



Operating instructions Binary level sensor

LMTx0x

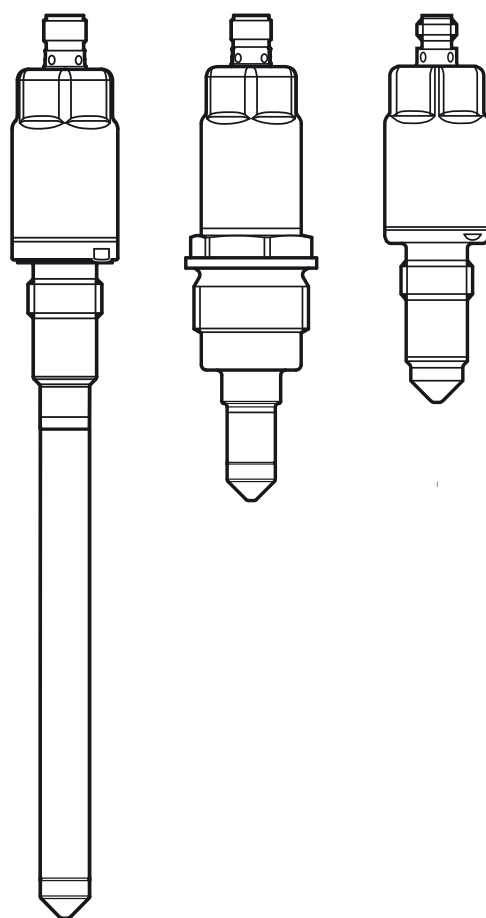
LMTx1x

LMTx2x

LXxxxx

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1 Preliminary note

Technical data, approvals, accessories and further information at www.ifm.com

1.1 Symbols used

► Instructions

> Reaction or result

[...] Designation of keys, buttons or indications

→ Cross-reference



Important note

Non-compliance may result in malfunction or interference.



Information

Supplementary note



CAUTION!

Warning of personal injury.

Slight reversible injuries may result.

2 Safety instructions

- The device described is a subcomponent for integration into a system.
 - The manufacturer is responsible for the safety of the system.
 - The system manufacturer undertakes to perform a risk assessment and to create a documentation in accordance with legal and normative requirements to be provided to the operator and user of the system. This documentation must contain all necessary information and safety instructions for the operator, the user and, if applicable, for any service personnel authorised by the manufacturer of the system.
- Read this document before setting up the product and keep it during the entire service life.
- The product must be suitable for the corresponding applications and environmental conditions without any restrictions.
- Only use the product for its intended purpose (→ Functions and features).
- Only use the product for permissible media (→ Technical data).
- If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property may occur.
- The manufacturer assumes no liability or warranty for any consequences caused by tampering with the product or incorrect use by the operator.
- Installation, electrical connection, set-up, operation and maintenance of the product must be carried out by qualified personnel authorised by the machine operator.
- Protect units and cables against damage.



The sensor is supplied without installation / connection accessories.



► Only use accessories from ifm electronic.

Accessories: www.ifm.com

The optimum function is not ensured when using components from other manufacturers.

3 Functions and features

The unit monitors the level of liquid, viscous and powdery media in tanks and pipes. It can be used for point level detection and run-dry protection. The separate setting of two switching thresholds enables the detection of two different media (can be used, for example, for phase separation or differentiation of media).

3.1 Applications

- Detection of almost all media
- Food and hygienic areas (→ 6) (→ 5.3)
- Available process connections: G1/2, G3/4 and G1
- Different probe lengths for various mounting positions and for temperature decoupling (→ 4.3.2)

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Type	Factory setting ¹⁾	Sensitivity ¹⁾	Probe length ²⁾	Process connection
LMT100	aqueous media	low	11 mm	G 1/2
LMT110	oils, greases, powders	high	11 mm	G 1/2
LMT121	media with low water content	medium	11 mm	G 1/2
LMT102	aqueous media	low	38 mm	G 1/2
LMT104	aqueous media	low	153 mm	G 1/2
LMT105	aqueous media	low	253 mm	G 1/2
LMT202	aqueous media	low	28 mm	G3/4, tuning fork contour
LMT302	aqueous media	low	38 mm	G1, tuning fork contour

¹⁾ Sensitivity adjustable (→ 8 Parameter setting)

²⁾ Probe length measured from conical sealing edge (→ Technical data)



With a suitable unit the presence of certain media can be detected while build-up or foam is suppressed.

In the following table you can find a selection of tested media and the corresponding recommended unit type. A complete list of media is available at www.ifm.com.

Medium	LMTx0x	LMTx1x	LMTx2x
Alcohol (40 % vol.)	●	○	●
Beer	●	○	●
Butter (salted / unsalted)	○	○	●
Ice cream	○	○	●
Fat	○	●	○
Honey	○	○	●
Yoghurt, plain	●	○	○
Non-dairy creamer	○	●	○
Ketchup	●	○	○
Jam	●	○	○
Milk	●	○	●
Remoulade	●	○	○
Olive oil	○	●	○
Cream (30 %)	○	○	●
Chocolate (at approx. 40 °C)	○	○	●
Water (distilled)	●	○	●
Water (tap water)	●	○	●
Sugar (granulated sugar)	○	●	○
●	The medium can be detected without the need to change the factory setting (plug & play).		
○	The medium can be detected by setting the sensitivity (IO-Link required) (→ 8 Parameter setting).		



The above-mentioned details are non-binding reference values. Depending on the composition of the listed media, deviations may occur. Media with a similar composition can be detected using equivalent unit types.

► Check the function by an application test.

