KTU5
Ultrasonic level transmitter

825B130A

Technical Data

Housing material:	**PP**
Mechanical installation:	**2"GAS M (PP flange DN80 opt.)**
Protection degree:	**IP66 / IP68 (sensor)**
Electrical connection:	**Internal plug-in connectors**
Working temperature:	**-30 ÷ +70°C; +80°C non-continuous**
Pressure:	**from 0,5 to 1,5 bar (absolute)**
Power supply:	**12, 24Vdc or 24, 115, 230Vac (specify at the order)**
Power consumption:	**2W**
Analog output:	**4÷20mA, max 750ohm**
Relays output:	**n°2 3A 230Vac (n.o.)**
Digital communication:	**MUDBUS RTU**
Max measure range:	**max 0.25÷5m**
	max 0.4÷8m

[In case of non perfectly reflecting surfaces, the maximu distance value will be reduced]

Blind distance:	**0,25m (5m vers.) / 0,40m (8m vers.)**
Temperature compensation:	**digital from -30 to 80°C**
Accuracy:	**±0,5% (of the measured distance)**
	not better than ±3mm
Resolution:	**1mm**
Calibration:	**2 buttons, or via VL6011 or by MODBUS RTU**
Warm-up:	**5 minutes typical**
LCD Display:	**Plug-in VL6011 (opt.) display/ keyboard with 4 buttons and matrix LCD**

CE

☐ Warranty

Products supplied by SGM LEKTRA are guaranteed for a period of 12 (twelve) months from delivery date according to the conditions specified in our sale conditions document.

SGM LEKTRA can choose to repair or replace the Product.

If the Product is repaired it will maintain the original term of guarantee, whereas if the Product is replaced it will have 12 (twelve) months of guarantee.

The warranty will be null if the Client modifies, repair or uses the Products for other purposes than the normal conditions foreseen by instructions or Contract.

In no circumstances shall SGM LEKTRA be liable for direct, indirect or consequential or other loss or damage whether caused by negligence on the part of the company or its employees or otherwise howsoever arising out of defective goods

☐ Factory Test Certificate

In conformity to the company and check procedures I certify that the equipment:

KTU5... Production and check date: ....

Serial n. ....

is conform to the technical requirements on Technical Data and it is made in conformity to the SGM-LEKTRA procedure

Quality Control Manager ....

SGM LEKTRA

Process Control and Measurement

The non intrusive system application is now preferred in the level measurements field. For this reason the **SGM-LEKTRA** developed the **KTU5** unity to best meet the "GENERAL-PURPOSE" application requests. The **KTU5** unit offers, together with its compact size, a complete versions range that makes the **KTU5** very versatile for the most varied applications, including areas chemically aggressive environments. **KTU5** is an ultrasonic level transmitter, temperature-compensated and suitable for connection with **MODBUS RTU** acquisition systems. **KTU5** is a compact unit which in addition to an analog output includes two freely addressable relay (only 4 wires vers.).

☐ *Non-contact level measurements*

☐ *Suitable for liquids and granulates level measurement*

☐ *Integrated digital temperature sensor to compensate the measure*

☐ *MODBUS RTU com. protocol*

☐ *12,24Vdc o 24, 115, 230Vac power s.*

☐ *Mechanical protection: IP66 / IP68 (sensor)*

☐ *Output: 1 4÷20mA analog output*
*2 relays output (4-wires vers.)*

1. SAFETY

1.1 Installation precaution

a) Installation shall only be performed by qualified personnel and in accordance with local governing regulations.

b) Make sure that the working temperature is between -30 and +70 ° C, +80 ° C non-continuous

c) Install the transmitter in a its physical characteristics and housing/sensor construction materials compatible environment.

d) The transmitter must be used safety warnings observance.

**e)** Improper transmitter use would cause serious damage to people, to the product and connected equipment.

2. INSTALLATION

2.1 MECHANICAL DIMENSIONS

The KTU5 transmitter has the 2 "GAS M threaded, equipped with n. 2 2" BSP/ PP fixing bolts.
DN80 PN6 UNI 1092-1/PP flange is available (optional accessory).

Fig.1

DN80 PN6 UNI 1092-1/PP flange
(optional accessory)

Fig.2
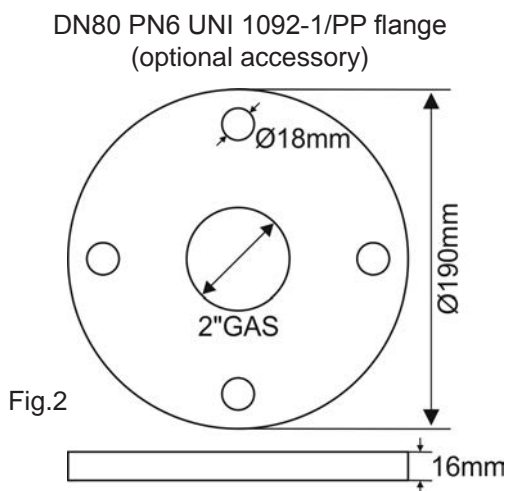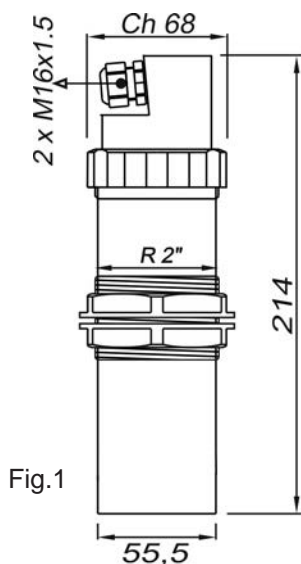
2.2 Mounting examples

Fig.3 Fig.4 Fig.5 Fig.6
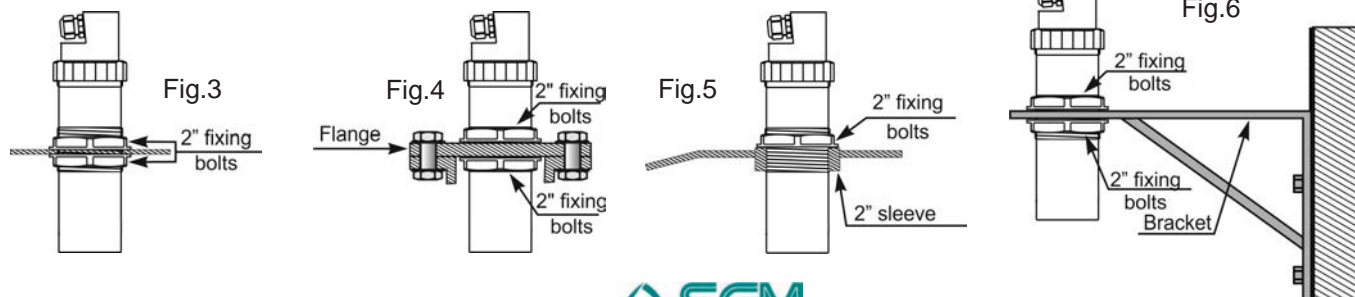
2.3 Mounting precautions

2.3.1 Mounting position (Fig.7)

- With cambered roof, Do not install the sensor in the tank center (b). Leave a 300mm minimum distance between the sensor and the tank smooth wall (d).
- Use a protective cover to protect the sensor from weather and direct sunlight (c).
- Do not install the sensor near the load zone (a).
- Make sure that in the sensor emission beam (lobe) there are no obstacles (f,s) that can be intercepted as level.
- Make sure that there is not foam presence on the product surface to be measured

Fig.7

Liquids   Bulk solids
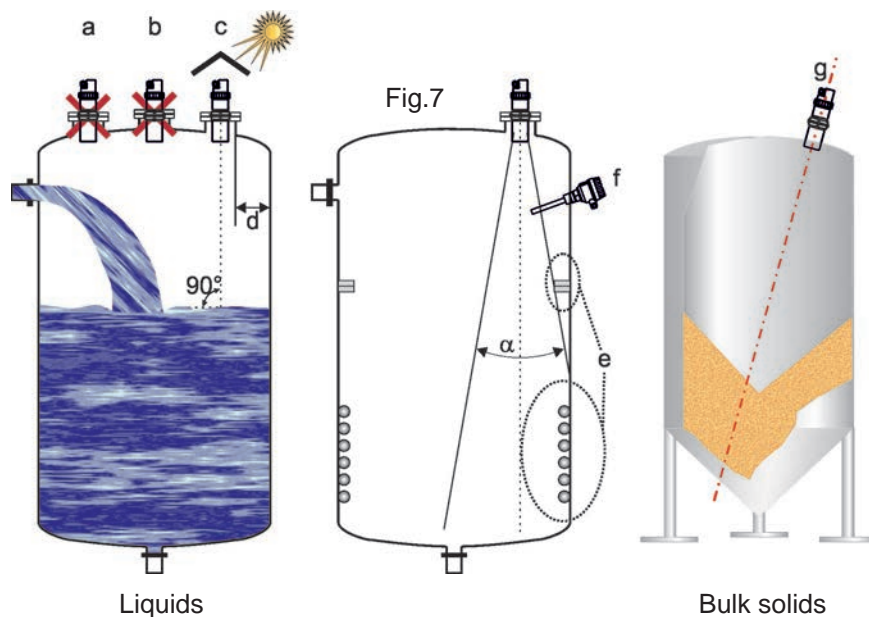
	Lobe	L	r
KTU5 5m	10°	5m	0.5m (5m)
KTU5 8m	10°	8m	0.8m (8m)

Tab.1

2.3.1 Blind distance

During installation is important to remember that in the sensor vicinity there is a blind zone (or **BLIND DISTANCE**) of 0.25m (for 5m max **KTU5** range) or 0.4m (for 8m max **KTU5** range) where the sensor can not measure.

Fig.8

100% ‾‾‾
0.25m (5m)
0.40m (8m)
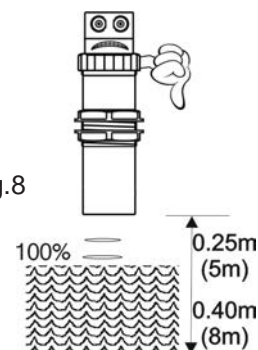
2.3.2 Installation in nozzle

Installing the **KTU5** sensor in a nozzle (see fig.9), make sure the sensor bottom protrudes at least 10 mm from the bottom nozzle
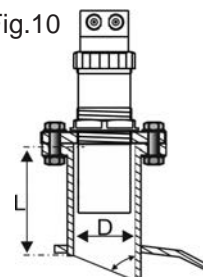

Fig.9

≥10mm
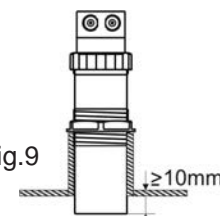
KTU5 can be installed in an extension pipe (see Figure 10) to turn away the sensor from the maximum level point. The extension pipe must be flat and without joints (welds, etc..), also, the pipe terminal part must be cut at 45° and with the borders without burr.

KTU5 5m		KTU5 8m	
D (mm)	L max. (mm)	D (mm)	L max. (mm)
57	80m	80	240
80	240	100	300
100	300		

Tab.2

Fig.10

2.3.4 Reference pipe installation

Disturbing factors that may influence the level measurement in liquids, as for example:
  - foam presence on the product surface (Fig.11)
  - internal structures presence in the tank (Fig.12)
  - presence on the liquid surface of floating bodies (Fig.13)

can be avoided with the use of level measurement inside of pipes (by-pass pipe or calm pipe with 57mm min. diameter) The pipe must have a length greater or equal than the empty distance, also, must have some of vent holes (Fig. 13-A) to allow the pipe regular filling and emptying.

