

Operating instructions



Digital tank contents indicator

DTA 10

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1 About these operating instructions

These operating instructions describe the digital tank contents indicator "DTA 10" (also referred to as "product" in these operating instructions). These operating instructions are part of the product.

- You may only use the product if you have fully read and understood these operating instructions.
- Verify that these operating instructions are always accessible for any type of work performed on or with the product.
- Pass these operating instructions as well as all other product-related documents on to all owners of the product.
- If you feel that these operating instructions contain errors, inconsistencies, ambiguities or other issues, contact the manufacturer prior to using the product.

These operating instructions are protected by copyright and may only be used as provided for by the corresponding copyright legislation. We reserve the right to modifications.

The manufacturer shall not be liable in any form whatsoever for direct or consequential damage resulting from failure to observe these operating instructions or from failure to comply with directives, regulations and standards and any other statutory requirements applicable at the installation site of the product.

2 Information on safety

2.1 Safety messages and hazard categories

These operating instructions contain safety messages to alert you to potential hazards and risks. In addition to the instructions provided in these operating instructions, you must comply with all directives, standards and safety regulations applicable at the installation site of the product. Verify that you are familiar with all directives, standards and safety regulations and ensure compliance with them prior to using the product.

Safety messages in these operating instructions are highlighted with warning symbols and warning words. Depending on the severity of a hazard, the safety messages are classified according to different hazard categories.

NOTICE

NOTICE indicates a hazardous situation, which, if not avoided, can result in equipment damage.

2.2 Intended use

This product may only be used for measuring the level of the following liquids:

- Fuel oil (density 0.84 g/cm³)
- Water (density 1 g/cm³)
- Carburants paraffiniques HVO (~0.78 g/cm³) and GTL (~0.76 g/cm³)
- Variable (density adjustable from 0.5 - 1.5 g/cm³)

Any use other than the application explicitly permitted in these operating instructions is not permitted and causes hazards.

Verify that the product is suitable for the application planned by you prior to using the product. In doing so, take into account at least the following:

- All directives, standards and safety regulations applicable at the installation site of the product
- All conditions and data specified for the product
- The conditions of the planned application

In addition, perform a risk assessment in view of the planned application, according to an approved risk assessment method, and implement the appropriate safety measures, based on the results of the risk assessment.

Take into account the consequences of installing or integrating the product into a system or a plant.

When using the product, perform all work and all other activities in conjunction with the product in compliance with the conditions specified in the operating instructions and on the nameplate, as well as with all directives, standards and safety regulations applicable at the installation site of the product.

2.3 Predictable incorrect application

The product must never be used in the following cases and for the following purposes:

- Hazardous area (EX)
 - If the product is operated in hazardous areas, sparks may cause deflagrations, fires or explosions.
- Use as safety-related equipment
 - The product does not replace the function of a level sensor at the fuel oil tank
- Use with corrosive liquids
- Use as overfill prevention system
- Use for billing purposes (the product is not officially calibrated)
- In conjunction with products which are used for health-saving or life-saving purposes or whose operation may incur hazards to humans, animals or property

2.4 Qualification of personnel

Only appropriately trained persons who are familiar with and understand the contents of these operating instructions and all other pertinent product documentation are authorized to work on and with this product.

These persons must have sufficient technical training, knowledge and experience and be able to foresee and detect potential hazards that may be caused by using the product.

All persons working on and with the product must be fully familiar with all directives, standards and safety regulations that must be observed for performing such work.

2.5 Personal protective equipment

Always wear the required personal protective equipment. When performing work on and with the product, take into account that hazards may be present at the installation site which do not directly result from the product itself.

2.6 Modifications to the product

Only perform work on and with the product which is explicitly described in these operating instructions. Do not make any modifications to the product which are not described in these operating instructions.

3 Transport and storage

The product may be damaged as a result of improper transport or storage.