3.2 Restriction of the application area

- Not suitable for abrasive media (e.g. quartz sand) and heavy bulk material.
- Not suitable for ozonised water.
- For use in aggressive media (acids and alkali):
 - ▶ Check the compatibility of the product materials beforehand (→ Technical data sheet).
- When used in media which are inhomogeneous, separate from each other thus forming separation layers (e.g. oil layer on water):
 - ▶ Check the function by an application test.
- A large amount of air or gas bubbles may lead to changed switching characteristics. This effect can be used to implement, for example, run-dry protection or pump protection (key word: cavitation).
 - ▶ Check the function by an application test. If required, adapt the sensitivity or set switching delays (→ 8 Parameter setting).
- Do not expose the probe tip to intensive sun radiation (UV radiation).

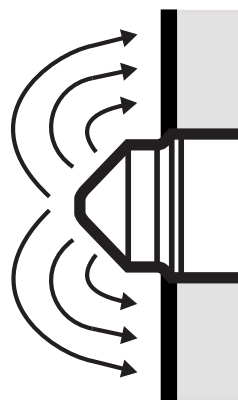
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4 Function

4.1 Measuring principle

The unit operates on the impedance spectroscopy method. It analyses the electrical behaviour of the media to be monitored in the frequency range between 50 and 200 MHz. An electrical field is generated by the probe tip which is influenced by the level. The nature of the medium as well as build-up or foam have different electrical properties that are used for the evaluation.

Fig. 4-1

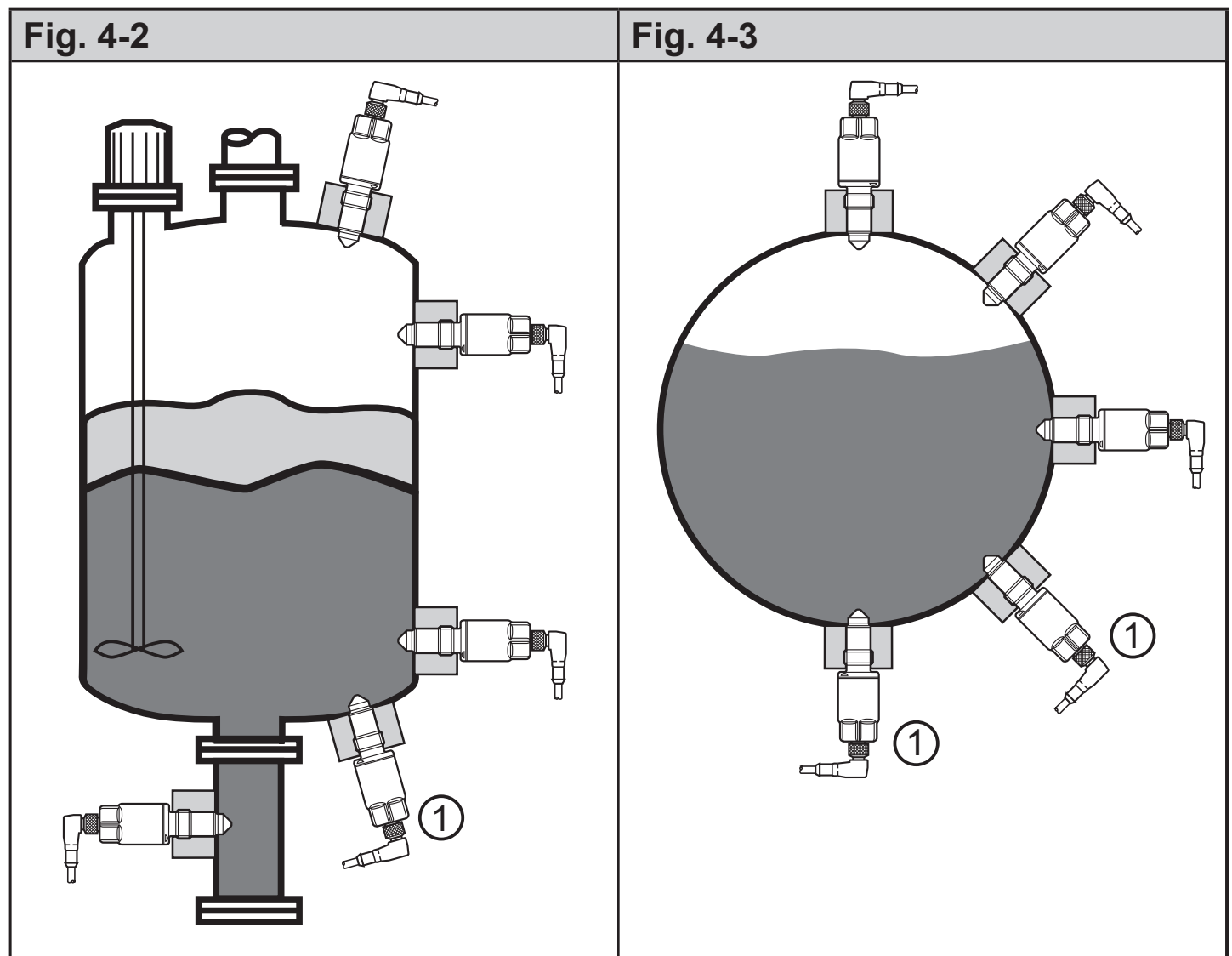


4.2 Other features of the unit

- Streamlined sensor geometry, no blockage of the pipe when unit types with short probe are used, no pressure loss
- Orientation-independent installation possible
- Defined position of the cable entry for angled sockets when ifm welding adapters are used

4.3 Application examples

4.3.1 Application examples for unit types with short probe



1: Installation position only suited to some extent

- Fig. 4-2: Possible installation positions in a tank (e.g. for point level detection or as run-dry protection).
- Fig. 4-3: Fill level monitoring in pipes

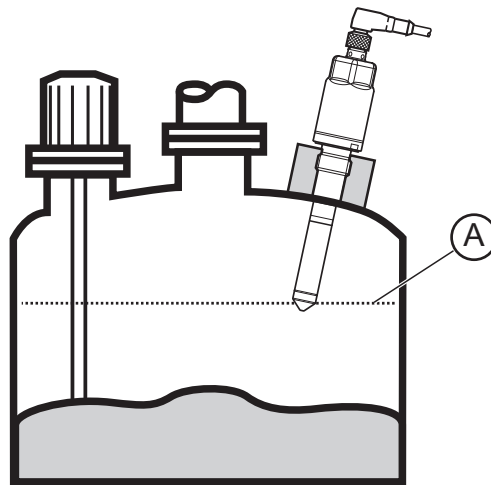


With highly adhesive and viscous media and media prone to sedimentation or build-up the installation positions (1) are only suitable to some extent. Residues might be detected as level.

