SmartBox® 4 BASIC PRO

Electronic remote level gauge for up to four tanks

CE

CONTENTS

ABOUT THE MANUAL

- This manual is part of the product.
- This manual must be observed and handed over to the operator to ensure that the component operates as intended and to comply with the warranty terms.
- Keep it in a safe place while you are using the product.
- In addition to this manual, please also observe national regulations, laws and installation guidelines.

This assembly and operating manual is aimed at users and operators of this product. These persons must have read and understood the assembly and operating manual.

⚠ The physical and psychical requirements for proper and safe handling of the product must be ensured at all times!

SAFETY ADVICE

Your safety and the safety of others are very important to us. We have provided many important safety messages in this assembly and operating manual.

✓ Always read and obey all safety messages.

⚠ This is the safety alert symbol.
This symbol alerts you to potential hazards that can kill or hurt you and others.
All safety messages will follow the safety alert symbol and either the word "DANGER", "WARNING", or "CAUTION". These words mean:

⚠ DANGER describes a **personal hazard** with a **high degree of risk**.
➜ May result in **death or serious injury**.

⚠ WARNING describes a **personal hazard** with a **medium degree of risk**.
➜ May result in **death or serious injury**.

⚠ CAUTION describes a **personal hazard** with a **low degree of risk**.
➜ May result in **minor or moderate injury**.

NOTICE describes **material damage**.
➜ Has an **effect** on ongoing operation.

(i) describes a piece of information   ✓   describes a call to action

PRODUCT-RELATED SAFETY ADVICE

⚠ WARNING Escaping, liquid operating media:
- are hazardous to the aquatic environment
- are inflammable category 1, 2 or 3 liquids
- can ignite and cause burning
- can cause injury through people falling or slipping
✓ Capture operating media during maintenance work.

⚠ DANGER May not be used in potentially explosive areas.
Can cause an explosion or serious injuries.
✓ Must be installed by a specialised company in accordance with local industrial health and safety regulations.
✓ Installation outside the defined EX protection zone.

⚠ WARNING Do not use this device for safety applications or emergency stop mechanisms or misuse it!
Injuries and damage to health and property through misuse.
✓ You must observe the information contained in these instructions, especially regarding installation, start-up and maintenance.

⚠ DANGER Damaged or destroyed insulation!
Can result in short circuit or electric shock.
✓ Do not use the device if the insulation is damaged!
✓ Have new insulation installed by a specialised company!

GENERAL PRODUCT INFORMATION

The electronic tank management system **SmartBox® 4 BASIC PRO** can be used for remote monitoring of the liquids contained in unpressurized liquids tanks.
In addition to the registration of tank content and remote data transfer, other functions can be implemented by system enhancements, e. g. temperature measurement.

SmartBox® 4 BASIC PRO allows the content of up to 4 tanks to be recorded and monitored remotely. Because of its modular design, the system can be modified to suit many different applications. The indicated measurements are not calibrated for invoicing.
SmartBox® 4 BASIC PRO has a 2-line LCD display, four measuring inputs to connect 4 probes.
By default, the measuring probe can be installed with tank connecting threads G1, G1 1/2 or G2.

INTENDED USE

NOTICE Operating media with consideration of the otherwise suitable probe type and accessories, see:

ⓘ Please comply with the "Level gauge type FSA-W 4-20 mA for SmartBox® 1 – 4" assembly and operating manual!

ⓘ Comply with the "Level probe" assembly and operating manual!

ⓘ You will find a **list of operating media** with descriptions, the relevant standards and the country in which they are used in the Internet at **www.gok.de/liste-der-betriebsmedien.**

Installation location
• with protection type IP54, indoors and outdoors, if protected against the weather
NOTICE **Malfunctions caused by flooding!**
The product is not designed for installation in areas prone to flooding or risk areas.
✓ Following flooding, the product must be replaced!