In the programming menu, to the "**PRODUCT**" parameter, must select the "*LIQUID PIPE*" option (see page 9 or 15)
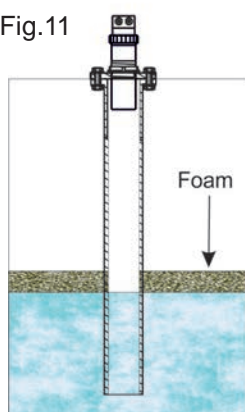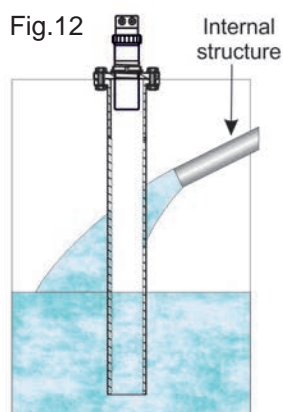
Fig.11   Foam

Fig.12   Internal structure
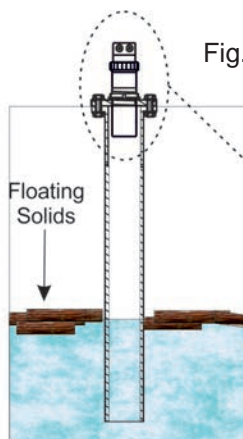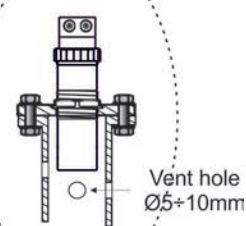
Fig.13   Floating Solids

Fig.13A   Vent hole Ø5÷10mm

2.3.5 Agitators presence

The level measurement is possible thanks to the **Auto-Tuned** statistical filter.
Should rarely need to adjust the filter setting by editing 2 **KTU5** sensor programming parameters:

- **FILTER**; this parameter is present in the **Quick Setup** menu (page 9)
  and in the Advanced Configuration "**SETUP**" menu (page 16);
  increasing the parameter value, decreases the sensor sensitivity to the
  level measurement sudden variations.

- **F-WINDOW**; this parameter is present in the Advanced Configuration
  "**SERVICE**" menu (page 26); decreasing the parameter programmed
  value, increases the sensor immunity to false echoes.

Fig.14

2.3.6 Mechanical installation accessories

Fig.15

- 835A009A Protection platform
- 835A007A Floor Pedestal h=600mm
- 835A008A Floor Pedestal h=1700mm
- Assembling for floor pedastal mounting

- 835A006A T-Arm
- 835A024A Pedestal for channel/vessel side
- Assembling pedestal channel/vessel mounting

- 835A010A Wall anger
- Assembling for wall mounting

- KTU5
- 835A020A Extension L=700mm
- 835A023A Probe holder 2"
- Accessories for all mounting versions

3. CONNECTIONS

3.1 Wiring

1) Separate the engine control cables or power cables from the **KTU5** connection cables..
2) Open the cap by unscrewing.
3) Lead the cables into the transmitter through the glands.
5) Close the cap and tighten the cable glands.

4 pole plug-in connector for 4-20mA analog output and MODBUS RTU communication port connection

ECO LED Flashes during ultrasound signal receiving

MODE LED Steady on. Flashes during transmission data via MODBUS RTU

RL2 LED Indicates the relay 2 status: turned on, relay RL2 energized

RL1 LED Indicates the relay 1 status: turned on, relay RL1 energized

6 pole plug-in connector for power supply and RL1-RL2 relays connection

Fig.16

Power supply
+24Vdc / L (Vac)
0Vdc / N (Vac)

The immunity to electromagnetic interference complies with $C\epsilon$ Directives

3.2 Humidity infiltrations

To avoid the humidity infiltration inside the housing is recommended:

- for electrical connections, use a cable with a 5÷10mm outer diameter and fully tighten the M16 cable gland

- fully tighten the cap

- position the cable so that it forms a downward curve at the M16 output (Fig. 17); in this way the condensation and/or rain water will tend to drip from the curve bottom
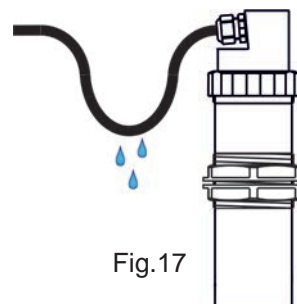
Fig.17

4. CONFIGURATION MODES

The **KTU5** have 3 configuration/calibration modes:
- via digital communication:
  via **MODBUS RTU**, by PC
- via 2 on board buttons
- via **VL611** programming module

4.1 Via MODBUS RTU

4.1.1 MODBUS RTU PC connection (fig.21)

1) KTU5 with MODBUS RTU communication protocol
2) USB/RS485 interface module, cod.694A004A
3) MODBUS RTU communication S/W, cod.010F105A for KTU5 transmitter
   With this software is possible:
   - connect, by selecting the UID address, the KTU5 transmitters in MODBUS RTU network
   - read on your PC monitor all measures in reading and KTU5 operation data
   - programming all KTU5 configuration parameters
   - storing on files, data logger function; KTU5 measures in reading and operating states
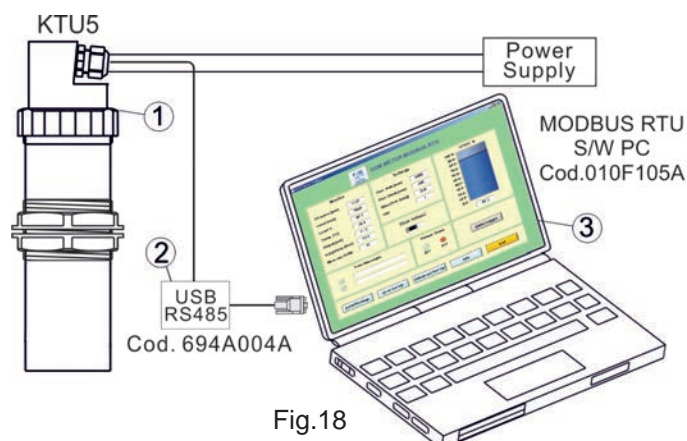
KTU5
Power Supply
MODBUS RTU S/W PC Cod.010F105A
USB RS485
Cod. 694A004A
Fig.18

4.2 Via 2 BUTTONS calibrations

KTU5 has 2 buttons on board (fig.19), **P1** and **P2**, with which it is possible:

- to program the level measurement range via the **4mA** and **20mA** distances self-acquisition

- to program the **RL1** and **RL2** thresholds via the switching distances self-acquisition.
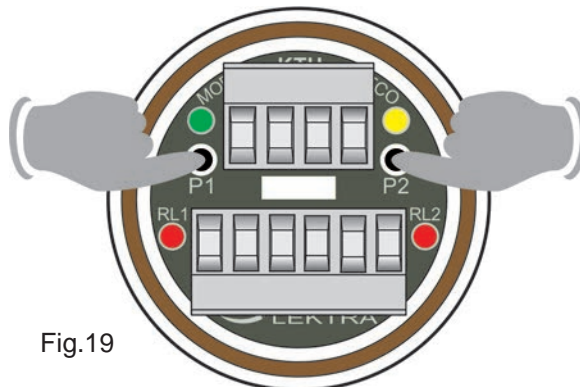
Fig.19

4.2.1 4mA DISTANCE (fig.20)

To set the **0%** level measurement (4mA) it is necessary that the real level is that corresponding to the "**4mA Dist.**"; alternatively it is possible to place a target orthogonally to the **KTU5** transmitter at a distance equivalent to the **0%** level. Wait until the **ECO** LED (fig.16) flashes for at least 30s, press simultaneously **P1** and **P2**, release them and verify that the **ECO** LED (fig.16) remains turned on. Press **P1** two times and wait for the **ECO** LED (fig.16) flashes. The distance has been saved and automatically associated with the **0%** level (4mA).

4.2.2 20mA DISTANCE (fig.20)

To set the **100%** level measurement (4mA) it is necessary that the real level is that corresponding to the "**20mA Dist.**"; alternatively it is possible to place a target orthogonally to the **KTU5** transmitter at a distance equivalent to the **100%** level. Wait until the **ECO** LED (fig.16) flashes for at least 30s, press simultaneously **P1** and **P2**, release them and verify that the **ECO** LED (fig.16) remains turned on. Press **P2** two times and wait for the **ECO** LED (fig.16) flashes. The distance has been saved and automatically associated with the **100%** level (4mA).

4.2.3 RL1 MAX LEVEL THRESHOLD DISTANCE (fig.20)

To set the **RL1** maximum level alarm threshold is necessary that the real level is that corresponding to the "**RL1 max. lev. threshold dist.**"; alternatively it is possible to place a target orthogonally to the **KTU5** transmitter at a distance equivalent. Wait until the **ECO** LED (fig.16) flashes for at least 30s, press simultaneously **P1** and **P2**, release them and verify that the **ECO** LED (fig.16) remains turned on. Press **P2** and then **P1** and wait for the **ECO** LED (fig.16) flashes. The distance has been saved and automatically associated with the **RL1** threshold (see default level alarm threshold settings on page 10)

4.2.4 RL2 MIN LEVEL THRESHOLD DISTANCE (fig.20)

To set the **RL2** maximum level alarm threshold is necessary that the real level is that corresponding to the "**RL2 min. lev. threshold dist.**"; alternatively it is possible to place a target orthogonally to the **KTU5** transmitter at a distance equivalent. Wait until the **ECO** LED (fig.16) flashes for at least 30s, press simultaneously **P1** and **P2**, release them and verify that the **ECO** LED (fig.16) remains turned on. Press **P1** and then **P2** and wait for the **ECO** LED (fig.16) flashes. The distance has been saved and automatically associated with the **RL2** threshold (see default level alarm threshold settings on page 11)
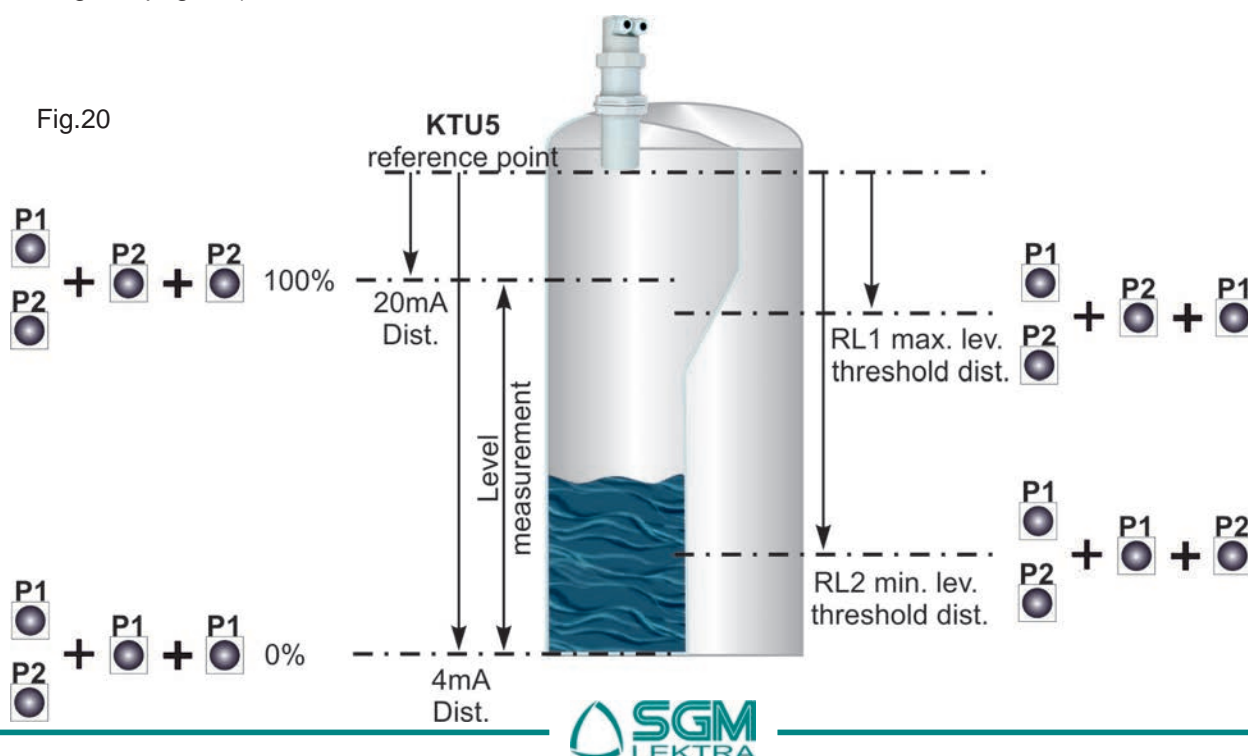
Fig.20

4.3 via VL611 configuration

The **VL611** programming module can be mounted and removed from the **KTU5** without affecting the unit operation. Unscrewing the cap, the **VL611** module can be connected or disconnected as shown in Fig.21. The **VL611** module is equipped with matrix LCD.