NOTICE

INCORRECT HANDLING

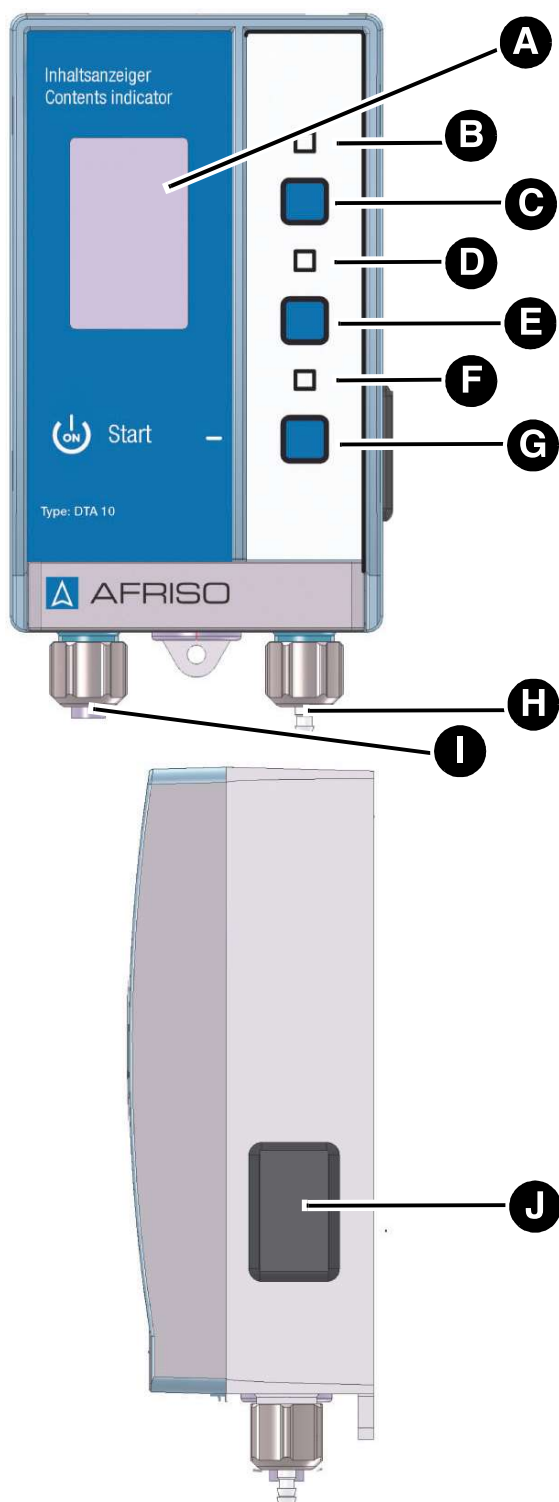
- Verify compliance with the specified ambient conditions during transport or storage of the product.
- Use the original packaging when transporting the product.
- Store the product in a clean and dry environment.
- Verify that the product is protected against shocks and impact during transport and storage.

Failure to follow these instructions can result in equipment damage.