INAPPROPRIATE USE

All uses exceeding the concept of intended use:
Indicator:
• outdoor use without protection type IP54
• changes to the product or parts of the product
• installation in a potentially explosive area
Probe:
• e.g. operation with different operating media
• operation with inflammable operating media of categories 1, 2 or 3 with a flash point < 55°C[1]
  [1] It is also necessary to comply with the divergent provisions/regulations of the EU member states concerning areas at risk of explosion and the flash point of the operating medium!
• installation in pressurised tanks and containers

USER QUALIFICATION

This product may be installed only by qualified experts. These are personnel who are familiar with setting up, installing, starting up, operating and maintaining this product.

"Equipment and systems requiring supervision may be operated only by persons aged at least 18, who are physically capable and who have the necessary specialist knowledge or who have been instructed by a competent person. Instruction at regular intervals, but at least once per year, is recommended."

Activity	Qualification
storing, transporting, unpacking, OPERATION	trained personnel
ASSEMBLY, MAINTENANCE START-UP, SHUT-DOWN , REPLACEMENT, RESTART, RESTORATION, DISPOSAL,	qualified personnel, customer service
ELECTRICAL INSTALLATION	qualified electrician

ASSEMBLY

Before assembly, check that the product is complete and has not suffered any damage during transport.

ASSEMBLY must be carried out by a specialised company.

The specialised company and the operator must observe, comply with and understand all of the following instructions in this assembly and operating manual. For the system to function as intended, it must be installed professionally in compliance with the technical rules applicable to the planning, construction and operation of the entire system.

These regulations also include the accident prevention regulations of the employers' liability insurance associations, the VDE regulations, and the installation and operating instructions.

Installing the level probe

$\boxed{\mathbf{i}}$ See assembly and operating instruction "Level probe".

Installing the probe

$\boxed{\mathbf{i}}$ See assembly and operating instruction „FSA-W 4-20 mA level gauge for SmartBox® 1 – 4".

$\boxed{\mathbf{i}}$ ELECTRICAL INSTALLATION see corresponding instruction „FSA-W 4-20 mA level gauge for SmartBox® 1 – 4".

$\boxed{\text{NOTICE}}$ The housing of the display unit is suitable for wall mounting and is connected to the 230 V mains supply. Under normal circumstances, the display unit must be operated with the housing cover closed.

⚠ It is installed and started up by a qualified technician while the unit is open.
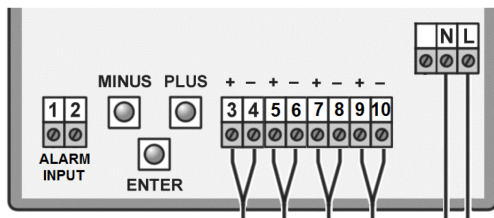
Installation of the display unit
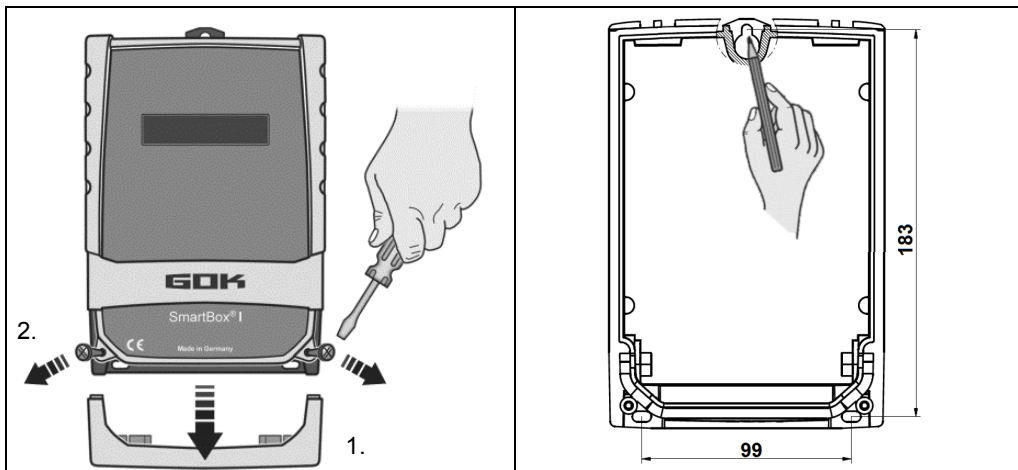
Mount the display unit to the wall in a suitable position.
1. Open the display unit by removing the bottom cover.
2. After loosening the 2 screws, open the display unit by removing the cover.
3. Mount the display unit to a smooth vertical wall by means of dowels. Mount the housing of the display unit by the four fixing holes with the enclosed screws and anchors. Take care not to damage the housing.
4. After connecting the terminals and setting the unit up, replace the covers.