))) displayed at the bottom indicates the correct echo signal reception

! displayed at the top alerts that there is a generic error; press 🔃 to show   the message that indicates the present error type.
The KTU5 returns automatically to RUN mode.
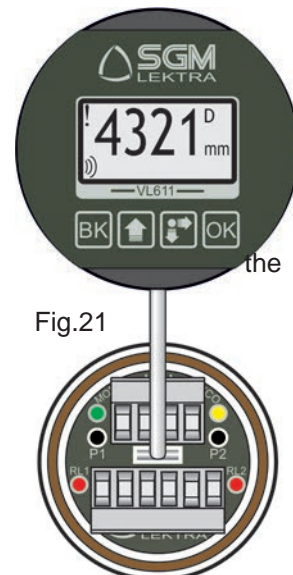
Fig.21

The **VL611** program module has 4 buttons (fig. 24) which allow to perform all operational, control and programming instrument functions.

In the configuration menus, is possible:

a) Submenus and parameters access; press 🔃 to select and press 🔘 to access.

b) Parameter options choice: Press 🔃 to select the option and press 🔘 to store the option.
Press 🔙 to exit without storing

c) Configure the parameter values; in some parameters the configuration is done by setting a value (eg., in the **SET DISTANCE 4mA** parameter is possible to change the the corresponding distance value, in mm): press 🔃 to select the digit to be modified (the digit is highlighted in **inverse**), press ⬆ to change the highlighted digits number, press 🔘 to save the set value and exit automatically. Press 🔙 to exit without storing .

In the display top right, during the settings, there is always a number, eg. "1.2". This number is the menu or parameter index that's displayed. The menu structure is represented on page 8 and on pages 13÷14.

Fig.22

OK	- Configuration access - Options confirmation - Parameters values confirmation
🔃	- Parameters values selection - Parameters scroll
⬆	- Parameters values modification
BK	- Exit configuration - Back to previous menu - Eco map (from RUN mode)

With the VL611 module is possible to access two configuration modes for the KTU5 setting:

☐ **QUICK START** - Menu with easy access for quick basic parameters configuration.
To access: from "RUN" mode press 🔘 to the quick setup menu mode access, 🔙 to exit

☐ **ADVANCED CONFIGURATION** - Full menu with access to all parameters, including functional parameters.
It is recommended to carefully read the complete documentation before accessing.
To access: from "RUN" mode, holding down ⬆ , press 🔘 to the advanced configuration mode access, 🔙 to exit
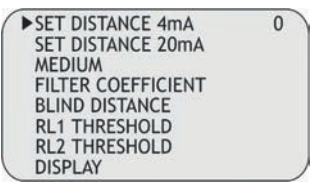
WARNING! - The documentation provided with the KTU5 contain the most frequently used indications. If it's necessary refer to the full manual, it can be downloaded from our website www.sgm-lektra.com , in the products section.

5. QUICK START MODE

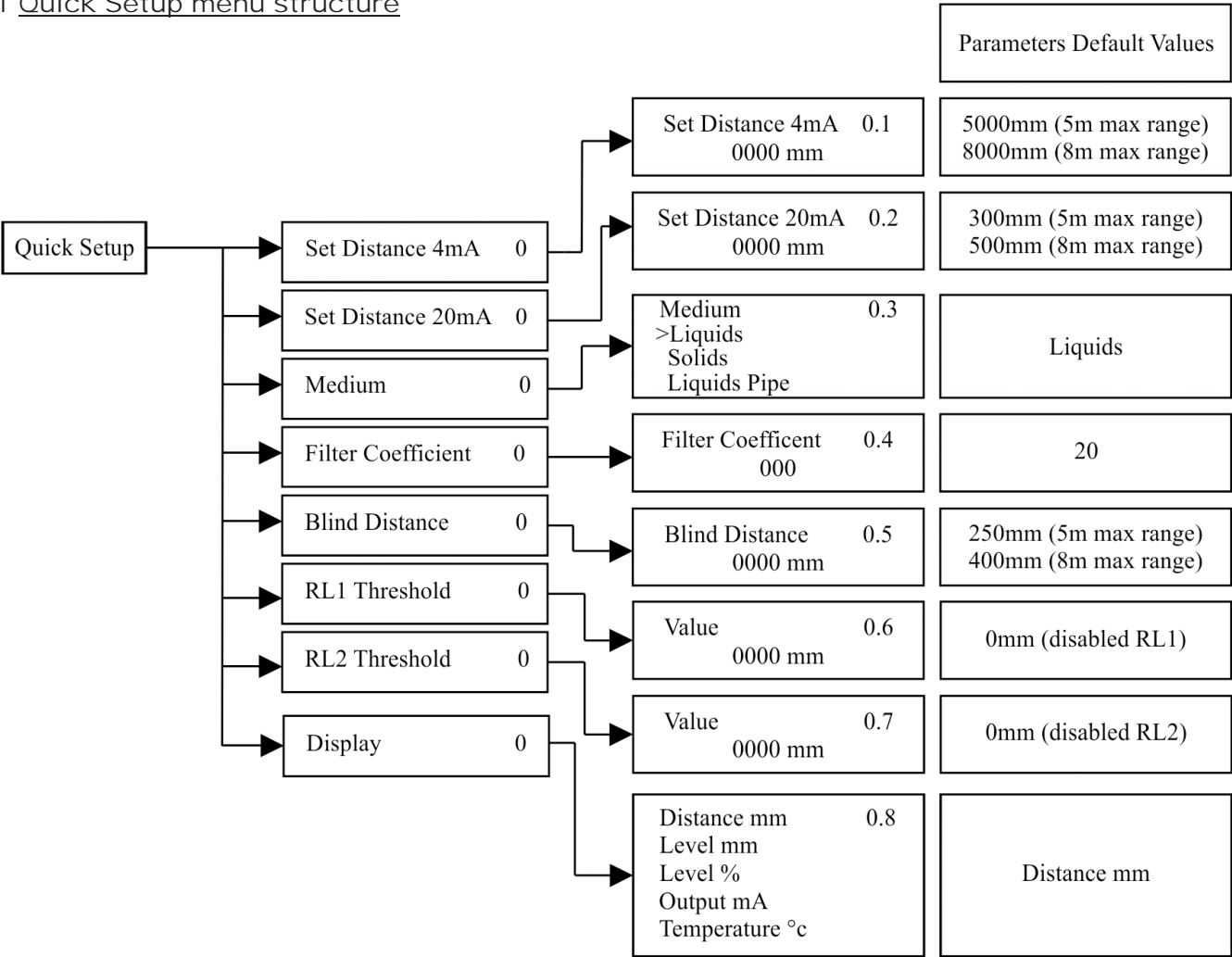From "RUN" mode press ⏎ to access the Quick Setup menu

4321^{D}_{mm}

Select the parameters by moving the cursor with ⬆⬇, and confirm with ⏎; press ⬅ to exit

> SET DISTANCE 4mA   0
> SET DISTANCE 20mA
> MEDIUM
> FILTER COEFFICIENT
> BLIND DISTANCE
> RL1 THRESHOLD
> RL2 THRESHOLD
> DISPLAY

5.1 Quick Setup menu structure

Menu item		Parameters Default Values
Set Distance 4mA 0.1 0000 mm		5000mm (5m max range) 8000mm (8m max range)
Set Distance 20mA 0.2 0000 mm		300mm (5m max range) 500mm (8m max range)
Medium 0.3 >Liquids Solids Liquids Pipe		Liquids
Filter Coeffcient 0.4 000		20
Blind Distance 0.5 0000 mm		250mm (5m max range) 400mm (8m max range)
Value 0.6 0000 mm		0mm (disabled RL1)
Value 0.7 0000 mm		0mm (disabled RL2)
Distance mm 0.8 Level mm Level % Output mA Temperature °c		Distance mm

Quick Setup:
- Set Distance 4mA   0
- Set Distance 20mA   0
- Medium   0
- Filter Coefficient   0
- Blind Distance   0
- RL1 Threshold   0
- RL2 Threshold   0
- Display   0

5.2.1 SET DISTANCE 4mA

Press [ENTER] to display the distance value associated with 4mA output.

```
▶SET DISTANCE 4mA        0
 SET DISTANCE 20mA
 MEDIUM
 FILTER COEFFICIENT
 BLIND DISTANCE
 RL1 THRESHOLD
 RL2 THRESHOLD
 DISPLAY
```

Use [ ] and [ ] to modify that value; in the Fig.25 example, the 4mA distance is 3500mm.
Press [ENTER] to confirm.

```
                         0.1
 SET DISTANCE 4mA

 3500 mm
```

5.2.2 SET DISTANCE 20mA

Press [ENTER] to display the distance value associated with 20mA output.

```
 SET DISTANCE 4mA        0
▶SET DISTANCE 20mA
 MEDIUM
 FILTER COEFFICIENT
 BLIND DISTANCE
 RL1 THRESHOLD
 RL2 THRESHOLD
 DISPLAY
```

Use [ ] and [ ] to modify that value; in the Fig.25 example, the 20mA distance is 500mm.
Press [ENTER] to confirm.

```
                         0.2
 SET DISTANCE 20mA

 0500 mm
```


Fig.23

5.2.3 MEDIUM

Press [ENTER] to display the previous setting

```
 SET DISTANCE 4mA        0
 SET DISTANCE 20mA
▶MEDIUM
 FILTER COEFFICIENT
 BLIND DISTANCE
 RL1 THRESHOLD
 RL2 THRESHOLD
 DISPLAY
```

Press [ ] to select the medium type.
Press [ENTER] to confirm.
In fig.26 product selection example.

```
                         0.3
         MEDIUM

 SOLIDS

▶LIQUIDS

 LIQUIDS PIPE
```


Fig.24

5.2.4 FILTER COEFFICIENT

Press [ENTER]. Increasing the value slows down the sensor response speed.

```
 SET DISTANCE 4mA        0
 SET DISTANCE 20mA
 MEDIUM
▶FILTER COEFFICIENT
 BLIND DISTANCE
 RL1 THRESHOLD
 RL2 THRESHOLD
 DISPLAY
```

Use [ ] and [ ] to modify the value. Input a value from 1 to 99. Press [ENTER] to confirm.
In fig.27 value choice example.

```
                         0.4
 FILTER COEFFICENT

 20
```


Fig.25

5.2.5 BLIND DISTANCE

Press [ENTER]. The **BLIND ZONE** is used to avoid undesired measures near to the transmitter

```
 SET DISTANCE 4mA        0
 SET DISTANCE 20mA
 MEDIUM
 FILTER COEFFICIENT
▶BLIND DISTANCE
 RL1 THRESHOLD
 RL2 THRESHOLD
 DISPLAY
```

Use [ ] and [ ] to modify the value. Press [ENTER] to confirm. The minimum value is 250mm (5m max vers.) or 400mm (8m max vers.).

```
                         0.5
 BLIND DISTANCE

 0250 mm
```
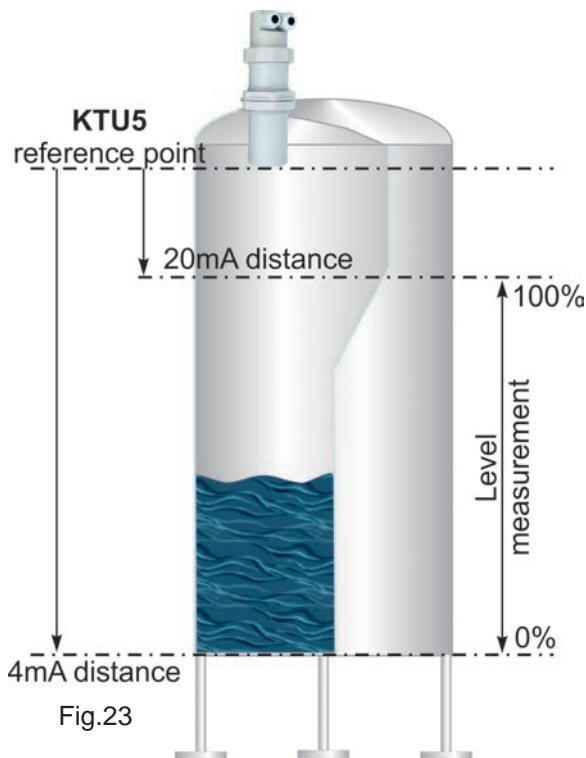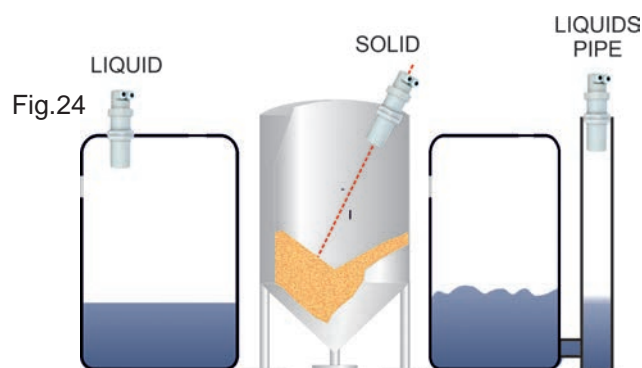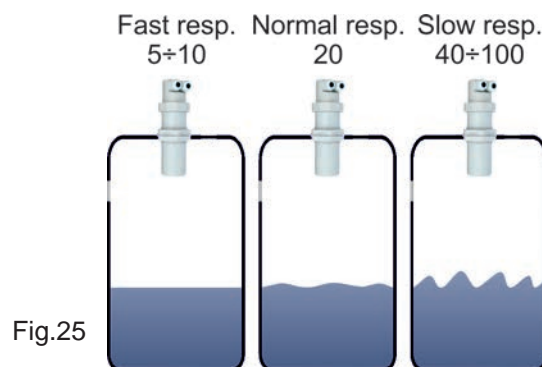