4 Product description

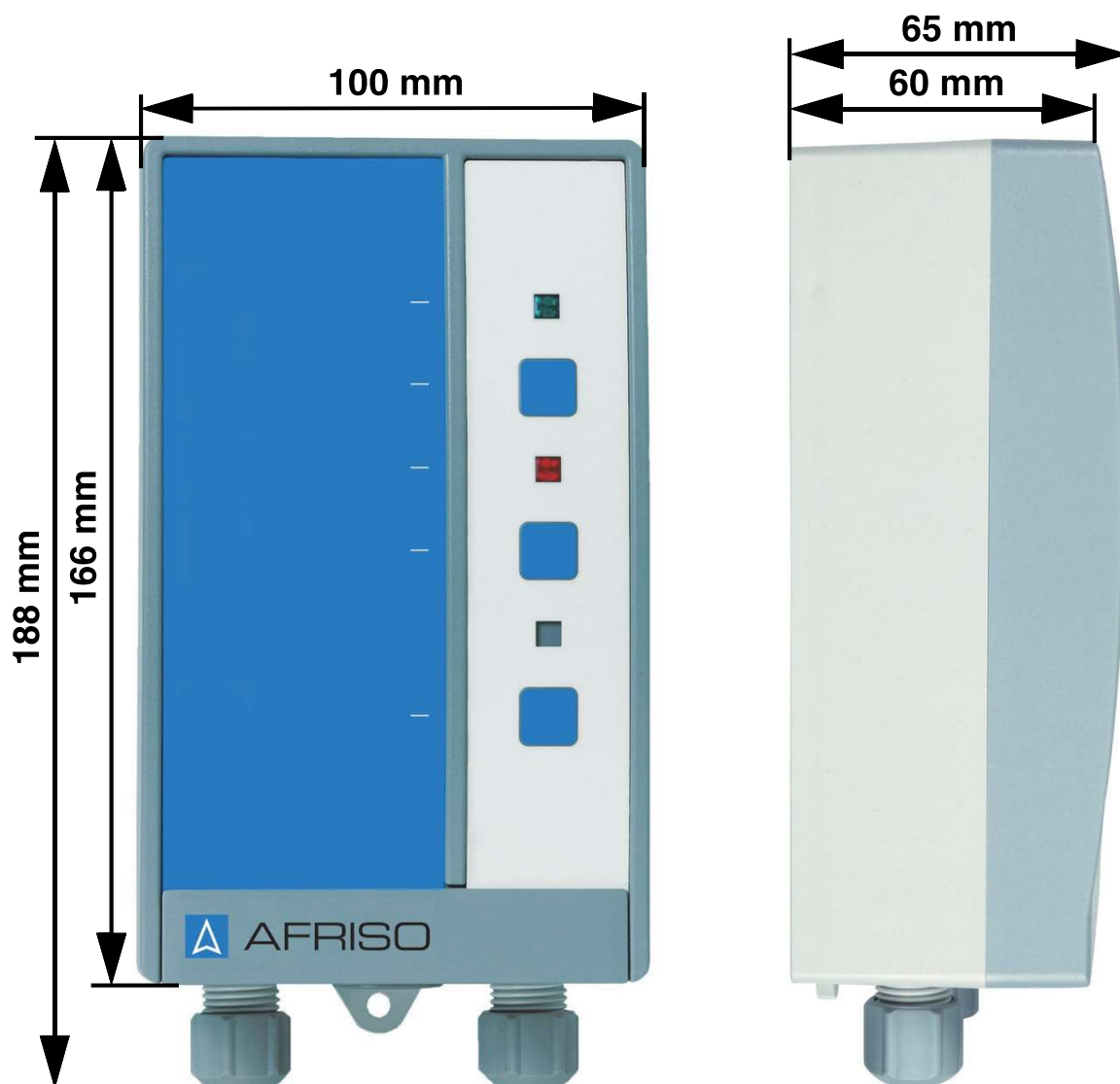
4.1 Overview

The product consists of a control unit and a measuring line. The control unit contains the display and the controls in an impact-resistant plastic housing.

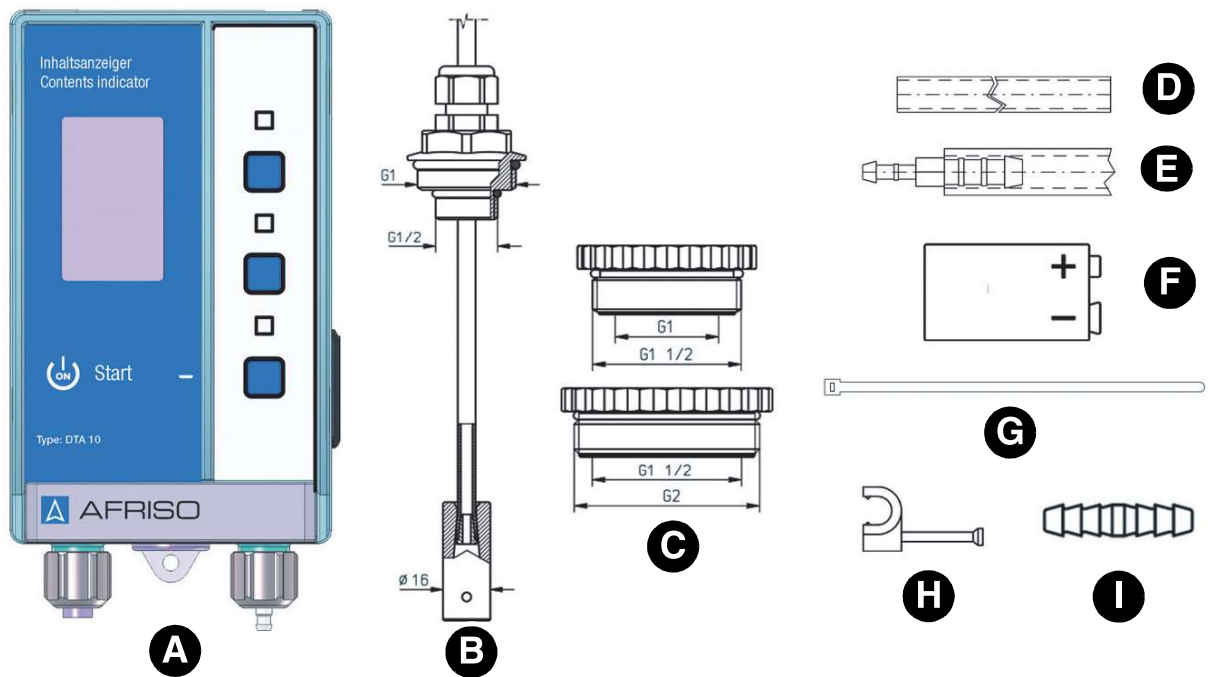


- A. Digital display
- B. No function
- C. Upper key (End/Language)
- D. No function
- E. Centre key (Info/Parameters)
- F. No function
- G. Lower key (Start)
- H. Connection for measuring line
- I. Blind plug
- J. Battery compartment (for 9 V monobloc battery)