ELECTRICAL INSTALLATION

Connection of supply voltage:
Voltage: 230 V AC 50 Hz
Connection: Terminals **N** + **L** to the display unit (cable not included in the delivery)

Safety precautions for electrical components

⚠ CAUTION

The functions and operating safety of the device are guaranteed only under the climatic conditions that are specified in TECHNICAL DATA. If the device is transported from a cold to a warm environment, condensation may cause the device to malfunction or may even destroy the device. Because of this, you must ensure that the device has acclimatised to the ambient temperature before using it.

⚠ CAUTION

If you have any doubts that the device can be operated safely, do not operate it. Your safety may be adversely affected by the device, if for example:
• it is obviously damaged
• it no longer works as specified
• it has been stored in unsuitable conditions for some time,
  if in doubt, send the device to the manufacturer for repair or maintenance

ℹ️ Observe the safety precautions and the assembly and operating instructions of connected devices.

Connection line between indicator and probe unit

Voltage	Probe supply 20 V DC			
Connection	Probe connection cable	**+**	**–**	
SmartBox 4 BASIC PRO	Probe 1 - terminals	3	4	➜ Tank 1
	Probe 2 - terminals	5	6	➜ Tank 2
	Probe 3 - terminals	7	8	➜ Tank 3
	Probe 4 - terminals	9	10	➜ Tank 4

⚠️WARNING Excess voltage!

Damage to components and device defect.

✓ No 230 V AC connections may be made to terminals **3 + 4, 5 + 6, 7 + 9** und **9 + 10** or probe input terminals **1 + 2**!
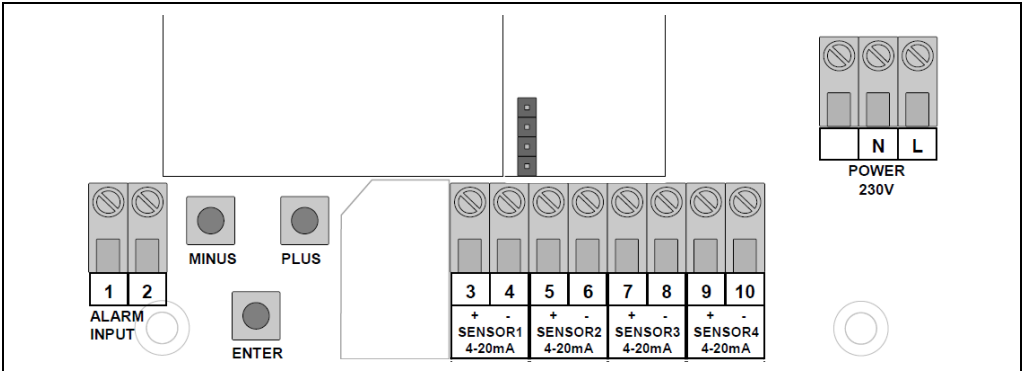
⚠️WARNING   Switching voltage   max. 250 V AC
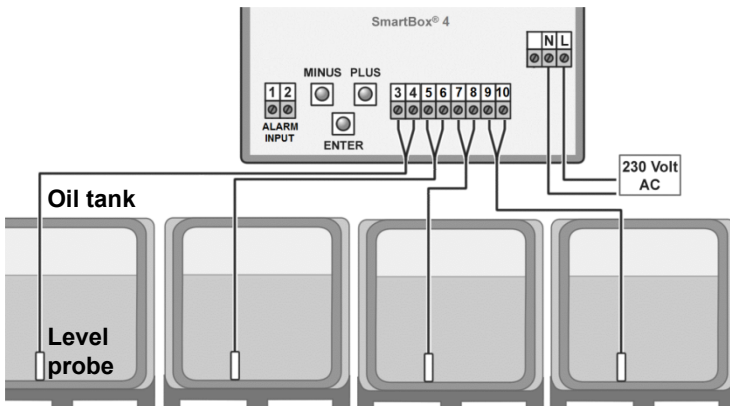
               Switching current   max. 3,5 A