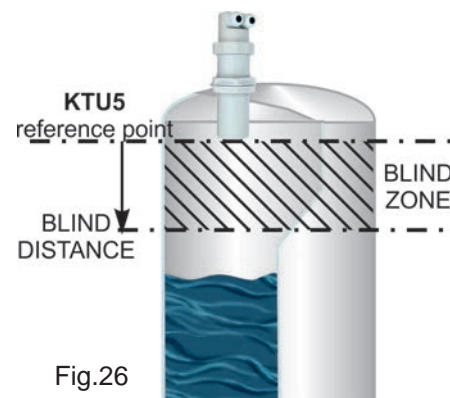
Fig.26

5.2.6 RL1 THRESHOLD

Press ⏎ to display the previous setting. Set the distance from the sensor

SET DISTANCE 4mA   0
SET DISTANCE 20mA
MEDIUM
FILTER COEFFICIENT
BLIND DISTANCE
▶RL1 THRESHOLD
RL2 THRESHOLD
DISPLAY

VALUE   0.6

0700mm

Use ⏭ and ⏫ to modify the value; in the Fig.29 example the RL1 max. level threshold distance is 700mm.
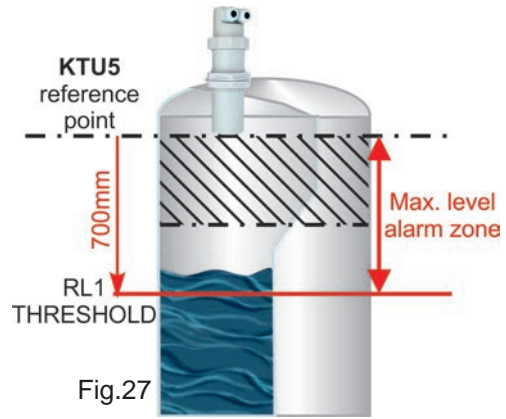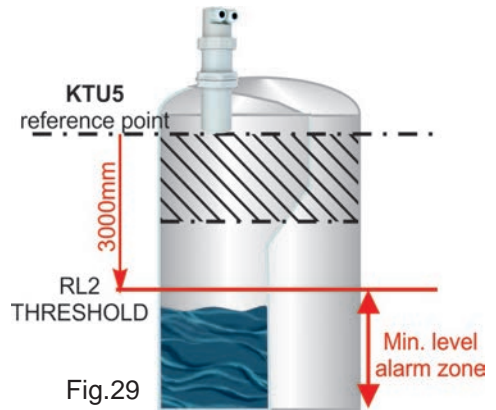
Press ⏎ to confirm.
NB-RL1 inactive with 0000mm

Fig.27

When confirming with the ⏎ button the maximum level threshold value storage, in the example 700m (figures 29 and 30), the **KTU5** activates RL1 with the following default settings for level alarm threshold:
1) MIN / MAX = MAX; maximum level alarm
2) DELAY = 0 sec.; no switching delay
3) SECURITY = YES; relay de-energized, and contact open, during the maximum level alarm
4) ENABLE / DISABLE = ENABLE; alarm threshold function enabled
To change these relay settings is necessary to access the advanced setup menu (pag.16) and any subsequent changes to the RL1 threshold value not affect the relay custom settings.
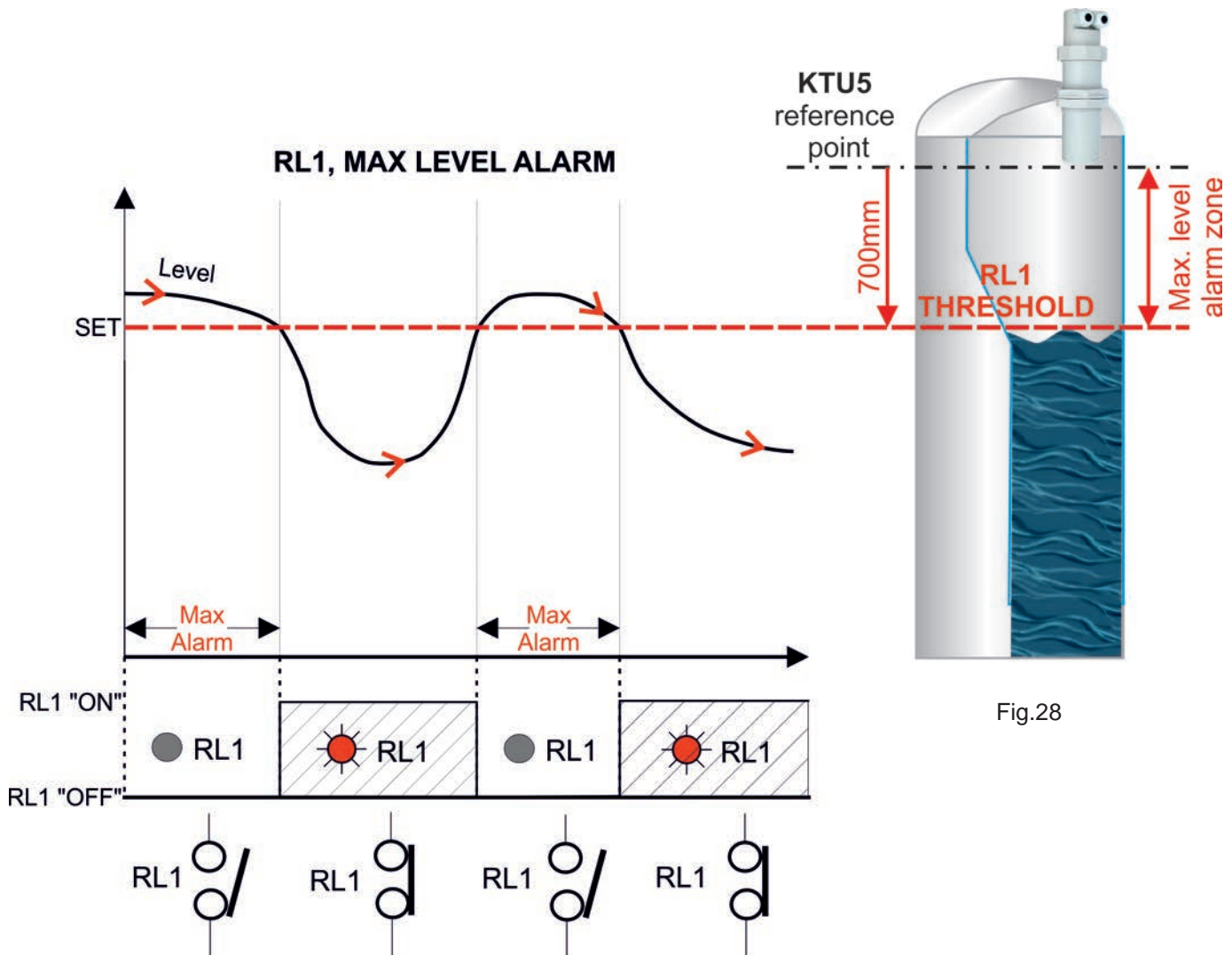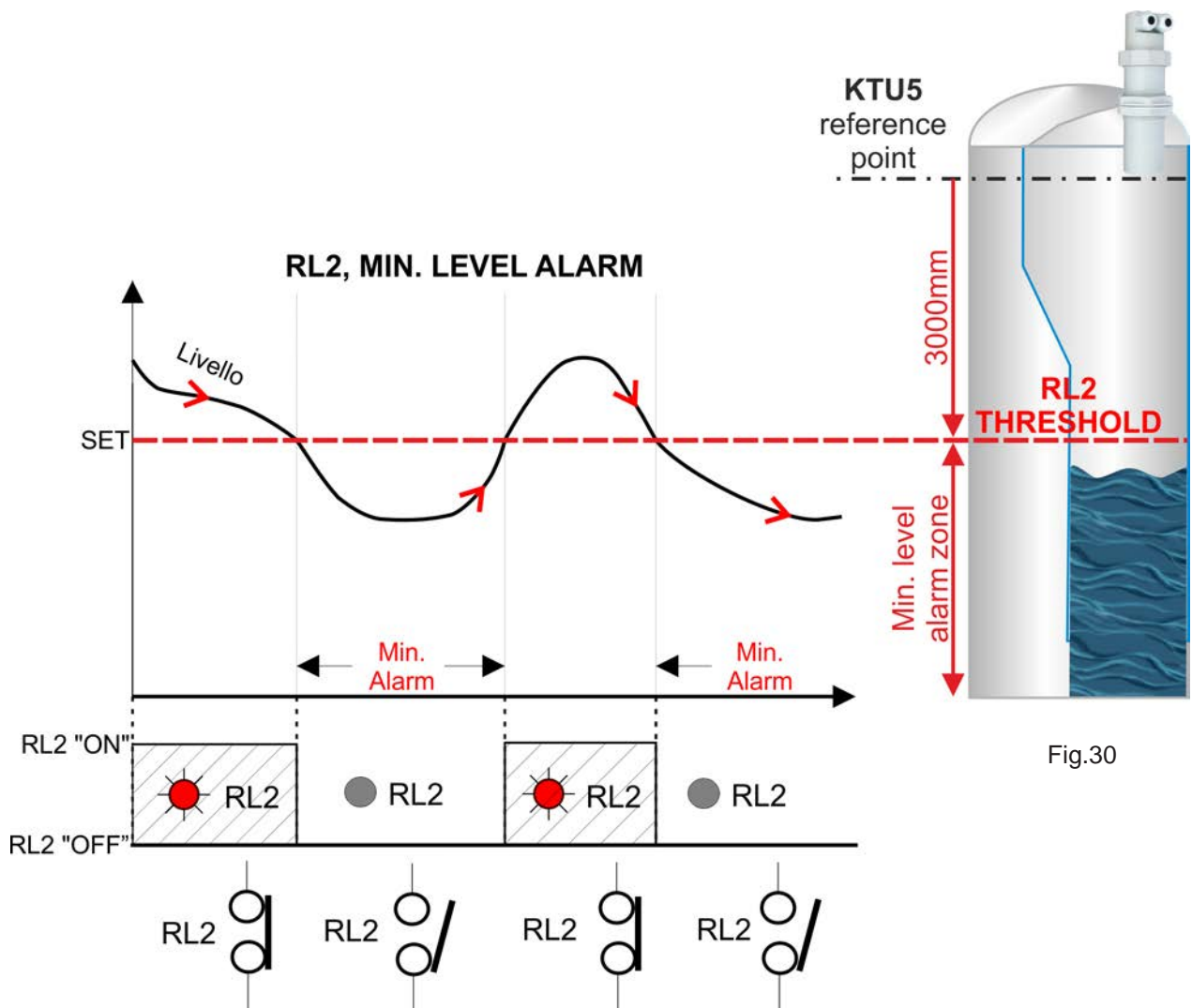
Fig.28

5.2.7 RL2 THRESHOLD

Press ⏎ to display the previous setting. Set the distance from the sensor

SET DISTANCE 4mA   0
SET DISTANCE 20mA
MEDIUM
FILTER COEFFICIENT
BLIND DISTANCE
RL1 THRESHOLD
▶RL2 THRESHOLD
DISPLAY

VALUE   0.7

3000mm

Use ⬆ and ⬆ to modify the value; in the Fig.31 example the RL2 min. level threshold distance is 3000mm.