Dimensions



4.2 Scope of delivery



- | | |
|---|---|
| A. Control unit | F. 9 V monobloc battery |
| B. Measuring line (20 m) with bottom part | G. Cable tie (2 pieces) |
| C. Screw connector kit
G1½ a x G1 i, G2 a x G1½ i | H. Nail cable clips (25 pieces) |
| D. PVC hose (100 cm) | I. Hose adapter |
| E. PVC hose (15 cm) with hose connector (for connection to metal pipes) | Bag of accessories (not shown) with two screws and two dowels for wall mounting |

4.3 Application example



4.4 Function

The product consists of a battery-operated control unit with digital display. The following parameters can be entered at the control unit:

- Language (German, English, French, Polish)
- Medium (fuel oil, water and variable)
- Tank shape (linear, spherical and cylindrical horizontal)
- Tank height (in cm)
- Volume (in litres)
- Alarm (percentage)

When the lower key is pressed, the product measures the level in the tank.

If during a measurement, the level is below the adjusted minimum level a visual alarm is triggered. The backlight of the display flashes red.

4.5 Approvals, conformities, certifications

The product complies with:

- EMC Directive (2014/30/EU)
- RoHS Directive (2011/65/EU)

4.6 Technical data

Parameter	Value
General specifications	
Dimensions housing (W x H x D)	100 x 188 x 65 mm
Measuring line	PVC hose 4 x 1 mm Length 20 m Bottom part stainless steel
Housing material	Wall mounting housing made of impact-resistant plastic (ABS)
Measuring accuracy	± 3.0 cm (liquid column)
Function	Push-to-Read level measurement
Display	Multi-coloured, backlit graphical display (30 x 50 mm) <ul style="list-style-type: none"> - Blue = Operation - Red = Alarm - Green = Parameterisation Volume indication in litres (5 digits), in % and liquid level in cm
Ambient conditions	
Ambient temperature operation	0 ... 50 °C
Ambient temperature storage	-20 ... 65 °C
Temperature of the medium	0 ... 50 °C
Measuring range (tank height)	
Fuel oil	Max. 4.0 m
Water	Max. 3.5 m
Variable	Depends on density

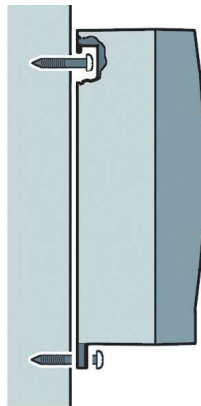
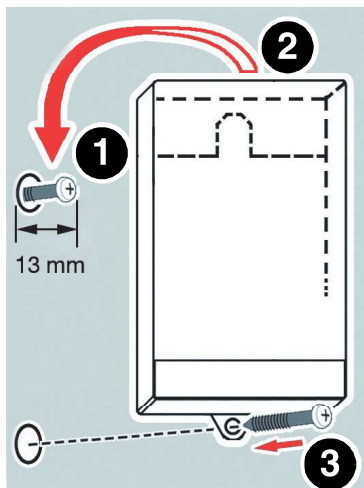
Parameter	Value
Electrical data	
Supply voltage	9 V monobloc battery
Service life of battery	2 years (with a measuring interval of 24 hours)
Emitted interference	EN 61000-6-3
Noise immunity	EN 61000-6-1
Degree of protection (EN 60529)	IP 20

5 Mounting

5.1 Mounting the product

Mount the control unit to the wall. Use the enclosed dowels, depending on the type of wall.

- ⇒ Verify that the control unit is mounted to an even, rigid and dry wall at eye level.
- ⇒ Verify that the control unit is accessible and easy to oversee at all times.
- ⇒ Verify that the control unit is protected against water and splash water.
- ⇒ Verify that the control unit is not mounted in a humid room.
- ⇒ Verify that the permissible ambient temperature is not exceeded.



1. Mount the upper screw to the wall.
2. Fit the control unit.
3. Align the control unit.
4. Fasten the control unit by screwing the bottom lug to the wall.

