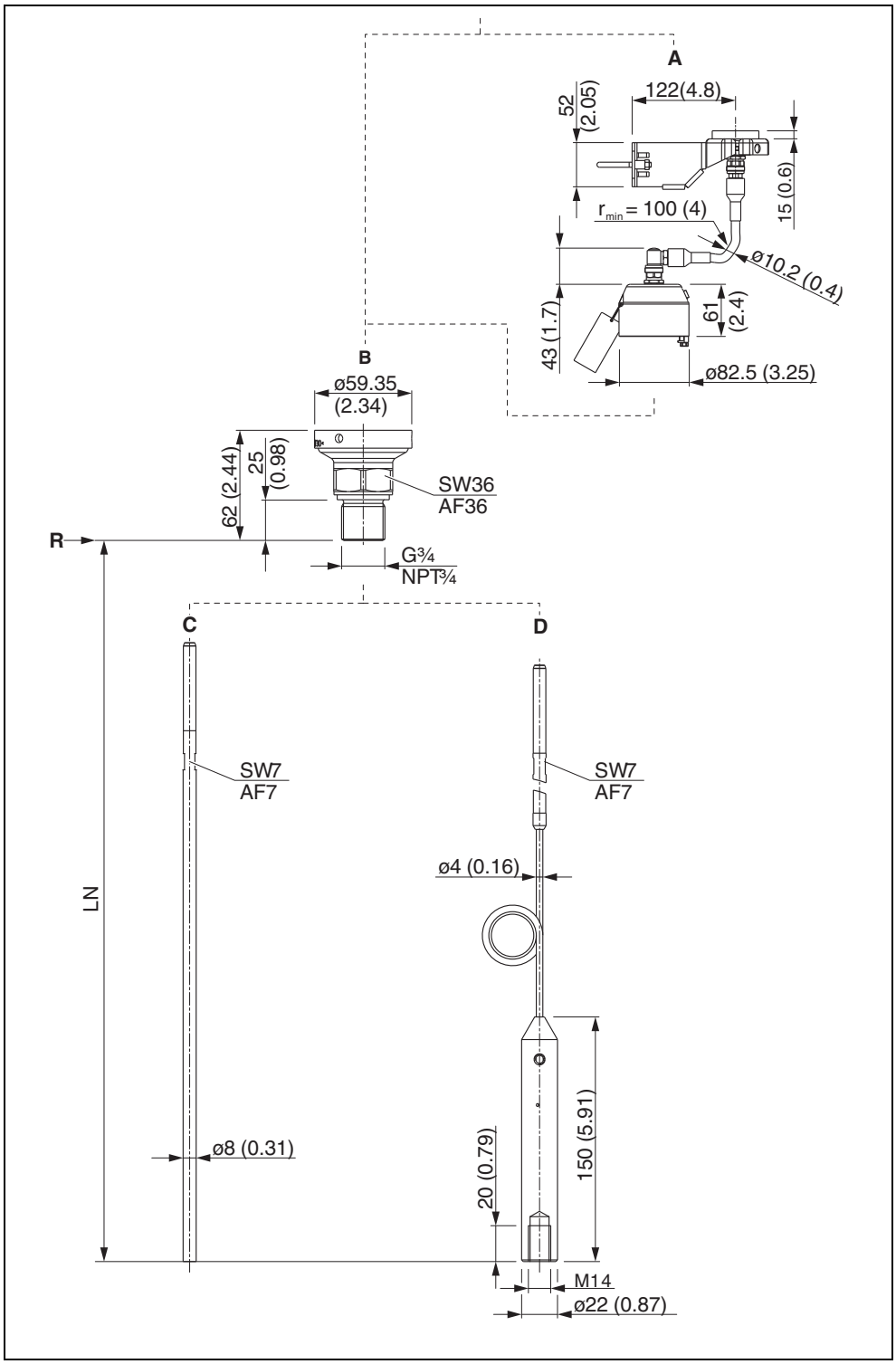
Process connections and probes

Dimensions in mm (in)



A Mounting bracket for probe design "Sensor remote" (feature "Probe design")
B Thread ISO228 G3/4 or ANSI MNPT3/4 (feature "Process connection")
C Rod probe 8 mm or 1/3 in (feature "Probe")
D Rope probe 4 mm or 1/6 in (feature "Probe")
LN Length of probe
R Reference point of the measurement

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