Press ⏎ to confirm.
NB-RL2 inactive with 0000mm

Fig.29

When confirming with the ⏎ button the maximum level threshold value storage, in the example 3000mm (figures 31 and 32), the **KTU5** activates RL2 with the following default settings for level alarm threshold:
1) MIN / MAX = MIN; minimum level alarm
2) DELAY = 0 sec.; no switching delay
3) SECURITY = YES; relay de-energized, and contact open, during the maximum level alarm
4) ENABLE / DISABLE = ENABLE; alarm threshold function enabled
To change these relay settings is necessary to access the advanced setup menu (pag.16) and any subsequent changes to the RL2 threshold value not affect the relay custom settings.

Fig.30

5.2.8 DISPLAY

Press [ENTER] to access the settings change.

```
SET DISTANCE 4mA        0
SET DISTANCE 20mA
MEDIUM
FILTER COEFFICIENT
BLIND DISTANCE
RL1 THRESHOLD
RL2 THRESHOLD
▶DISPLAY
```

With the [button] button is possible to select the data to display

Press [ENTER] to confirm.

```
                        0.8
▶DISTANCE mm
 LEVEL mm
 LEVEL %
 OUTPUT mA
 TEMP. ˚C
```
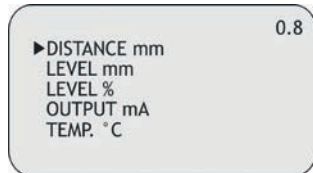
Fig.31

5.2 ECHO MAP

Pressing the **BK**, from RUN mode, to access directly to the echoes digital map display, which are in KTU5 receiving (Fig.34).
This function is useful for:

- properly orient the transducer pointing.
- verify the echoes in acquisition correctness.
- identify any false echo signals that may cause measurement errors.
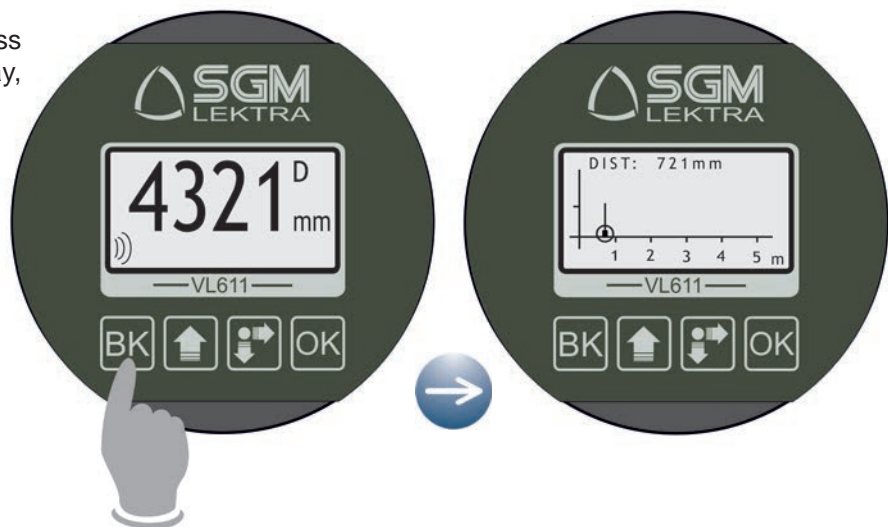
Fig.32
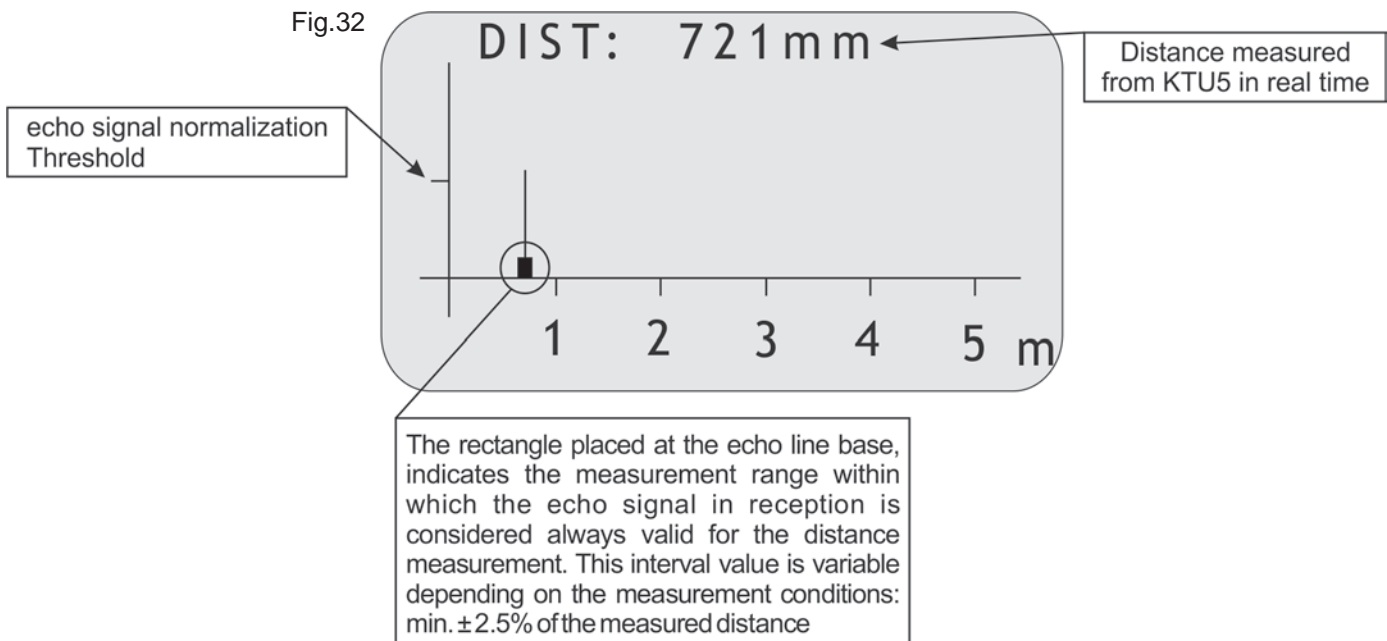
DIST: 721mm

echo signal normalization Threshold

Distance measured from KTU5 in real time

1 2 3 4 5 m

The rectangle placed at the echo line base, indicates the measurement range within which the echo signal in reception is considered always valid for the distance measurement. This interval value is variable depending on the measurement conditions: min. ±2.5% of the measured distance

---

**Documentation subject to technical change with no prior warning**

6. ADVANCED CONFIGURATION MODE

From "RUN" mode, <u>holding down</u> ⬆, press ENTER to the advanced configuration mode access

DISTANCE
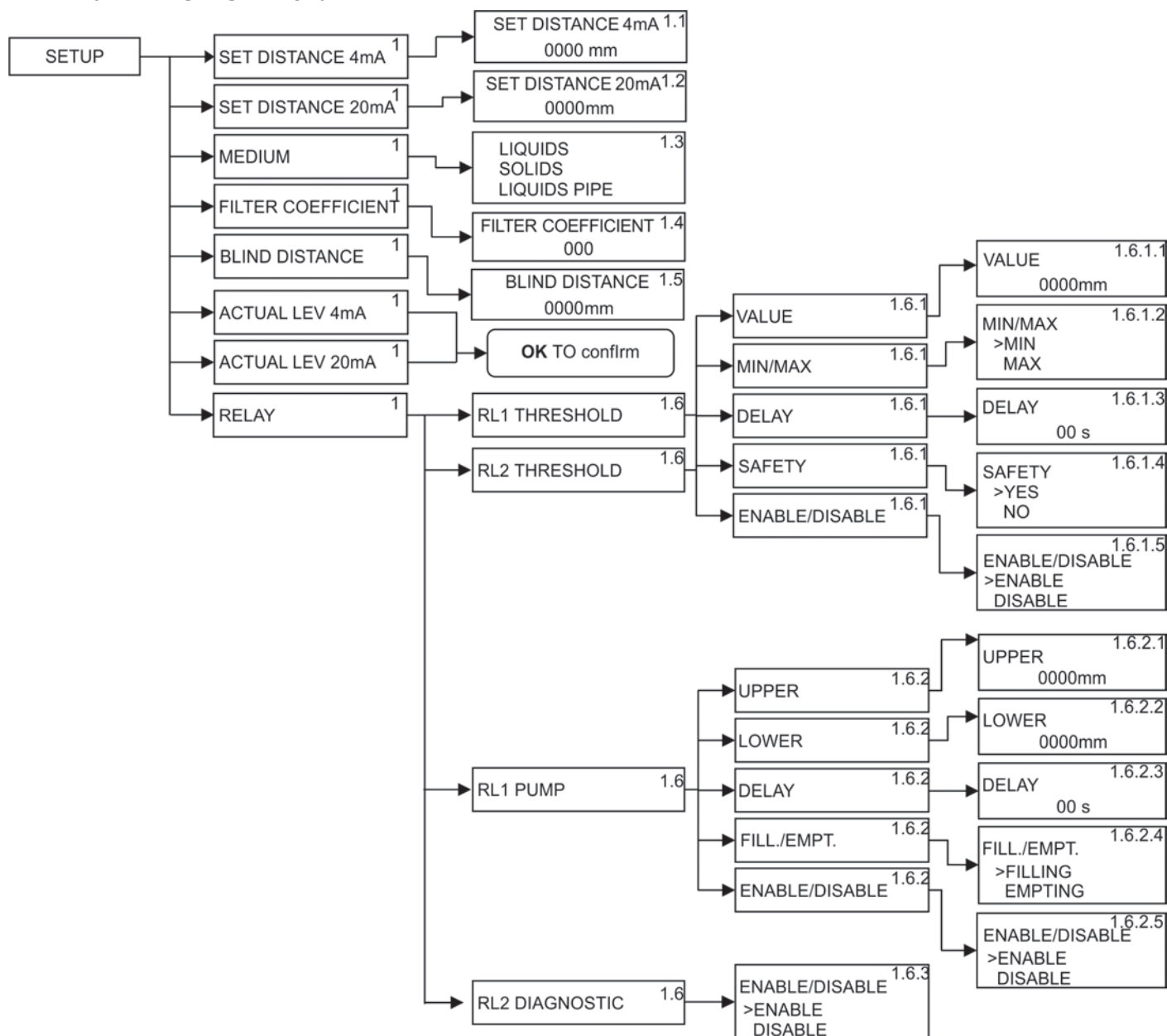**3321** mm

LEVEL
1679 mm

press 🔀 to select the menu and press ENTER to access.
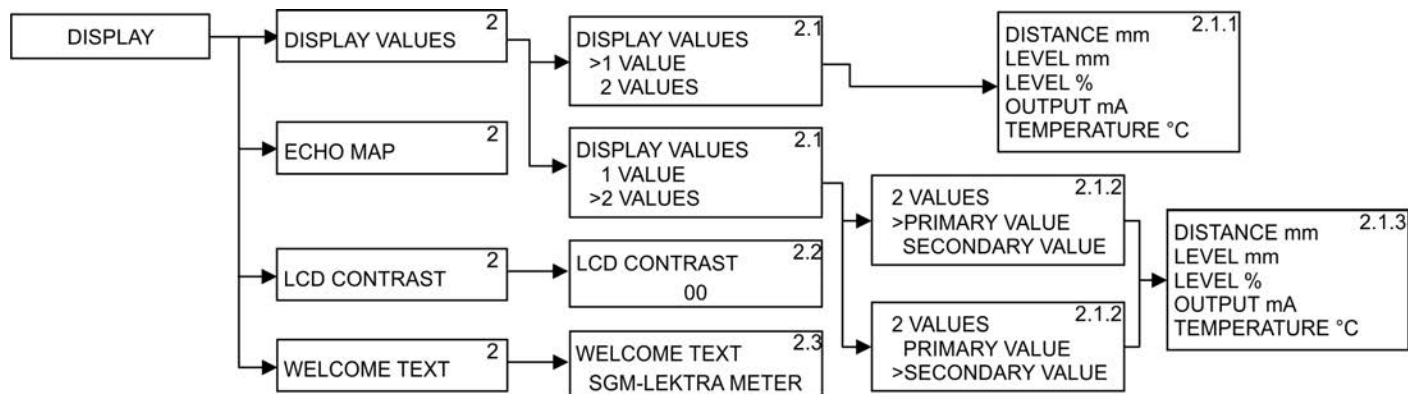Press ◀ to exit