5.2 Electrical connection

NOTICE

INCORRECT HANDLING

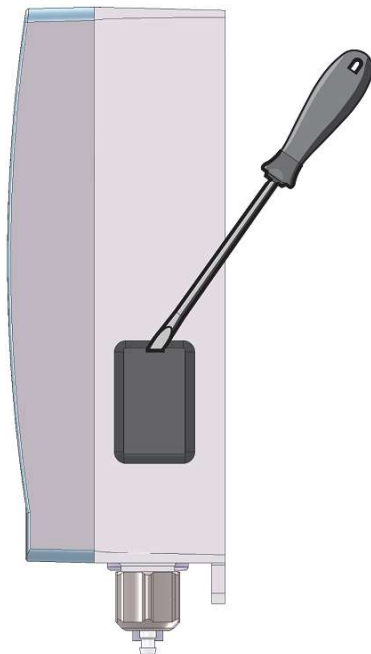
The product may only be opened at the side at the battery compartment.

- Only open the product to insert or replace the 9 V monobloc battery.

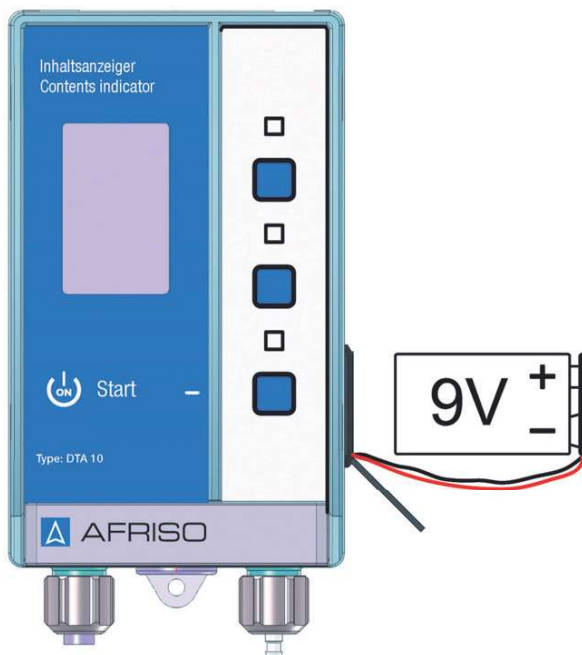
Failure to follow these instructions can result in equipment damage.

5.2.1 Inserting/connecting the battery

The 9 V monobloc battery is not factory-installed in the control unit. The monobloc battery is contained in the bag of accessories.



1. Open the cover of the battery compartment using a slotted screwdriver.



2. Connect the 9 V monobloc battery.
3. Push the 9 V monobloc battery into the battery compartment (verify correct mounting position).
4. Close the cover of the battery compartment.

5.3 Mounting the measuring line to the tank

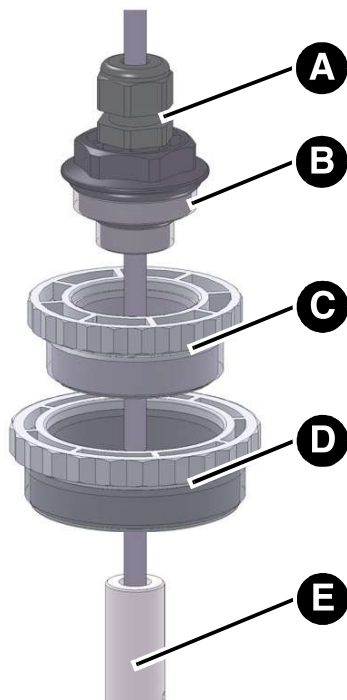
NOTICE

INCORRECT MEASUREMENT RESULTS

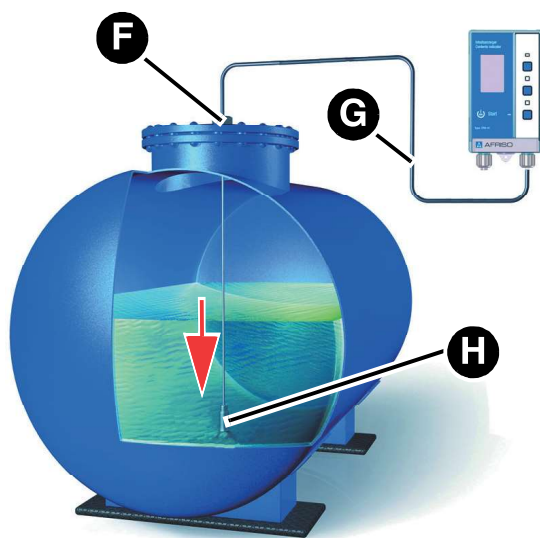
- Verify that the measuring line is not bent or damaged.