4.3.2 Application examples for unit types with long probe

Installation from the top:

Fig. 4-4



A: maximum level

Fig. 4-4: For monitoring the maximum level (A) or as overflow prevention. Different probe lengths enable different response levels.

Lateral installation:

Fig. 4-5

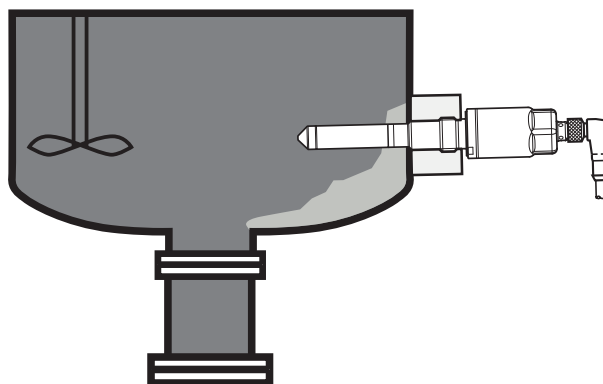


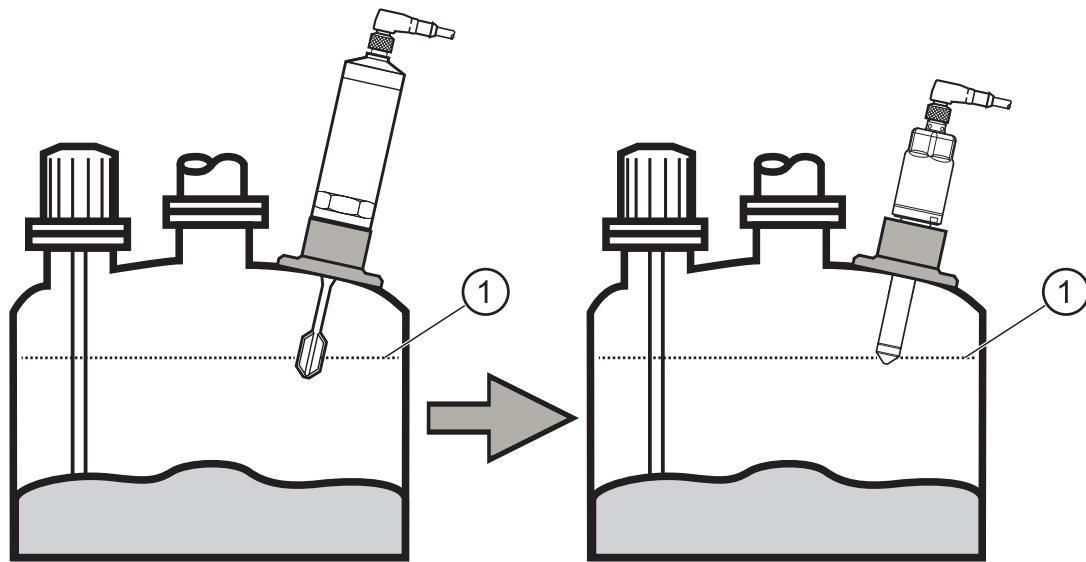
Fig. 4-5: Since the probe tip is installed further into the tank, very adhesive and viscous residues can be suppressed.



The variable clamp fitting (accessory) allows variable installation of the unit types LMT1x4 and LMT1x5 in height/installation depth. This enables, for example, a high-precision adjustment of the response level. Moreover, these types can be uncoupled thermally from the process by means of the variable clamp fitting (recessed installation of the sensor electronics). This also allows applications with higher process temperature and/or with the risk of heat accumulation (e.g. tank insulation).

4.3.3 Application example installation in existing tuning fork adapters

Fig. 4-6



1: Maximum level

Fig. 4-6: Existing tuning fork welding adapters can be used in many cases with the unit types LMT2x2 and LMT3x2 with G3/4 or G1 process connection (→ 3.1 Applications). Typically, the response level (1) is maintained in most cases.

- When process connections from other manufacturers are used:
Adhere to installation location / environment (→ 5.1).

5 Installation



CAUTION!

If the medium temperature is above 50 °C (122 °F) parts of the housing can increase in temperature to over 65 °C (149 °F).

- > Risk of burns
- ▶ Do not touch the unit
- ▶ Protect the housing against contact with flammable substances and unintentional contact.

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Before installing and removing the unit: Make sure that no pressure is applied to the system and there is no medium in the pipe or tank. Also always take into account the potential dangers related to extreme machine and medium temperatures.

5.1 Installation location / environment

- Installation preferably in closed metal tanks or pipes.
- The sensor must be in electrical contact with the metal process connection.



When installed in plastic tanks, there may be deterioration caused by electromagnetic interference.

- ▶ Check the function by an application test.
- ▶ If disturbances occur, take appropriate measures (shielding, grounding, etc.).



A correct fit and function of the unit and ingress resistance of the connection are only ensured using ifm adapters.



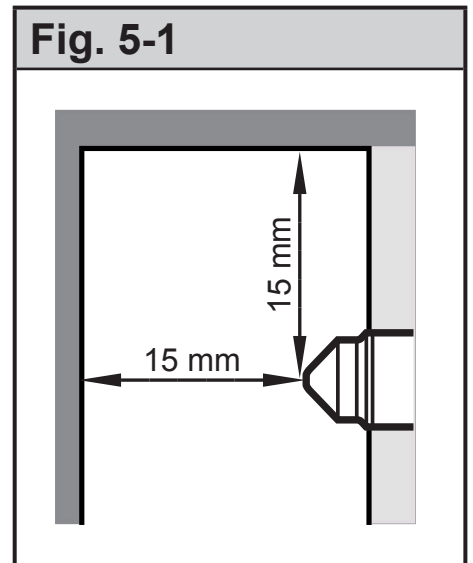
When process connections from other manufacturers are used:

- ▶ Ensure mechanical compatibility.