▶SETUP
DISPLAY
DIAGNOSTIC
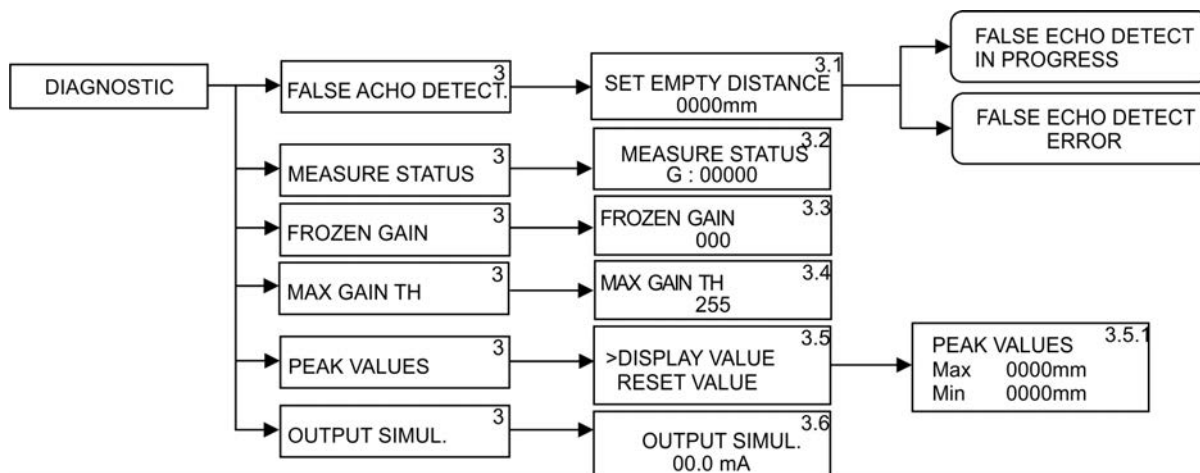SERVICE
INFO

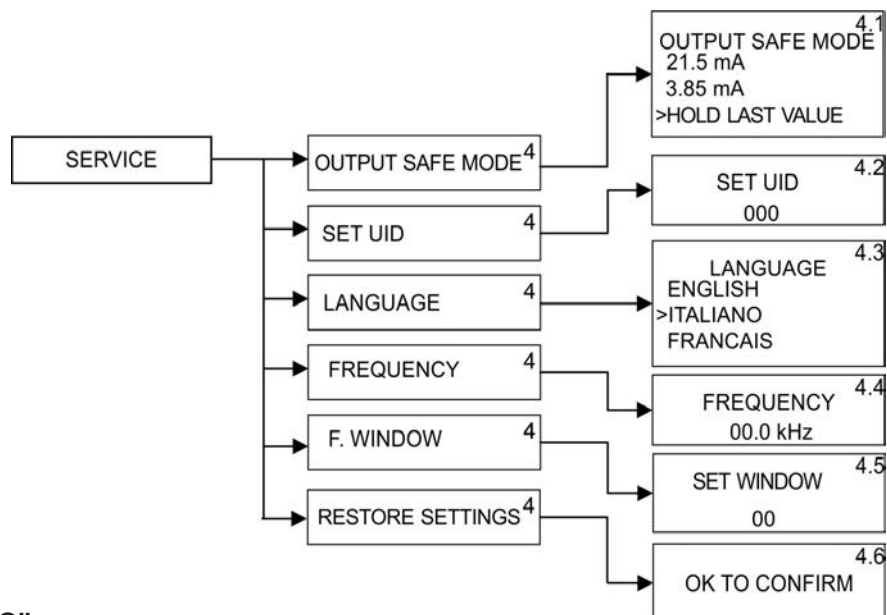## 6.1 Advanced setup menu structure
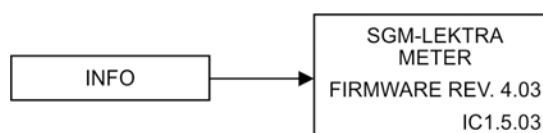
6.1.1 "SETUP" menu

6.1.2 "DISPLAY" menu

6.1.3 "DIAGNOSTIC" menu

6.1.4 "SERVICE" menu

6.1.4 "INFO" menu

7. ADVANCED CONFIGURATION DETAIL

7.1 SETUP

From "RUN" mode, holding down ⬆, press ⏎ to access

▶SETUP
DISPLAY
DIAGNOSTIC
SERVICE
INFO

Select the parameters by moving the cursor with 🔽 and confirm with ⏎

▶SET DISTANCE 4mA   1
SET DISTANCE 20mA
MEDIUM
FILTER COEFFICIENT
BLIND DISTANCE
ACTUAL LEV. 4mA
ACTUAL LEV. 20mA
RELAY

7.1.1 SET DISTANCE 4mA

Position the ▶ cursor on DISTANCE 4mA, press ⏎ to enter

▶SET DISTANCE 4mA   1
SET DISTANCE 20mA
MEDIUM
FILTER COEFFICIENT
BLIND DISTANCE
ACTUAL LEV. 4mA
ACTUAL LEV. 20mA
RELAY

Use ⬆ and 🔽 to modify the value.
Press ⏎ to confirm. ◀ to exit without changes
Default value: 5000mm (range 5m) or 8000mm (range 8m)

SET DISTANCE 4mA   1.1

5000 mm

7.1.2 SET DISTANCE 20mA

Position the ▶ cursor on SET DISTANCE 20mA, press ⏎ to enter

SET DISTANCE 4mA   1
▶SET DISTANCE 20mA
MEDIUM
FILTER COEFFICIENT
BLIND DISTANCE
ACTUAL LEV. 4mA
ACTUAL LEV. 20mA
RELAY

Use ⬆ and 🔽 to modify the value.
Press ⏎ to confirm. ◀ to exit without changes
Default value: 300mm (range 5m) or 500mm (range 8m)

SET DISTANCE 20mA   1.2

0300 mm

7.1.3 MEDIUM

Position the ▶ cursor on MEDIUM, press ⏎ to enter
3 configurations are possible:
SOLIDS - granular solids measurement
LIQUIDS - liquids measurement
LIQUIDS PIPE - liquids measurement in pipe reference
Press 🔽 to select the product type.
Press ⏎ to confirm. ◀ to exit without changes
Default value: LIQUIDS

SET DISTANCE 4mA   1
SET DISTANCE 20mA
▶MEDIUM
FILTER COEFFICIENT
BLIND DISTANCE
ACTUAL LEV. 4mA
ACTUAL LEV. 20mA
RELAY

MEDIUM   1.3

SOLIDS

▶LIQUIDS

LIQUIDS PIPE

7.1.4 FILTER COEFFICIENT

Position the ▶ cursor on FILTER COEFFICIENT, press ⏎ to enter

```
SET DISTANCE 4mA        1
SET DISTANCE 20mA
MEDIUM
▶FILTER COEFFICIENT
BLIND DISTANCE
ACTUAL LEV. 4mA
ACTUAL LEV. 20mA
RELAY
```

Enter a value from 1 to 99. 1 maximum speed, maximum 99 slowness.
0 excludes the filter making the immediate response
Use ⬆ and ⬇ to modify the value.
Press ⏎ to confirm. ◀ to exit without changes
Default value: 20

```
                     1.4
     FILTER COEFF.

        20
```

7.1.5 BLIND DISTANCE

Position the ▶ cursor on BLIND DISTANCE, press ⏎ to enter

```
SET DISTANCE 4mA        1
SET DISTANCE 20mA
MEDIUM
FILTER COEFFICIENT
▶BLIND DISTANCE
ACTUAL LEV. 4mA
ACTUAL LEV. 20mA
RELAY
```

Represent the "BLIND ZONE" of the sensor. Input the desired value in order
to avoid measures near the surface of the sensor (if necessary).
The minimum value is 250mm (5m vers.) or 400mm (8m vers.)
Use ⬆ and ⬇ to modify the value.
Press ⏎ to confirm. OK TO CONFIRM
Default values: 250mm (range 5m) or 400mm (range 8m)

```
                     1.4
     BLIND DISTANCE

      0290 mm
```

7.1.6 ACTUAL LEV. 4mA

Position the ▶ cursor on ACTUAL LEV. 4mA, press ⏎ to enter
Self distance learning function that is associated with the 4mA
(lower value). Make sure that the level corresponds to 0%,
⏎ to associate the actual measure with 4mA output value;
OK TO CONFIRM . **OK TO CONFIRM**

```
SET DISTANCE 4mA        1
SET DISTANCE 20mA
MEDIUM
FILTER COEFFICIENT
BLIND DISTANCE
▶ACTUAL LEV. 4mA
ACTUAL LEV. 20mA
RELAY
```

7.1.7 ACTUAL LEV. 20mA

Place the ▶ cursor on ACTUAL LEV. 20mA, press ⏎ to enter
Self distance learning function that is associated with the 20mA
(lower value). Make sure that the level corresponds to 100%,
⏎ to associate the actual measure with 20mA output value;
OK TO CONFIRM . **OK TO CONFIRM**

```
SET DISTANCE 4mA        1
SET DISTANCE 20mA
MEDIUM
FILTER COEFFICIENT
BLIND DISTANCE
ACTUAL LEV. 4mA
▶ACTUAL LEV. 20mA
RELAY
```

7.1.8 RELAY

Position the ▶ cursor on RELAY, press ⏎ to enter

```
SET DISTANCE 4mA        1
SET DISTANCE 20mA
MEDIUM
FILTER COEFFICIENT
BLIND DISTANCE
ACTUAL LEV. 4mA
ACTUAL LEV. 20mA
▶RELAY
```

In this sub-menù it's possible to setup onboard relays
RL1 can be set as threshold relay or pump-control relay;
RL2 can be set as threshold relay or diagnostic relay.
With the ⬇ button you can select the operation mode,
then pressing ⏎ to confirm the selection

```
                     1.6
     SET RELAYS MODE

    ▶RL 1 THRESHOLD
     RL 2 THRESHOLD
     RL 1 PUMP
     RL 2 DIAGNOSTIC
```
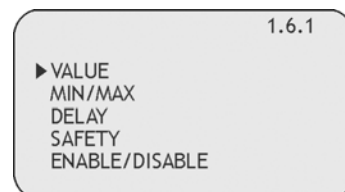
SGM LEKTRA

7.1.8.1 RL1 THRESHOLD (RL2 THRESHOLD equivalent)

Position the ▶ cursor on RL1 THRESHOLD, press ⏎ to enter

```
                                    1.6
         SET RELAYS MODE

      ▶RL 1 THRESHOLD
       RL 2 THRESHOLD
       RL 1 PUMP
       RL 2 DIAGNOSTIC
```

In this submenu you can set the set-point and the relay 1 and 2 action type (only 4-wires versions).

With the ⬚ button you can select the parameter to be programmed.

Press ⏎ to confirm.

```
                                    1.6.1

      ▶VALUE
       MIN/MAX
       DELAY
       SAFETY
       ENABLE/DISABLE
```
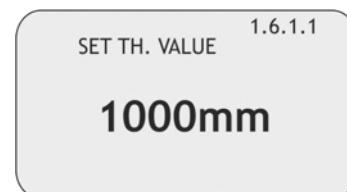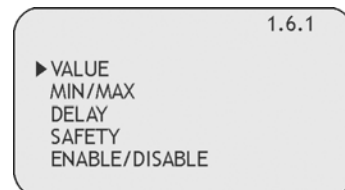
7.1.8.1.1 VALUE

Position the ▶ cursor on VALUE, press ⏎ to enter

```
                                    1.6.1

      ▶VALUE
       MIN/MAX
       DELAY
       SAFETY
       ENABLE/DISABLE
```

It's possible to input the threshold value that corresponds to the distance in mm from the sensor. Use ⬆ and ⬚ to modify the value.