SmartBox® 4 BASIC PRO

### Fuel oil tank - wiring example SmartBox® 4 BASIC PRO

START-UP

Operation elements and display

The device is adjusted once when it is put into operation. After start-up the device operates in display mode with the top closed.
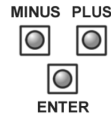
The display is a two-line LCD display with 2 x 16 characters.

The display has blue background lighting for best readability in all lighting conditions.

SmartBox® 4 BASIC PRO has the following display:
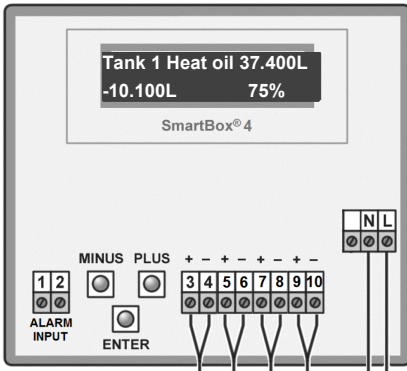
The device is adjusted via the three small blue buttons:

MINUS   PLUS

These are located on the motherboard between the terminals.

ENTER

Choosing the language (German, English French or Spanish) in Step "18.Language +Names".

⚠ WARNING

Activating power supply:

Keep away from the area of the 230 V terminal!

Programming the level gauge

Before programming, you need to ascertain the tank data and enter the values into the right column (Input value) of the following table. Then, enter the values for the individual entry steps.

Setting a parameter:	Press [ENTER] to open setup mode. Select the desired setting parameter via [PLUS]. Press [ENTER] to call up the value selection for the parameter. Set the value with [MINUS]/[PLUS], press [ENTER] to save.
Quitting the setup mode:	You can quit the setup mode at any time. Select "Exit" and press [ENTER] ➜ to go back to the standard display mode.

PROGRAMMING

⚠ **WARNING Overfilling of the tank due to incorrect entry values.**

Operating media may leak. These:

- are hazardous to water,
- are category 1,2 and 3 inflammable liquids,
- can ignite and cause burning,
- may cause falling injuries due to slipping.
- ✓ Enter these values with care!
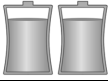
ℹ The entry values are also retained in the event of the failure of the supply voltage.

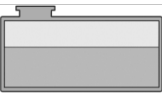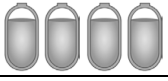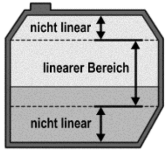| Menu	Input function	Input value
Tank: 1	Select the tank (tank: 1 to tank: 4) to enter the corresponding values. (This step is not displayed if only one probe is connected to SmartBox® 4 BASIC PRO.)	Tank:_____ Tank:_____ Tank:_____ Tank:_____
0.Exit	Press [ENTER] to return to display mode	
1.Probe	Select probe measuring range **see type label of the probe** - **default setting** 250 mbar	_____**mbar**

Standard probe	max. tank height for	
	fuel oil	**water**
100mbar	1.20 m	1.00 m
150mbar	1.80 m	1.50 m
160mbar	1.90 m	1.60 m
200mbar	2.40 m	2.00 m
250mbar	2.90 m	2.50 m
400mbar	4.70 m	4.00 m
500mbar	6.00 m	5.00 m
1.000mbar	12.00 m	10.00 m
2.000mbar	24.00 m	20.00 m
3.000mbar	36.00 m	30.00 m
5.000mbar	60.00 m	50.00 m
Set mbar		