As a rule, ifm does not assume any responsibility for ingress resistance, hygiene and function, in particular with non-existing compatibility and incorrect installation.

When installed in restricted spaces (e.g. pipes, tank corners, structures) or in agitators and other moving objects:

- ▶ To avoid malfunction and damage on sensor and plant, adhere to a distance of min. 15 mm to neighbouring objects (e.g. pipe/tank walls, structures, other sensors) (fig. 5-1).



5.2 Notes on 3-A compliant installation

- ▶ Make sure that the sensor is integrated into the system according to 3-A.
- ▶ Use only adapters with 3-A certification and marked with the 3-A symbol (→ Accessories).

The process connection must be provided with a leakage port. This is ensured when installed using adapters with 3-A approval.

- ▶ The leakage port must be clearly visible and installed facing downwards for vertical pipes.



For use according to 3-A, special regulations apply for cleaning and maintenance.



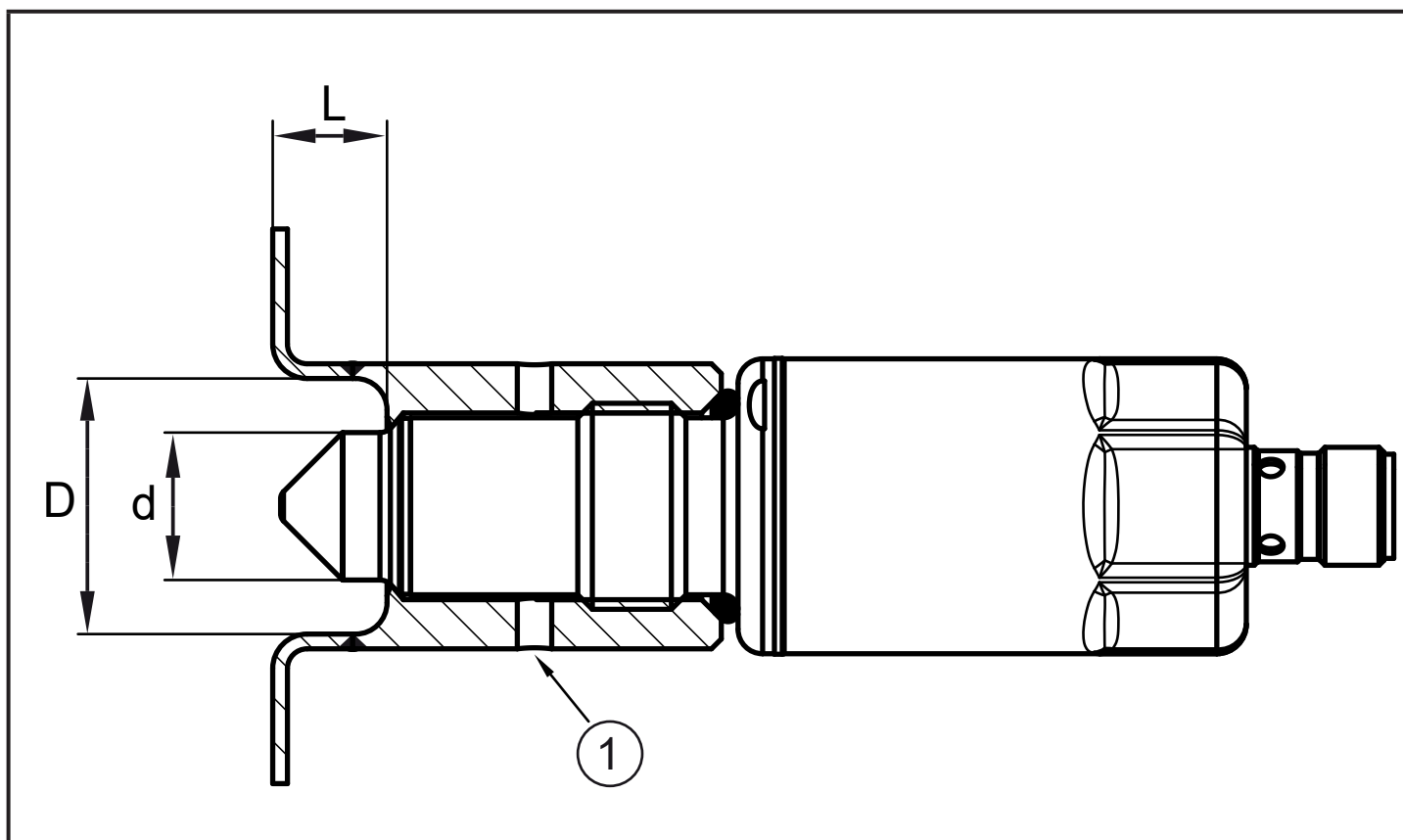
Not suitable for systems that have to meet the criteria of E1.2 / 63-03 of the 3-A standard 63-03.

5.3 Use in hygienic areas to EHEDG



The sensor is suited for CIP (cleaning in place) when installed correctly.

- ▶ Observe the application limits (temperature and material resistance) according to the data sheet.
- ▶ Ensure that the installation of the unit in the system complies with EHEDG guidelines.
- ▶ Adhere to the dimensions $L < (D - d)$ to avoid dead space.



(1) Leakage port

- ▶ Use self-draining installation
- ▶ Only use process adapters permitted according to EHEDG with special seals required by the EHEDG position paper.



The gasket of the system interface must not be in contact with the sealing point of the sensor.