Press ⏎ to confirm. ◀ to exit without changes
Default value: 0000mm
NB-RL1 inactive with 0000mm

```
                        1.6.1.1
       SET TH. VALUE

       1000mm
```
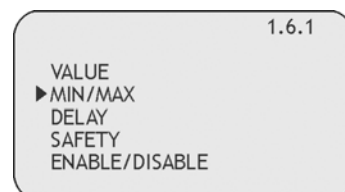
7.1.8.1.2 MIN/MAX

Position the ▶ cursor on MIN/MAX, press ⏎ to enter

```
                                    1.6.1

       VALUE
      ▶MIN/MAX
       DELAY
       SAFETY
       ENABLE/DISABLE
```

It's possible to select if the relay works as maximum level threshold or minimum level threshold.

With the ⬚ button you can select the operation mode.

Press ⏎ to confirm. ◀ to exit without changes
Default value: MAX for RL1; MIN for RL2

```
                        1.6.1.2
       MIN/MAX

        MIN
      ▶MAX
```
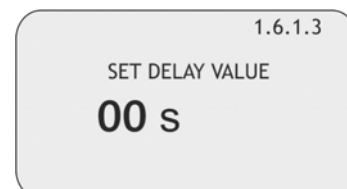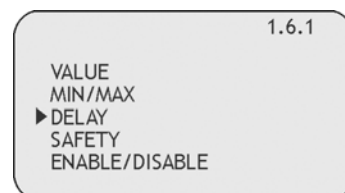
7.1.8.1.3 DELAY

Position the ▶ cursor on DELAY, press ⏎ to enter

```
                                    1.6.1

       VALUE
       MIN/MAX
      ▶DELAY
       SAFETY
       ENABLE/DISABLE
```

It's possible to select the activation delay for the selected relay, from 0 to 99 sec.

Use ⬆ and ⬚ to modify the value.

Press ⏎ to confirm. ◀ to exit without changes
Default value: 00s

```
                        1.6.1.3
       SET DELAY VALUE

       00 s
```

7.1.8.1.4 SAFETY

Position the ▶ cursor on SAFETY, press ⏎ to enter
A "safety alarm" provides a "closed" contact with relay energized
in normal condition (no alarm), the contact switches to "open":
- Alarm condition (eg overcoming MAX);
- In power failure case.

With the 🔘 button you can select the alarm mode.,

Press ⏎ to confirm. ◀ to exit without changes
Default value: YES

```
                    1.6.1
VALUE
MIN/MAX
DELAY
▶SAFETY
ENABLE/DISABLE
```

```
                    1.6.1.4
SAFETY

▶YES
 NO
```

7.1.8.1.5 ABILITA/DISABILITA

Position the ▶ cursor on ENABLE/DISABLE, press ⏎ to enter

```
                    1.6.1
VALUE
MIN/MAX
DELAY
SAFETY
▶ENABLE/DISABLE
```

Select ENABLE to activate relay threshold.
Select DISABLE to not activate relay threshold.
With the 🔘 button you can select the operation mode.
Press ⏎ to confirm. ◀ to exit without changes
Default value: ENABLE

```
                    1.6.1.5
ENABLE/DISABLE

▶ENABLE
 DISABLE
```

7.1.8.2 RL1 PUMP (solo per RL1)

Position the ▶ cursor on PUMP, press ⏎ to enter

```
             SET RELAYS MODE    1.6

RL 1 THRESHOLD
RL 2 THRESHOLD
▶RL 1 PUMP
RL 2 DIAGNOSTIC
```

A pump control functioning activation, with hysteresis, is possible
Two thresholds setting is required:
upper and lower threshold.

With the 🔘 button you can select the parameter to be programmed,
Press ⏎ to confirm.

```
                    1.6.2
▶UPPER
 LOWER
 DELAY
 FILL./EMPT.
 ENABLE/DISABLE
```

7.1.8.2.1 UPPER

Position the ▶ cursor on UPPER, press ⏎ to enter
The upper threshold (see fig.33) is expressed in mm distance from
the sensor. Represents the pump starting point, EMPTY case,
or pump stopping point, FILLING case.

Use 🔼 and 🔘 to modify the value.
Press ⏎ to confirm. ◀ to exit without changes
Default value: 0000mm

```
                    1.6.2
▶UPPER
 LOWER
 DELAY
 FILL./EMPT.
 ENABLE/DISABLE
```

```
                    1.6.2.1
SET UPPER VALUE

0900mm
```

7.1.8.2.2 LOWER

Position the ▶ cursor on LOWER, press ⏎ to enter
The lower threshold (see fig.35) is expressed in mm distance from
the sensor. Represents the pump stopping point, EMPTY case,
or pump starting point, FILLING case.

Use 🔼 and 🔀 to modify the value.
Press ⏎ to confirm. ◀ to exit without changes
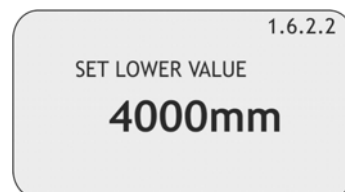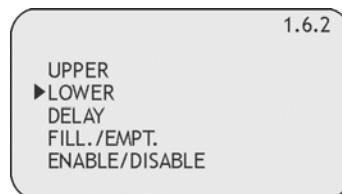Default value: 0000mm
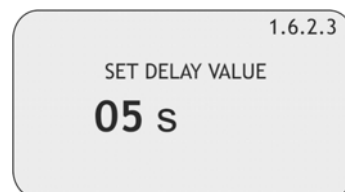
```
                                    1.6.2

UPPER
▶LOWER
DELAY
FILL./EMPT.
ENABLE/DISABLE
```

```
                                  1.6.2.2

        SET LOWER VALUE

        4000mm
```

7.1.8.2.3 DELAY

Position the ▶ cursor on DELAY, press ⏎ to enter

```
                                    1.6.2

UPPER
LOWER
▶DELAY
FILL./EMPT.
ENABLE/DISABLE
```

Set the relay delay activation, from 0 to 99 sec.
Use 🔼 and 🔀 to modify the value.
Press ⏎ to confirm. ◀ to exit without changes
Default value: 00
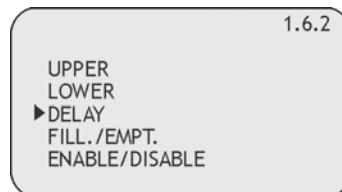
```
                                  1.6.2.3

        SET DELAY VALUE

        05 s
```

7.1.8.2.4 FILL./EMPT.

Position the ▶ cursor on FILL./EMPT., press ⏎ to enter

```
                                    1.6.2

UPPER
LOWER
DELAY
▶FILL./EMPT.
ENABLE/DISABLE
```

it's possible to select the mode of pump control (FILLING or EMPTING).
With the 🔀 button you can select the operation mode.
Press ⏎ to confirm. ◀ to exit without changes
Default value: EMPTING

```
                                  1.6.2.4

    FILL./EMPT.

    FILLING
    ▶EMPTING
```


Fig.33

7.1.8.2.5 ENABLE/DISABLE

Position the ▶ cursor on ENABLE/DISABLE, press ⏎ to enter
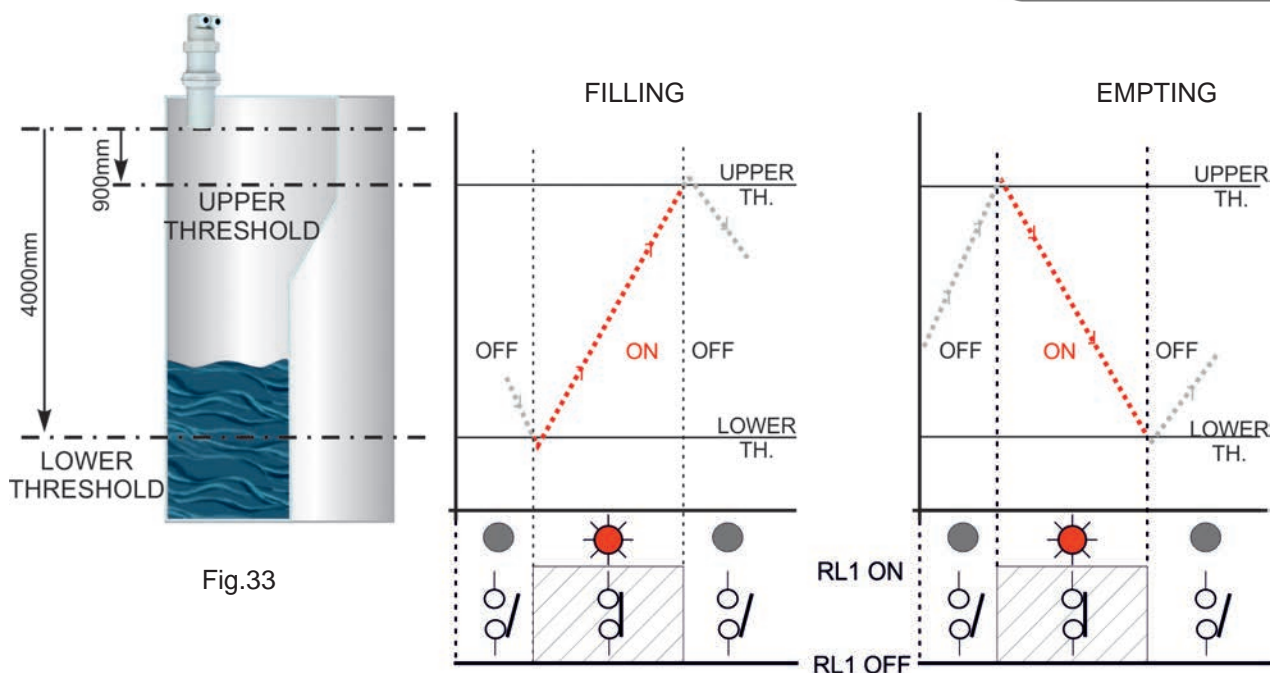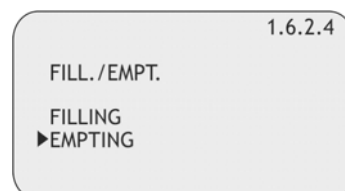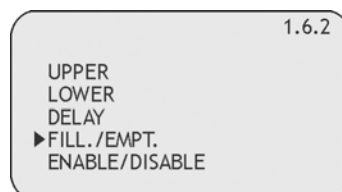
```
                                        1.6.2
UPPER
LOWER
DELAY
FILL./EMPT.
▶ENABLE/DISABLE
```

Select ENABLE to activate relay threshold.
Select DISABLE to not activate relay threshold.

With the 🔘 button you can select the operation mode.

Press ⏎ to confirm. ◀ to exit without changes
Default value: DISABLE

```
                                      1.6.2.5
        ENABLE/DISABLE

        ENABLE
      ▶DISABLE
```

7.1.8.3 RL2 DIAGNOSTIC

Position the ▶ cursor on RL2 DIAGNOSTIC, press ⏎ to enter
If it becomes necessary the KTU5 functional control, it's possible
to enable the RL2 alarm output function. In this case, enabling the function,
RL2 is energized in normal operation (RL2 LED on) and is de-energized
(LED RL2 off, safety alarm) when at least one of the four conditions
mentioned below, shall be verified:
- TEMP. :   temperature out of range
- ECHO :   no echo is detected
- GAIN :   the sensor's gain exceed the value setted in Max Gain TH (3.4)
- DIST. :   the measured distance exceed the 120% of the maximum
            distance in setup

```
                                        1.6
        SET RELAYS MODE

    RL 1 THRESHOLD
    RL 2 THRESHOLD
    RL 1 PUMP
  ▶RL 2 DIAGNOSTIC
```

```
                                        1.6.3
      ENABLE/DISABLE

      ENABLE
    ▶DISABLE
```

With the 🔘 button you can select the operation mode.

Press ⏎ to confirm. ◀ to exit without changes
Default value: DISABLE

NOTE: when an error occurs, a "**!**" is flashing on the display: press 🔘 to show a message that indicate
what kind of error is present. The KTU5 automatically returns to RUN mode.