Menu	Input function	Input value
2.Liquid	Select the **medium**	_____**kg/m³**

Medium	Density value kg/m³ (15 °C)
Fuel oil	845 kg/m³ - **default setting**
Water	999 kg/m³
Diesel	830 kg/m³
Biodiesel	880 kg/m³
RME, FAME	880 kg/m³
Rape oil	915 kg/m³
Palm oil	910 kg/m³
Motor oil	865 kg/m³
AdBlue	1090 kg/m³
Regular gasoline	743 kg/m³
Premium gasoline	750 kg/m³
Density value	Enter a special density value with different measuring range

If the density of the stored medium is unknown, the reference height can be entered in menu item "10.Trim height"

Menu	Input function	Input value
3.Tank shape	Select Tank shape with [Enter]	
Linear	Default setting **linear** tank, rectangular tanks, vertical cylinders, basement-welded steel tanks.	
Cylindric horiz.	**cylindrical** tank with arched ends horizontal tanks, tubular tanks typical shape for steel outdoor or buried tanks.	
Ball-shaped	**spherical** tank; buried tanks with spherical basic shape; frequently plastic buried tank (GRP).	
Oval	oval basement tanks; typical shape of GRP tanks and single-walled sheet metal tanks	
Convex	Plastic battery tanks, **convex,** slightly convex shape, alternative to linear	
Concave	Plastic battery tanks, **concave,** slightly concave shape, alternative to linear	
Holed plastic	Plastic tank with recess Plastic tank with a large recess (hollow) in the center (without tape bindings)	
Tube w. flat ends	**Lying cylindrical** tank with flat ends, tube segment with straight end plates. Typical tank shape for smaller diesel tanks.	
Metal oil tanks	**Plate tank or plate tank battery** linear side walls, with semicircular arc top and bottom.	
Bearing chart	Enter a special tank shape from existing bearing chart. For this purpose, up to 16 value pairs (height in cm + volume in L) can be entered. Before the value pairs are entered, the values for the tank volumes **must** be entered in in steps "4.Tank volume" and "5. Internal tank height".	

Index: 0 ➜	0 cm ➜	0 L ➜	Specified value pair (do not have to be entered).	

Index: 1 ➜ xxx.x cm ➜ xxxx L　　　first value pair entered
Index: 2 ➜　　. cm ➜　　　L
Index: 3 ➜　　. cm ➜　　　L

max.　　　　　　　　　　　➜　　max. inside height of tank ➜ the max. tank volume menu
Index:16➜　max. cm ➜ max. L　　step "5.Internal tank height" is allocated automatically
　　　　　　　　　　　　　　　　　　and does not have to be entered.

Not all 15 intermediate value pairs (Index: 1 - 15) have to be entered.
A linear interpolation is made between 2 interpolation values. For a linear range of the tank geometry it is sufficient to enter a lower and an upper value pair.

Menu	Input function	Input value
4.Tank volume	Adjust the tank volume with [+] / [-] (100%). The default setting is 0 L. The value must be set. ⚠ Please see a volume table for the highest value, if available. For a 100 m³ cyl. buried tank, this may for example be the value 100600 litres.	_____ **L**
5.Tank height	Enter inner tank height in millimetres: e. g.: 249 cm (max. value = 999,9 cm) (height without dome) ⚠ Please see a volume table for the highest value, if available. For a 100 m³ cyl. buried tank, this may for example be the value 288 cm.	_____ **mm**
5b.Filling limit	Set the filling limit of the tank with [+]/ [-]: With fuel oil tanks, that is the shut-off point of the limit indicator. The default setting is 95%. e.g. 95%=237cm. For tanks which can be filled to the very top (e.g. water tanks), it is necessary to set the highest value of 99%.	_____ **%**
6.View Tank	In the 1st line of the display, the tank name/medium and contents are displayed (e.g. in litres). The display in the 2nd line can be selected:	_____

6.View Tank	View details e.g. Single/detailed	Fillspace+Percent a)
		Fillspace+Level b)
		Percent+Level c)

	For fuel oil tanks in Germany, a free capacity display is required according to TRwS 791-2. This is possible with selection a) and b).	
	Single/Detailed	The tanks are displayed cyclically one after the other, with L, % and, if applicable, temperature. With display change.
	Collective	The (eg. L) values of tanks 1 to 4 are displayed (depending on the number of connected probes) Without display change.
	Percent — Yes No	Select Yes ➜ display change values (eg. in L) Tank 1 – 4 ➜ total capacity display + percent values