- ▶ In case of structures in a tank, the installation must be flush mount. If not possible then direct water jet cleaning and cleaning of dead spaces must be possible.
- ▶ The leakage port must be clearly visible and installed facing downwards for vertical pipes.

5.4 Installation procedure

The unit is installed by means of an adapter:

- Ensure cleanliness of the sealing areas. Remove protective packaging only just before mounting. In case of damaged sealing areas replace the unit or the adapter.

5.4.1 Installation LMT1x0, LMT1x1 and LMT1x2 (hygiene-compliant)

The seal is formed by the flush front of the PEEK sealing cone (2), fig. 5-2.

- If required: Slide the supplied seal (black O-ring), (1), fig. 5-2, over the thread onto the sensor and/or check for correct position.

It seals the gap on the back between the sensor and the adapter to protect against the ingress of contamination in the thread area.

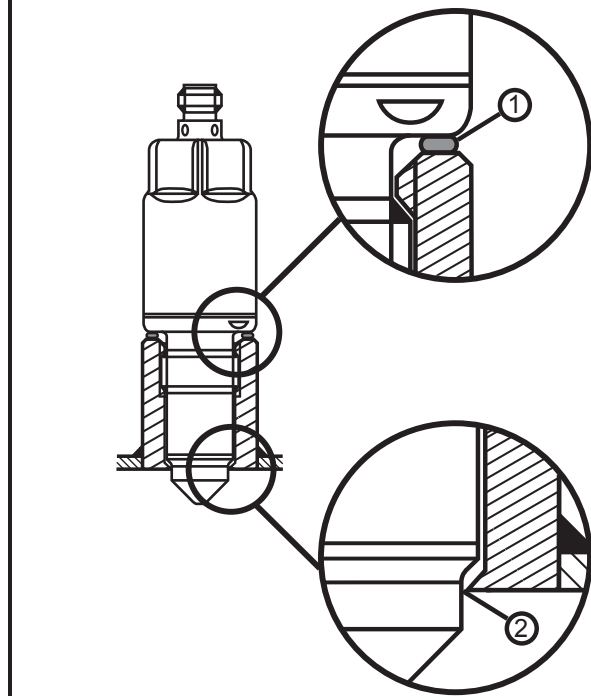


The seal between the housing and the process connection (1) can compensate for variable insertion depths but not for the system pressure.



Use no seals with larger cross sections or several seals at the same time to ensure flush-mount sealing at the PEEK sealing cone!

Fig. 5-2



1: Seal on the back (O-ring, black)

2: Sealing cone / sealing PEEK on metal

- If required: Lightly grease the contact areas using a suitable lubricating paste which has been approved for this application.
- Screw the sensor into the respective process connection and tighten it.
Max. tightening torque: 20...25 Nm
- After installation check the tank / pipe for ingress resistance.

5.4.2 Installation LMT1x4 and LMT1x5

The unit can be adapted via two sealing versions:

1. Flush mount zero-leak using metal-to-metal sealing (fig. 5-3).
2. Flush mount hygienic zero-leak using PEEK gasket (fig. 5-4).



For the hygiene-compliant sealing version a PEEK sealing ring (3), fig. 5-4 is available. It allows use in hygiene-compliant installations to EHEDG. The PEEK sealing ring is not supplied with the unit. It can be ordered separately (E43323).



The PEEK sealing ring has been rated for ifm adapters with end stop towards the medium.

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If the seal between the housing and the process connection is to withstand the system pressure:

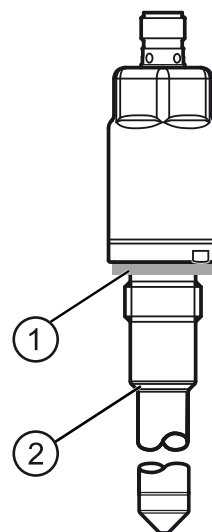


In this case no end stop for the flush mount sealing area exists and the PEEK sealing ring has to be removed.

Flush mount zero-leak using metal-to-metal sealing (2), fig. 5-3

- ▶ Insert the green flat seal (1) and/or check its position.
- ▶ If required: Lightly grease the contact areas using a suitable lubricating paste which has been approved for this application.
- ▶ Screw the sensor into the respective process connection and tighten it. Max. tightening torque: 20...25 Nm.
- ▶ After installation check the tank / pipe for ingress resistance.

Fig. 5-3

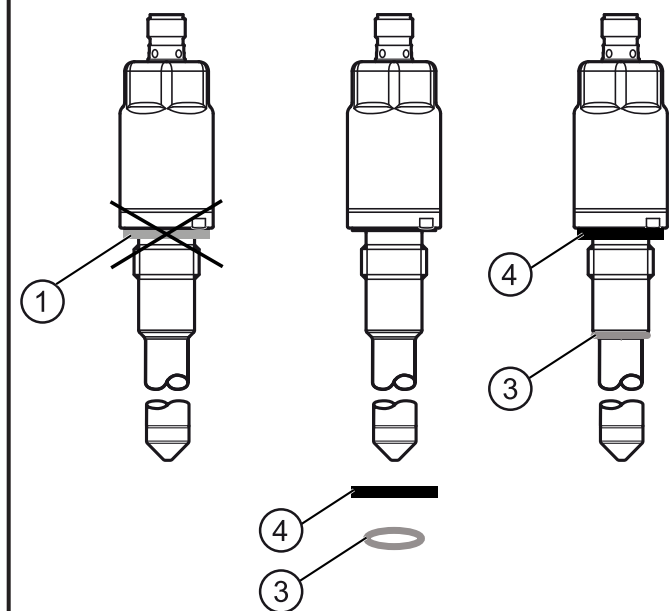


1: green flat seal
2: metal sealing cone

Flush mount hygienic zero-leak using PEEK gasket (3) fig. 5-4

- ▶ If needed, replace green flat seal (1) (on delivery) with black flat seal (4). The flat seal (4) is supplied with the article E43323.
- ▶ Slide the PEEK sealing ring (3) onto the sensor tip until you feel the end stop (cone).
- ▶ If required: Lightly grease the contact areas using a suitable lubricating paste which has been approved for this application.
- ▶ Screw the sensor into the respective process connection and tighten it. Max. tightening torque: 20...25 Nm.
- ▶ After installation check the tank / pipe for ingress resistance.