Failure to follow these instructions can result in equipment damage.

If the measuring line does not have a steady gradient to the tank or if condensate can collect in the measuring line, use a condensate trap.



1. Select the threaded adapter (screw connector kit) suitable for the tank connection.
- A. Screw connector for holding the measuring line
- B. Connection thread (G1½ and G1)
- C. Threaded adapter (G1 to G1½)
- D. Threaded adapter (G1½ to G2)
- E. Bottom part



1. Lower the bottom part (H) to the bottom of the tank.
2. Tighten the screw connection (F) so that the measuring line can no longer be moved.
3. Use the enclosed nail cable clips to fasten the measuring line (G), if necessary.

5.4 Mounting the measuring line to the control unit



1. Shorten the measuring line (B) to the required length.
2. Pull the measuring line (B) over the hose adapter (A) at the control unit.
3. Fasten the measuring line (B) with a cable tie to the hose adapter (A).

It is possible to connect the product to existing measuring lines (metal pipes) of a decommissioned pneumatic tank contents indicator (for example, Unitop/Unitel) using the two enclosed cables ties.

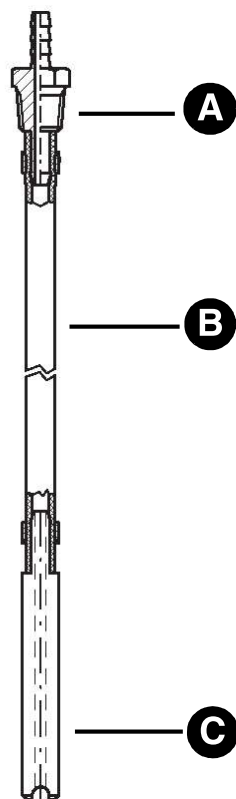
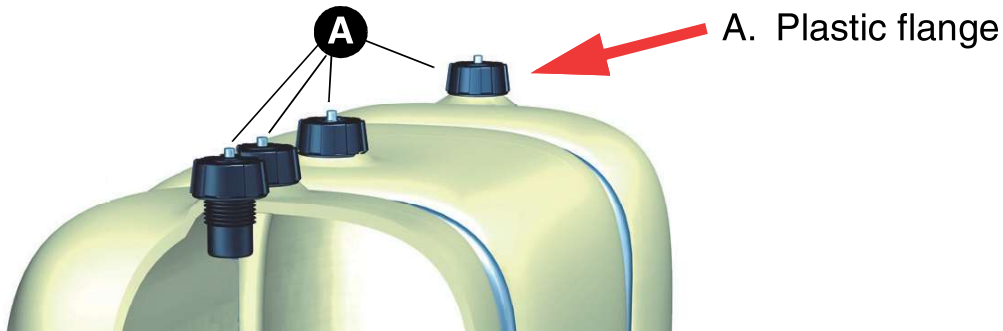
If you use an existing measuring line, verify that the measuring line extends all the way to the bottom tank bottom.

The measuring line (PVC) may harden over time if it is in contact with fuel oil. Hardening of the measuring line does not interfere with the operation of the product.

5.5 Mounting the mounting kit for battery tanks "Pneum." (optional)

Depending on the manufacturer, battery tanks have one or more plastic flanges (A). The plastic flanges are provided for filling, venting or withdrawal.

The mounting kit is installed in one of the plastic flanges (A).



A. Connection piece with conical thread

B. Hose

C. Weight Ø 9 mm

1. Check whether the plastic flange of the battery tank has a hole Ø 10 mm to Ø 10.5 mm which is closed by means of a blind plug.
2. Remove the blind plug.
3. Push the weight (C) and the hose (C) through the hole.
4. Screw the connection piece (A) into the hole.

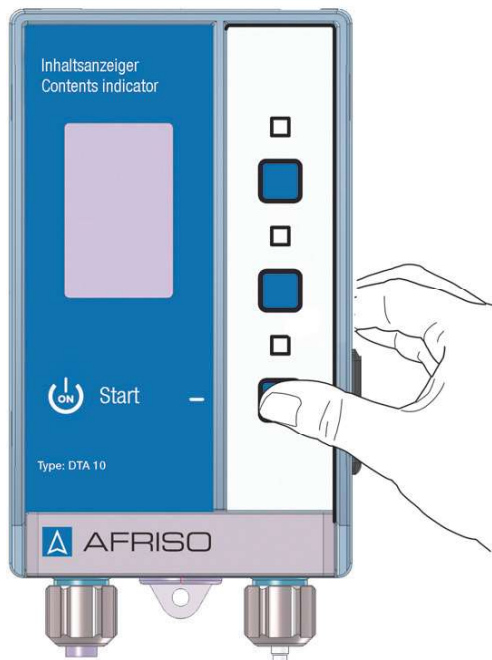
If the plastic flange does not have a hole, proceed as follows:

1. Dismount the plastic flange.
2. Drill a vertical hole Ø 10 mm through the plastic flange.
3. Remount the plastic flange.
4. Push the weight (C) and the hose (C) through the hole.
5. Screw the connection piece (A) into the hole.

6 Commissioning

6.1 Commissioning the product

⇒ Verify that all prerequisites for operation of the product are met.



Initial switching on:

1. Press the lower key to switch on the product.
 - The product automatically starts a measurement.
2. Hold down the upper key until the product switches to the language selection (see "Selecting the language").
3. Press the upper or the lower key to set the required language.



4. Press the centre key 1 x.
 - The selected language is set and the display changes to the next menu setting.

6.1.1 Selecting the language

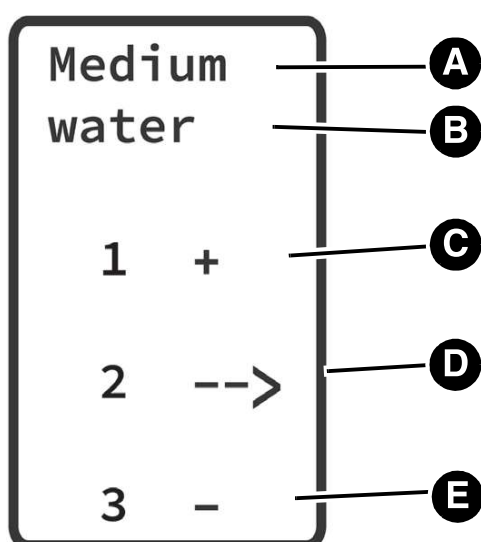
You can select one of the following languages:

- ????? (factory setting)
- German
- English
- French
- Polish

If you leave the language selection at ???, the display shows the language selection each time you switch on the product.

6.2 Parameterisation of the product

Three keys are available for parameterisation. The display show which menu item is being edited. The menu items are described in succession.



Display overview

- A. Current menu item
- B. Set value
- C. Increase value (key 1)
- D. Confirm value (key 2)
- E. Reduce value (key 3)

Press the centre key 1 x.

6.2.1 Changing the language

1. Hold down the upper key until the product switches to the language selection.
2. Press the upper or the lower key to set the required language.
3. Switch to the next menu item.

6.2.2 Adjusting the medium

You can select one of the following liquids:

- Water (density 1 g/cm³)
- Fuel oil (density 0.84 g/cm³)
- Variable (density adjustable from 0.5 - 1.5 g/cm³)

6.2.3 Setting the tank shape

If the geometry of the tank differs from the geometries listed, the information must be taken from the bearing chart of the tank manufacturer.

You can select one of the following tank shapes:

- Linear
- Ball
- Horizontal cylinder

6.2.4 Adjusting the tank height

You can select the following values:

- 0 cm to 400 cm

Adjusting a higher liquid level (for example 180 cm):

1. Press the upper or lower key (individual steps) or hold down the corresponding key until you have set the required liquid level.

6.2.5 Adjusting the tank volume

You can select the following values:

- 0 litres to 99999 litres

1. Press the upper or lower key (individual steps) or hold down the corresponding key until you have set the required tank volume.

6.2.6 Adjusting the alarm

You can select the following values:

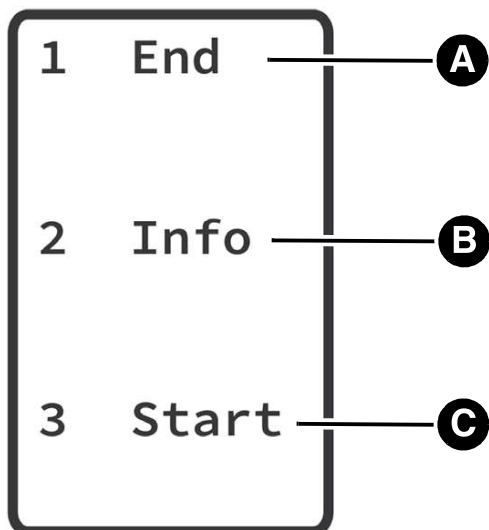
- 0 % to 100 %

1. Press the upper or lower key (individual steps) or hold down the corresponding key until you have set the required percentage.