Menu	Input function	Input value
7.+8.Exit	Press Enter to return to display mode	

After performing entry steps 1 - 7, the programming process is completed.
After confirmation of step "8.Exit", the device automatically returns to default display mode; the current tank content is shown in the display.
Special functions are available under entry steps 9 to 24 (see page 13).
After the end of setup, do not forget to replace the housing cover!
After completing the ASSEMBLY and PROGRAMMING, carrying out a function check is recommended (FUNCTION CHECK section).

EXAMPLE FOR PROGRAMMING

Example: 4 Basement tanks for 15.000 litres fuel oil, litre display, linear steel tank
Inner height 220 cm, (fill level tank 1 = 125 cm)
SmartBox® 4 BASIC PRO with 4 standard probes 0 - 250 mbar

Menü-Schritt	Eingaben / Auswahl
Tank number:	1 (2,3,4)
1.Measure probe	250mbar
2.Liquid	Heat.oil
3.Tank shape	Linear
4.Tank volume	15.000L (set with [+] / [-] keys)
5.Tank height	220.0cm (set with [+] / [-] keys)
5b.Filling limit	95%=209cm (set with [+] / [-] keys)
6.View tanks ➜ Single/detailed	➜ Collective ➜ Percents: Yes (L ➜ Σ ➜ % are displayed alternately)
7.Exit ➜ press [Enter] to see the indication	8.500L 8.520L ➜ Σ 34.120 ▄▄▄▄ 8.540L 8.560L 57% 57% 57% 57%

➜ For Tank 2-4 repeat the entry with the correct value in the same way as with tank1

Tanks with inner shell
For tanks with an inner shell (e.g. cylindrical horizontal or tanks welded together in the basement) the data in steps "4.Tank volume" and "5.Internal tank height" must be corrected.
Examples:
➜ Wall thickness of inner casing 0.5cm ➜ reduce value for inner height by approx. 1cm, reduce volume for 10m³ by 1.3%, for 20m³ by 1 %, for 50m³ by 0.8% and for 100m³ by 0.7 %.
➜ Wall thickness of inner casing 2cm ➜ reduce value for inner height by approx. 4cm, reduce volume for 10m³ by 5%, for 20m³ by 4%, for 50m³ by 3% and for 100m³ by 2.5%.

NOTES ON PROGRAMMING

Menu	Setting	Description
9.Offset probe		Adjusting: Probe zero point, electric Position / Distance from base Unusable capacity that is not to be displayed
	ESC	Exit the menu
	Offset calibr.	New measurement of probe zero point (electric) ⚠ Lift **level probe** out of the liquid beforehand.
	Probe bottom gap	Distance: x cm; normal reference is x = 0 cm, max = 99 cm
	Bottom deadstock	Suction position: y cm Normal reference is 0 cm = complete capacity. y > 0 cm means corresponding unusable capacity.
	Default values	Complete reset of all parameters of menu step 9 to the **original delivery status**.