Fig. 5-4



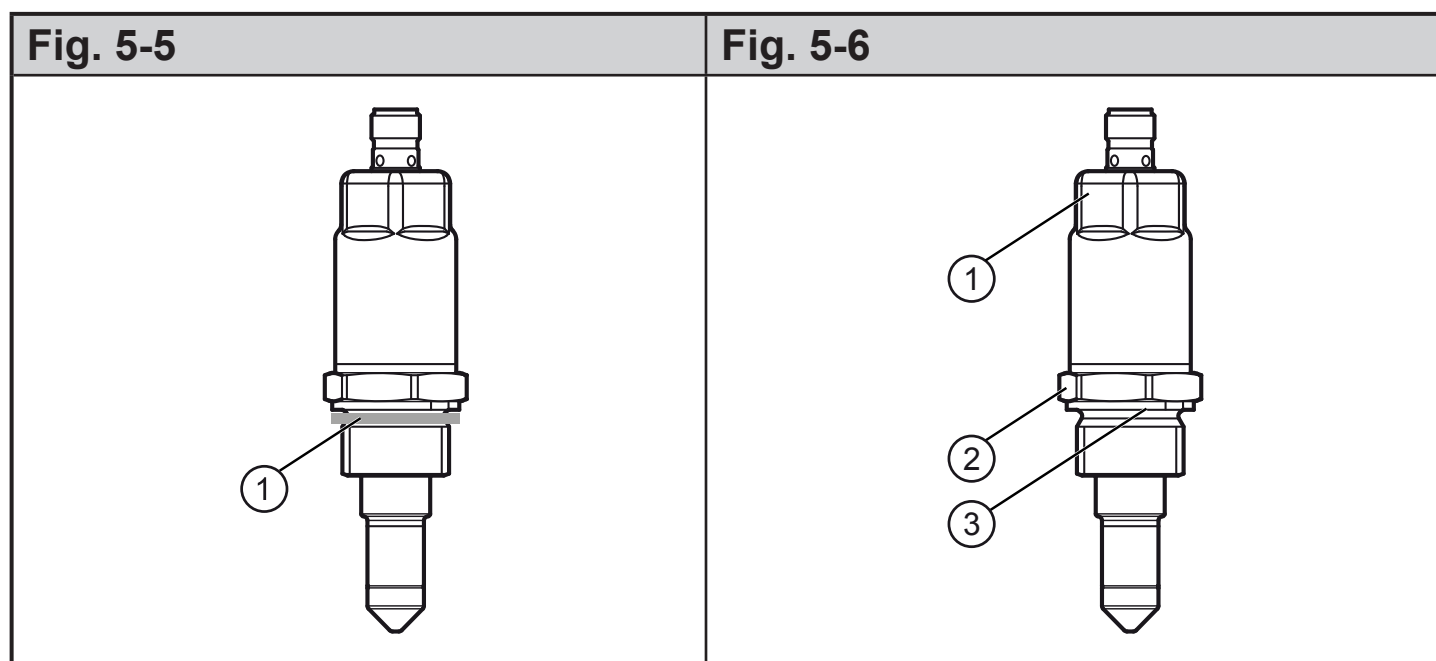
- 1: green flat seal
3: PEEK sealing ring beige
(accessory E43323)
4: black flat seal (E43323)

5.4.3 Installation LMT2x2 and LMT3x2 in existing tuning fork adapters

- Observe the installation instructions of the manufacturer of the existing adapter!
- Insert the green flat seal (1), fig. 5-5, and/or check its position. It seals the gap on the back between the sensor and the adapter.
- Slide a suitable, original O-ring and a possibly existing spacing ring of the adapter over the sensor the right way round (G 3/4) and/or check the position of the adapter (G1).
- Check the state and material of the O-ring, replace if necessary.
- Lightly grease the thread of the sensor using a lubricating paste which is suitable and approved for the application.
- Screw the sensor into the adapter and tighten at the hexagonal nut (2), fig. 5-6, until the sensor touches the end stop (3) of the welding adapter.

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LMT2x2	AF 32	75 Nm
LMT3x2	AF 36	100 Nm



1: green flat seal

1: hexagon AF 27

2: hexagon LMT2x2 AF32 / LMT3x2 AF36

3: end stop



Do not use hexagon (1) (AF 27) because the max. tightening torque is 35 Nm!

- After installation check the tank / pipe for ingress resistance.

6 Electrical connection

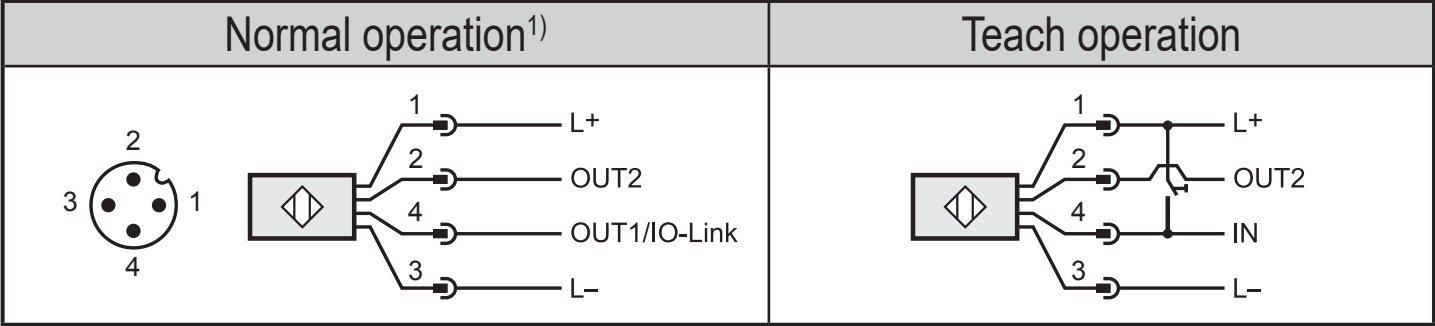


The unit must be connected by a qualified electrician.
The national and international regulations for the installation of electrical equipment must be adhered to.
Voltage supply to EN 50178, SELV, PELV



For marine applications (if approval available for the device), additional surge protection is required.