6.3 Terminating parameterisation

The menu item Alarm is the last point in the parameterisation.

1. Press the centre key 1 x to switch to the regular mode of operation.



End (A)

Switching off the product / changing settings

1. Press the upper key 1 x.
- Product is switched off.
2. Hold down the upper key.
- The display switches to the language selection.

Info (B)

1. Press the centre key 1 x.
- The measured values are displayed.
2. Press the centre key 2 x.
- The battery status and software information are displayed.
3. Hold down the centre key.
- The display changes to the first parameters menu.
- The parameters entered can be changed again.

Start (C)

Starting a measurement.

7 Operation

7.1 Starting a measurement



1. Press the lower key to switch on the product.
 - The product automatically starts a measurement.
 - The measured values are displayed after a few seconds.

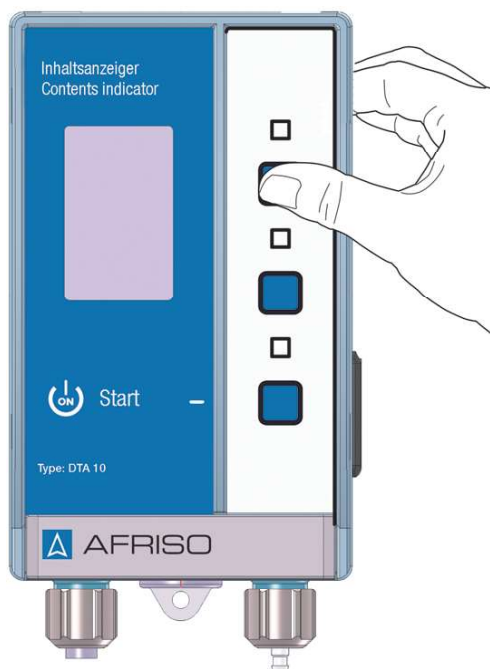
If the measuring line is longer than 20 m perform a second measurement.

7.2 Battery status



1. Press the centre key 2 x.
 - The battery status and software information are displayed.
2. Press the centre key again 1 x.
 - The display changes to normal mode.

7.3 Switching off the product



1. Press the upper key 1 x to switch off the product.

If no key is pressed for an extended period of time, the product switches off automatically.

8 Maintenance

8.1 Maintenance intervals

When	Activity
Once per year	Perform a visual inspection (inspect hose). Replace damaged parts
If required	Replace battery

8.2 Maintenance activities

1. Proceed as described in chapter "Inserting/connecting the battery".
 - Stored settings are not lost when the battery is replaced.

9 Troubleshooting

Any malfunctions that cannot be removed by means of the measures described in this chapter may only be repaired by the manufacturer.

Problem	Possible reason	Repair
Display does not show anything	Monobloc battery (9 V) is empty	Insert a new monobloc battery (9 V)
Incorrect level indication	Incorrect tank data entered Incorrect tank shape entered Measuring line does not reach down to the tank bottom Leak in measuring line	Correct the tank data (see chapter "Commissioning the product") Check the measuring line in the tank
Other malfunctions	-	Contact the AFRISO service hotline

10 Decommissioning, disposal

Dispose of the product in compliance with all applicable directives, standards and safety regulations.

Electronic components must not be disposed of together with the normal household waste.



1. Dismount the product (see chapter "Mounting", reverse sequence of steps).
2. Dispose of the product and of the battery separately.

11 Returning the device

Get in touch with us before returning your product (service@afriiso.de)

12 Warranty

See our terms and conditions at www.afriiso.com or your purchase contract for information on warranty.

13 Spare parts and accessories


NOTICE

UNSUITABLE PARTS

- Only use genuine spare parts and accessories provided by the manufacturer.

Failure to follow these instructions can result in equipment damage.

Product

Product designation	Part no.	Figure
Digital tank contents indicator DTA 10 with Pneumofix type 2	52145	
Digital tank contents indicator DTA 10	52155	

Spare parts and accessories

Product designation	Part no.	Figure
Pneumofix type 2	20142	-
PVC hose ø 4 x 1 mm, 20 m, with mounting accessories	20696	-
Hose connector	43945	-
Reducer G1½ x G1	20905	-
Reducer G2 x G1½	20903	-
Flange adapter G1½	20900	-
Condensate trap KG 2	20320	-
Mounting kit battery tanks "Pneum."	52154	-