Menu	Setting	Description
10.Trim height	xxx.x cm	Entry option for the reference height for the 2-point measurement, for other probe measurement range or for an unknown density. Subtract 1.0 cm from the actual measured level and enter this value.
	Calibrate:No Calibrate:Yes	If activated (Yes), the display in menu steps 1+2 is then "by comparison". **NOTICE** If this is entered with an almost empty tank, it is recommended that you make a correction the next time it is filled.
11.Exit		Press [Enter] to return to display mode
12.Unit	L default setting m³ % m kg IG UG t mbar kPa	liter: 999900L cubic meters: 2.50m³ percent: 99.50% meter: 2.50m kilogram: 999900kg imperial Gallon: 219750IG US liquid gallon: 263900UG ton: 2.50t millibar: 500mbar kilopascals: 50kPa
13.Rounding	Automatically Without rounding 20L 50L 100L 200L 500L 1.000L	Default settings minimal increments Rounding increments in relation to the set volume set with [+]/ [-] keys
14.Exit		Press [Enter] to return to display mode
15.Exit		Press [Enter] to return to display mode
16.Delete tank	ESC	Exit the menu
	Delete Tank n	Settings for tank n are deleted and reset to default settings (tanks 2, 3, 4)
17.Input/ Output	Alarm-In ➜	Sets the function of the alarm contact input
	Closing	Closer alarm. Input closed ➜ Alarm
	Opening	Opener alarm. Input contact opens ➜ Alarm
	Deactiv	⚠ Sets the alarm input functionless
	Data-Out ➜	Defines the data output on the output adapter slot
	Tank:1 1-4	For data output a selection can be made between • Output single tank 1, 2, 3 or 4 ➜ for analogue adapter • Output "1-4" ➜ all tanks are output sequentially ➜ via digital slot-in adapter – e.g. for PC set LAN

Menu	Setting	Description
17b. H protocol	Data output: Deactiv Data: Litres Data: Level	Data output to H Box (only with DTM-2): • Deactivated • Output in litres • Output in level
18.Language	Language:	German,English,French,Spain [+] / [-] / [Enter]
	Names:	ESC [+] / [-] / [Enter] Name Tank 1: Suggested name Letters can be changed with [+] / [-] / [Enter]
19.Exit		[Enter] back to display mode
20.LCD display	Contrast: 90	Set the contrast of the LCD display
21.Device info		Displays information about: Software-version: V6.00 (z. B.) Serial-number: Tank 1: SN=1234 (z. B.) Offset+Gain: X0=4.05mA B=1268 (for Tank 1)
22.Test current		Test function for the current mA value of the **probe**: ADC: 7400=11.40 mA If **level probe** is not submerged, the value should be close to 4 mA. Tolerance range is 3.7 ... 4.3 mA. For larger deviations, see menu item 9.
23.Exit		[Enter] back to display mode
24.Reset		Reset the device software:
	ESC	Exit this function without executing it.
	Restart	Initialisation. The device software restarts and keeps all device settings.
	Factory settings	Complete reset of all parameters to the original delivery status.
26.Exit		Back to display mode

OPERATION

The product requires no operation while it is running.

FUNCTION CHECK

We recommend that you check the displayed litre values once per year to make sure that they are correct. For a simple check, pull the level probe up by its cable so that it hangs above the liquid. In this status the display device should show 0 litres (+ tolerance).
The probe signal can be checked with menu step "22. Test Current"
At 0 cm fill level ➔ approx. 3.7 – 4.3 mA.
In the event of a considerable deviation, we recommend a replacement.➔ New probe.

New probe/ replacement of the operating medium
If the installation of a new probe is required and/or a change in the operating medium takes place, then firstly, all of the "standard values" under menu step "9th zero point probe" must be reset to the **factory setting**!
It is also necessary to check, and if required, correct all further set values.

TROUBLESHOOTING

Error code	Significance
Error E1	The set value is invalid
Error E2	Measured value too small (I < 3.7 mA ➔ probe defective)
Error E3	Measured value too great for zero point calibration (level probe must not be immersed)
Error E4	Measured value not plausible. Check menu item "9.Offset probe"
Error E5	Set height is more than the height of the tank. (incorrect entry menu step 10)
Error E6	The current measured value is too low as a reference point. The level probe must be submerged. The set height (menu step 10) is too high (the measured value is too low) Check menu item "9. Offset probe". Otherwise, probe fault.
Error E7	The current measured value is too low in relation to the set tank height or to the tank volume. The level probe must be submerged.
Error E8	Measured value (probe current) is too high - check electrical connection and measuring range of the probe, switch power supply off and on again. Check menu settings steps 1 to 5. If necessary, Check menu step "9.Offset probe". Otherwise, probe fault.
Error E9	Probe current = 0 mA - no signal current. The probe cable is poled wrongly or interrupted; check cable extension, reconnect if necessary.
Error E10	Calibration error. Disconnect the display device from the power supply, wait 5 s and then reconnect. Otherwise, probe fault.
Error E11	**⚠ CAUTION** The liquid level in the tank is actually too low for an exact measurement. You can still press [Enter] to confirm and continue.