- ▶ Disconnect power.
- ▶ Connect the unit as follows:



¹⁾ factory setting

Pin	Connection	Core colours for ifm sockets
1	Ub+	brown
3	Ub-	blue
2 (OUT2)	pnP / npN switching signal	white
4 (OUT1)	<ul style="list-style-type: none">• pnp / npn switching signal• IO-Link• input for external teach signal	black



Factory setting OUT1 and OUT2: pnp switching signal



- In the factory setting, the teach operation is deactivated.
For activation: → 8.1 Parameter setting via PC and IO-Link interface
[ou1] = [tch]
- Only output OUT2 is available in the teach mode.



The connection accessories are not supplied with the unit. They can be ordered separately.

7 Interfaces

7.1 IO-Link communication interface

The device has an IO-Link communication interface which requires an IO-Link-capable module.

The IO-Link interface allows:

- direct access to process and diagnostic data,
- parameter setting of the unit outside the plant via the IO-Link interface,
- parameter setting of the unit via the IO-Link master during operation.

The IODDs necessary for the configuration of the unit, detailed information about process data structure, diagnostic information, parameter addresses and the necessary information about the required IO-Link hardware and software can be found at www.ifm.com.

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8 Parameter setting



With a suitable unit the presence of certain media can be detected while build-up or foam is suppressed. In many cases the factory setting (→ 3.1 Applications) is absolutely sufficient. For special requirements it is possible to adapt/configure the sensitivity and other functions to the corresponding application. Splashes, wave movements and air bubbles can be suppressed, for example, by setting a switching delay.

The parameters can be set before installation or during operation.



If you change parameters during operation, this will influence the function of the plant.

- ▶ Ensure that there will be no malfunctions in your plant.
- ▶ Note the potential dangers related to extreme plant conditions.

8.1 Parameter setting via PC and IO-Link interface

The interface connects sensors with IO-Link capability to a PC and provides the following options via the IO-Link interface:

- Reading of the current parameter setting
- Parameter setting of the sensor
- Reading of the current measured values and further process values

The interface is not suitable for permanent installation as an automation device.

8.2 Parameter setting via memory plug

Via a memory plug (→ Accessories), a parameter set can be written/transferred to the unit.




The memory plug can also be used to save the current parameter setting of a unit and to transfer it to other units of the same type.

8.3 Parameter setting during operation



Parameter setting during operation requires the connection to a module (master) with IO-Link capability (→ 7.1).

8.4 Parameters

Name	Description
SP1/SP2 rP1/rP2	Set points [SP1] / [SP2] and reset points [rP1] / [rP2].
	 [SPx] must be higher than [rPx]. If [SPx] is set to a value below [rPx], this is rejected by the device software.
	The values for [SPx]/[rPx] are set in per cent of the maximum process value. The process value is defined as follows: Process value in air = 0 %, process value in tap water = 100 % Setting range [SPx]: 4...98 %, step increment: 1 % Setting range [rPx]: 2...96 %, step increment: 1 %, minimum hysteresis: 2 % Reference values:
	Aqueous / water-based media:
	Media with low water content:
ou1 ou2	SPx = 62 %, rPx = 54 % (factory setting LMTx0x)
	SPx = 35 %, rPx = 29 % (factory setting LMTx2x)
	Oils, fats, powders:
	SPx = 8 %, rPx = 5 % (factory setting LMTx1x)
ou1 ou2	[ou1] / [ou2]: output function for OUT1/OUT2 - [Hno] = hysteresis function/normally open - [Hnc] = hysteresis function/normally closed - [Fno] = window function/normally open - [Fnc] = window function/normally closed Parameter [ou1] also provides the option [tch]: - [tch] = configure pin 4 as input for the teach signal (→ 6),(→ 8.8))
FOU1 / FOU2	Behaviour of the outputs OUT1 / OUT2 in case of a fault - [OFF] = output opens in case of a fault (factory setting) - [On] = output closes in case of a fault
dFo	Delay time of the outputs in case of a fault Setting range 0...5 s, step increment 0.2 s
dS1*) dS2*)	Switch-on delay for OUT1 or OUT2 Setting range 0...10 s, step increment 0.2 s *) Parameter [dSx] is not available for LMT100, LMT110 and LMT121.
dr1 dr2	Switch-off delay for OUT1 / OUT2 Setting range 0...10 s, step increment 0.2 s
P-n	Output polarity for the outputs (PnP or nPn)

8.5 System commands

tSP1	Teach switch point 1 to medium 1 • Full adjustment to medium 1 to be detected, automatically sets the switching thresholds SP1/rP1 for OUT1.
tSP2	Teach switch point 2 to medium 2 • Full adjustment to medium 2 to be detected, automatically sets the switching thresholds SP2/rP2 for OUT2.
rES	Restore the factory setting

8.6 Unit locking / data storage

The IO-Link master stores all parameters of the connected sensor (data storage) if configured in the master. When a sensor is replaced by a sensor of the same type, the parameters of the old sensor are automatically written to the new sensor if configured in the master and if the sensor allows this.