Checking the probe signal:
Can be checked through menu item "22.Test current":
At 0 cm fill level   ➔ approx. 3.7 - 4.3 mA
For 1 m water column ➔ approx. 9 - 11 mA (standard probe with measuring range 250 mbar)

MAINTENANCE

See FUNCTION CHECK.

RESTORATION

If the actions described in TROUBLESHOOTING do not lead to a proper restart and if there is no dimensioning problem, the product must be sent to the manufacturer to be checked. Our warranty does not apply in cases of unauthorised interference.
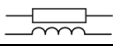In case of repeated errors or alarm messages (relay output) while the tank content does not reach / remains below the set fill level alarm threshold at the probe element, check the connection line of the signal and probe element for breakage or short-circuit, re-install if necessary.

CERTIFICATE

Our management system is certified according to ISO 9001, ISO 14001 and ISO 50001, see:
www.gok.de/qualitaets-umwelt-und-energiemanagementsystem.

TECHNICAL DATA

Indicator	
Action	Typ 1.B (according to EN 60730-1)
contamination degree	2 (according to EN 60730-1)
Rated impulse voltage	4000V
Supply voltage	230 V AC 50 Hz
Power input	max. 2 VA
Measuring input	4 to 20 mA; U_o = 20 V
Switching voltage	max. 250 V AC
Switching current	max. 3,5 A
Dimensions W/H/D in mm	194 x 130 x 65 mm
Ambient temperature	-10 °C to +50 °C
Housing	Polycarbonat (PC)
Analog output	0 to 5 V DC; 4 to 20 mA
Resolution	12 Bit
Degree of protection	IP54 acc. to EN 60529

Level probe / Standard probe	
Operating voltage	20 V DC
Material	V4A; POM; FPM; PUR
Accuracy	± 1 %
Standard version	250 mbar
Installation position	vertically suspended, or horizontally supine
Ambiente temperature operating media	-10 °C to +50 °C
connection cable	6 m
Length of standard probe	without cable: 97 mm
	Diameter of probe: 22 mm
Degree of protection	IP68 acc. to EN 60529

LIST OF ACCESSORIES

Product description	Information on application	Order no.
Cable junction box IP66, with pressure equalization	To extend the probe cable - e. g. in the dome	28 857 00

PROBES AND ACCESSORY PARTS

Product name	Usage information	Order no.
⚠ DANGER **May not be used in potentially explosive areas.** Can cause an explosion or serious injuries. ✓ Must be installed by a specialised company in accordance with local industrial health and safety regulations. ✓ Installation outside the defined EX protection zone.		
Level probe 0 up to 250 mbar Accuracy class 1%	for non-pressurized tanks with liquid operating medium	28 801 00
Level probe 0 up to 250 mbar Accuracy class 0.5%	for non-pressurized storage tanks with liquid operating medium	28 891 00
Mechanical level gauge type FSA-W 4-20 mA Measuring accuracy:± 3%	for non-pressurized tanks with liquid operating medium, measurement range: 0 to 2.40 m tank height	28 903 00

WARRANTY

We guarantee that the product will function as intended and will not leak during the legally specified period. The scope of our warranty is based on Section 8 of our terms and conditions of delivery and payment.

TECHNICAL CHANGES

All the information contained in this assembly and operating manual is the result of product testing and corresponds to the level of knowledge at the time of testing and the relevant legislation and standards at the time of issue. We reserve the right to make technical changes without prior notice. Errors and omissions excepted. All figures are for illustration purposes only and may differ from actual designs.

DISPOSAL

To protect the environment, our electrical and electronic appliances may not be disposed of along with household waste.
At the end of its lifespan, each end user is obligated to pass old appliances to a district or area collection point, separate from household waste. This ensures that old appliances are disposed of properly and negative effects on the environment are avoided. Our registration number for the electrical old appliances register (EAR) is: WEEE-Reg.-No. DE 78472800.