For safety reasons the data storage can be refused by the sensor. Factory setting: [Open]

Data storage	<ul style="list-style-type: none">- [Open] = unit allows parameter download from the master- [Locked] = unit refuses parameter download from the master
--------------	--

8.7 Full adjustment via IO-Link

Full adjustment enables optimum sensitivity of the unit to be set to the medium to be detected (build-up and foam are suppressed):

- ▶ Fill the tank/pipe.
 - > The probe tip must be completely covered with the medium.
- ▶ Execute the system command [tSP1] or [tSP2].
 - > The unit automatically sets the switching thresholds [SPx]/[rPx].
- ▶ Check the function by an application test.

8.8 Parameter setting via the teach input

The teach input must be activated. This requires previous configuration via IO-Link (→ 8.4), parameter [ou2] = [tch].



Output OUT2 must be configured as hysteresis function (Hnc or Hno). If the window function is set, an error during teaching results (→ 8.8.3 Fault during the teach operation).



Only output OUT2 is available in the teach mode. In the teach mode the LEDs indicate the switching status of output OUT2.

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8.8.1 Full adjustment via teach input

- Fill the tank until the probe tip is completely covered.
- Apply Ub+ to pin 4 for $> 2 \dots < 5$ s.



The tool which is available for this process is the teach button (accessory).

- > LEDs are flashing with 2 Hz (▬▬▬▬).
- > After teaching the LEDs are on for 2 s, then the colours change to regular operating mode (table → 8.8.2).

8.8.2 Changing the output function

Output OUT2 can be changed from "NC" (Hnc) to "NO" (Hno) and vice versa.

- Apply Ub+ to pin 4 for $> 5 \dots < 10$ s.
- > LEDs are flashing, first with 2 Hz (▬▬▬▬), after 5 s with a 1 Hz double flashing (▬▬▬▬▬▬).
- > After the change the LEDs are on for 2 s. Then the colours change to regular operating mode (table below).
- > After the successful change, the LEDs are on as follows:

No medium detected	LEDs = yellow (for Hnc)	LEDs = green (for Hno)
Medium detected	LEDs = green (for Hnc)	LEDs = yellow (for Hno)

8.8.3 Fault during the teach operation

The teach operation is cancelled in case of a fault:

- > LEDs are flashing green/yellow with 8 Hz.
- > The unit returns to the operating mode with unchanged settings.

Possible faults:

- Time error (teach time too long / too short)
- Internal sensor signal not clear
- Wrong output function: (→ 8.8 Parameter setting via the teach input)
- Process value too low (< 9 %, e.g. for powders),
SPx/rPx must be set manually (→ 8.1 Parameter setting via PC and IO-Link interface).

9 Operation

After power-on the device is in the operating mode. It carries out its evaluation functions and switches the outputs.

Outputs OUT1 and OUT2 complement each other.



The following table shows the factory settings. In this state OUT1 = Hno and OUT2 = Hnc.

- Check whether the unit operates correctly.

9.1 Switching states and display by LEDs

Operating status	LEDs	OUT1	OUT2
Unit ready for operation, no medium detected	green	OFF	ON
Unit ready for operation, medium detected	yellow	ON	OFF
No operating voltage	OFF	OFF	OFF
Short circuit output 1	flashing yellow	-	1)
Short circuit output 2	flashing yellow	1)	-
Error / failure	-	OFF	OFF
Teach operation	(→ 8.8.1) and (→ 8.8.2)		
Fault during the teach operation	LEDs are flashing green/yellow with 8 Hz		

¹⁾ according to the level



The LEDs always indicate the switching status of output OUT1 (exception: teach mode (→ 8.8)).

9.2 System events IO-Link

Code	Type	Description
20480 d / 50 00 h	Error	Hardware fault in the unit. ► Replace device
25376 d / 63 20 h	Error	Parameter error ► Verify the data sheet and the values
30480 d / 77 10 h	Error	Short circuit ► Verify the installation
36350 d / 8D FE h	Warning	Test event. Event appears if index 2 is set to the value 240, event disappears if index 2 is set to the value 241
36351 d / 8D FF h	Warning	Test event. Event appears if index 2 is set to the value 242, event disappears if index 2 is set to the value 243

UK

10 Maintenance, repair, disposal

- From time to time check the probe tip for build-up and damage. Clean it in case of heavy soiling. In case of damage replace the unit.
- After removal and before reinstallation of the unit carefully clean the probe neck and the installation slot - especially the sealing cone - with appropriate methods to ensure that the unit is resistant to ingress and without dead space.



- If the variable clamp fitting is used (→ 4.3.2):
Check the correct position of the safety chain or the securing wire between the clamp fitting and the sensor from time to time.

- Replace if damaged!



When the medium is changed, it may also be necessary to use another type of unit or adapt the sensitivity (→ 3.1 Applications).

- It is not possible to repair the unit.
- After use dispose of the unit in an environmentally friendly way in accordance with the applicable national regulations.

- In case of returns ensure that the unit is free from soiling, especially from dangerous and toxic substances.

For transport only use appropriate packaging to avoid damage of the unit.

11 Notes on the regulation (EC) 1935/2004

The following components of the product are designed for permanent contact with food according to the regulation (EC) 1935/2004:

- Sensor tip made of PEEK
- Sealing ring made of PEEK (→ 5.4.2)
- Sealing ring made of FKM (LMT104 / LMT105)

12 Factory setting

	LMTx0x	LMTx1x	LMTx2x	User settings
SP1	62 %	8 %	35 %	
rP1	54 %	5 %	29 %	
ou1	Hno	Hno	Hno	
SP2	62 %	8 %	35 %	
rP2	54 %	5 %	29 %	
ou2	Hnc	Hnc	Hnc	
FOU1	OFF	OFF	OFF	
FOU2	OFF	OFF	OFF	
dS1*)	0.0	0.0	0.0	
dS2*)	0.0	0.0	0.0	
dr1	0.0	0.0	0.0	
dr2	0.0	0.0	0.0	
P-n	PnP	PnP	PnP	
dFo	0.0	0.0	0.0	

Percentage values refer to the process value (→ 8 Parameter setting).

*) Parameter is not available for LMT100, LMT110 and LMT121

More information at www.ifm.com