7.2 DISPLAY

From "RUN" mode, <u>holding down</u> 🔼 , press ⏎ to
access
Position the ▶ cursor on DISPLAY, press ⏎ to enter

```
SETUP
▶DISPLAY
DIAGNOSTIC
SERVICE
INFO
```

Select the parameters by moving the cursor with 🔘
and confirm with ⏎

```
                                        2
▶DISPLAY VALUES
ECHO MAP
LCD CONTRAST
WELCOME TEXT
```

7.2.1 DISPLAY VALUES

Position the ▶ cursor on DISPLAY VALUES, press ⏎ to enter

```
                                        2
▶DISPLAY VALUES
ECHO MAP
LCD CONTRAST
WELCOME TEXT
```

It's possible to select if one value with big digits or two values are shown
on the display in "RUN" mode
With the 🔘 button you can select the parameter to be programmed.
Press ⏎ to confirm. ◀ to exit without changes

```
                                        2.1
    DISPLAY VALUES

  ▶1 VALUE
    2 VALUES
```
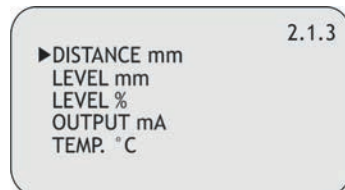
7.2.1.1 1 VALUE

Position the ▶ cursor on 1 VALUE, press ⊞ to enter

```
                                        2.1
DISPLAY VALUES
▶1 VALUE
 2 VALUES
```

Only one value is displayed; it's possible to choose from 5 parameters.
With the 🔛 button you can select data to display.
Press ⊞ to confirm. ◀ to exit without changes

```
                                      2.1.3
▶DISTANCE mm
 LEVEL mm
 LEVEL %
 OUTPUT mA
 TEMP. °C
```

$$2013^{D}_{mm}$$

7.2.1.2 2 VALUES

Position the ▶ cursor on 2 VALUES, press ⊞ to enter

```
                                        2.1
DISPLAY VALUES
 1 VALUE
▶2 VALUES
```

Two values are displayed; it's possible to choose which one is the primary
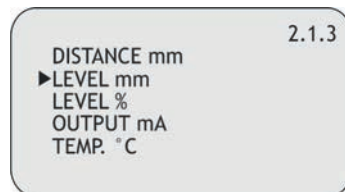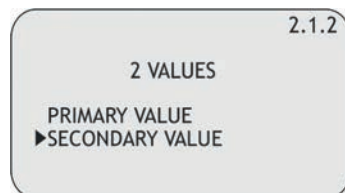and which is the secondary, each with a choice of 5 parameters
With the 🔛 button you can select data to display
Press ⊞ to confirm. ◀ to exit without changes

```
                                      2.1.2
             2 VALUES

▶PRIMARY VALUE
 SECONDARY VALUE
```

```
                                      2.1.3
▶DISTANCE mm
 LEVEL mm
 LEVEL %
 OUTPUT mA
 TEMP. °C
```

```
                                      2.1.2
             2 VALUES

 PRIMARY VALUE
▶SECONDARY VALUE
```

```
                                      2.1.3
 DISTANCE mm
▶LEVEL mm
 LEVEL %
 OUTPUT mA
 TEMP. °C
```
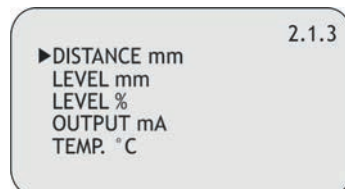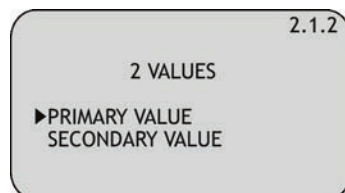
7.2.2 ECHO MAP

Position the ▶ cursor on ECHO MAP, press [ENTER] to enter

```
DISPLAY VALUES          2
▶ECHO MAP
LCD CONTRAST
WELCOME TEXT
```

Detailed function description on page 13, figure 32

[◀] to exit and return to the menu 2

```
DIST: 3005mm        2.2



      1  2  3  4  5  6  7  8  m
```
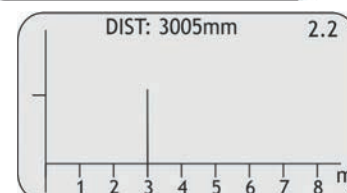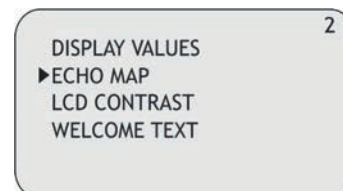
7.2.3 LCD CONTRAST

Position the ▶ cursor on LCD CONTRAST, press [ENTER] to enter

```
DISPLAY VALUES          2
ECHO MAP
▶LCD CONTRAST
WELCOME TEXT
```

it's possible to adjust the contrast of LCD, simply increasing or decreasing the value of a parameter from 0 to 63.

Use [▲] and [▼] to modify the value.

Press [ENTER] to confirm. [◀] to exit without changes

Default value: 32

```
                      2.3
    LCD CONTRAST
        32
```
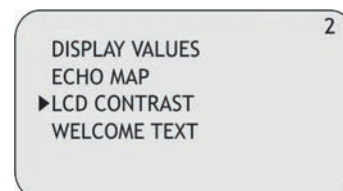
7.2.4 WELCOME TEXT

Position the ▶ cursor on WELCOME TEXT, press [ENTER] to enter

```
DISPLAY VALUES          2
ECHO MAP
LCD CONTRAST
▶WELCOME TEXT
```

It's possible to edit or delete the message that is displayed by the KTU5 during the ignition phase.

Use [▲] (up scroll) and [▼] (down scroll) to change the digit; [ENTER] to move the digit to the right. To confirm press [ENTER] repeatedly until leave the parameter.

[◀] to exit without changes

Default value: SGM-LEKTRA KTU5

```
WELCOME TEXT       2.4
   SGM-LEKTRA
      KTU5
```
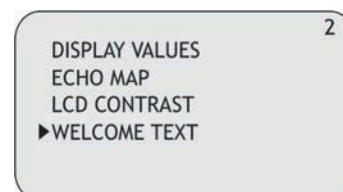
7.3 DIAGNOSTIC

From "RUN" mode, <u>holding down</u> [▲] , press [ENTER] to access

Position the ▶ cursor on DIAGNOSTIC, press [ENTER] to ent[er]

```
SETUP
DISPLAY
▶DIAGNOSTIC
SERVICE
INFO
```

Select the parameters by moving the cursor with [▼] and confirm with [ENTER]

```
▶FALSE ECHO DETECT     3
MEASURE STATUS
FROZEN GAIN
MAX GAIN TH.
PEAK VALUES
OUTPUT SIMUL.
```
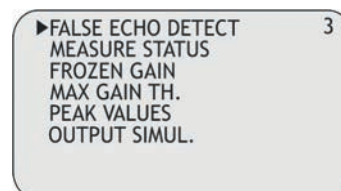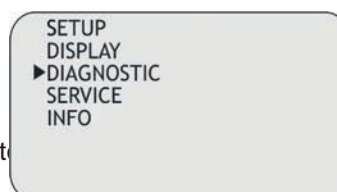
7.3.1 FALSE ECHO DETECT

Position the ▶ cursor on FALSE ECHO DETECT, press [ENTER] to enter

NB - To use this parameter the tank *must strictly be empty*

```
▶FALSE ECHO DETECT     3
MEASURE STATUS
FROZEN GAIN
MAX GAIN TH.
PEAK VALUES
OUTPUT SIMUL.
```
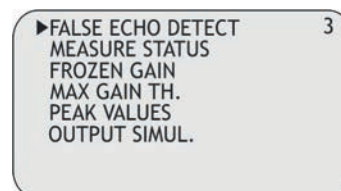
It's necessary to input the empty distance (distance from the tank bottom)

Use ⬆ and ⏩ to modify the value.

Press ⏎ to confirm. ◀ to exit without changes
"KTU5" automatically stores all echoes detected and implemented an
echo true and any eventual spurious echoes automatic selection. After this,
the following   message is displayed: **FALSE ECHO DETECT PROGRESS**
After procedure completion, the following message is displayed:
FALSE ECHO DETECT DONE
If something is not correct (e.g. wrong empty distance value, obstacles
that hides the bottom) the following message is displayed:
FALSE ECHO DETECT ERROR
Note: False echo detect procedure is not recommended for pipe and stand-pipe applications
*   To delete this function, need to restore the default parameters (see par. 7.4.5)*

```
                                    3.1
      SET EMPTY DISTANCE

         0000 mm
```

7.3.3 MEASURE STATUS

Position the ▶ cursor on MEASURE STATUS, press ⏎ to enter

```
FALSE ECHO DETECT        3
▶MEASURE STATUS
 FROZEN GAIN
 MAX GAIN TH.
 PEAK VALUES
 OUTPUT SIMUL.
```

It's possible to display the gain of the system, with values from 0 to 255.
While displayed, the automatic gain control is not active

◀ to exit

```
                                    3.2
        MEASURE STATUS

          G : 00000
```

7.3.4 FROZEN GAIN

Position the ▶ cursor on FROZEN GAIN, press ⏎ to enter

```
FALSE ECHO DETECT        3
 MEASURE STATUS
▶FROZEN GAIN
 MAX GAIN TH.
 PEAK VALUES
 OUTPUT SIMUL.
```

It's possible to fix a value of gain (from 1 to 255) and consequently
disable the automatic gain control. Once the value is 000 the automatic
gain control restarts

Use ⬆ and ⏩ to modify the value.

Press ⏎ to confirm. ◀ to exit without changes
Default value: 000

```
                                    3.3
        FROZEN GAIN

          000
```

7.3.5 MAX GAIN TH

Position the ▶ cursor on **MAX GAIN TH**, press ⏎ to enter

```
FALSE ECHO DETECT        3
 MEASURE STATUS
 FROZEN GAIN
▶MAX GAIN TH.
 PEAK VALUES
 OUTPUT SIMUL.
```

It's possible to input a value of gain that it should be not reached
in normal operation. If the gain exceeds this value, the "GAIN"
error code is activated.

Use ⬆ and ⏩ to modify the value.

Press ⏎ to confirm. ◀ to exit without changes
Default value: 255 (Max gain)

```
                                    3.4
        MAX GAIN TH
          255
```

7.3.6 PEAK VALUES

Position the ▶ cursor on PEAK VALUES, press ⏎ to enter

```
FALSE ECHO DETECT     3
MEASURE STATUS
FROZEN GAIN
MAX GAIN TH.
▶PEAK VALUES
OUTPUT SIMUL.
```

The system store the maximum distance and the minimum distance measured since the power is turned ON.
It's possible to see those values or reset the values
With the 🔽 button you can select the function.
Press ⏎ to confirm.

```
                          3.5
▶DISPLAY VALUES

 RESET VALUES
```

7.3.6.1 DISPLAY VALUES

Position the ▶ cursor on DISPLAY VALUES, press ⏎ to enter

```
                          3.5
▶DISPLAY VALUES

 RESET VALUES
```

Displays the max. and min. distance measured from power on.
◀ to exit.
NB - The peak values stored are erased every time the KTU5 turns-off

```
                         3.5.1
       PEAK VALUES

  MAX   0000mm

  MIN   0000mm
```

7.3.6.2 RESET VALUES

Position the ▶ cursor on RESET VALUES, press ⏎ to reset
◀ to return to the previous menu.

```
                          3.5
     DISPLAY VALUES

 ▶RESET VALUES
```

7.3.7 OUTPUT SIMULATION

WARNING - *entering in the SIMULATION function, the current output is not in function of the level measurement. To restore the current as a measured level function, press the ⏎ button 3 times (RUN mode)*

Position the ▶ cursor on OUTPUT SIMULATION, press ⏎ to enter .

It's possible to force the analog output to a desired value.

Use 🔼 and 🔽 to modify the value.

Press ◀ to return to the previous menu.

```
FALSE ECHO DETECT     3
MEASURE STATUS
FROZEN GAIN
MAX GAIN TH.
PEAK VALUES
▶OUTPUT SIMUL.
```

```
                          3.6
     OUTPUT SIMUL.

     00.0 mA
```

7.4 <u>SERVICE</u>

From "RUN" mode, <u>holding down</u> ⬆ , press ⏎ to access

Position the ▶ cursor on SERVICE, press ⏎ to enter

```
SETUP
DISPLAY
DIAGNOSTIC
▶SERVICE
INFO
```

Select the parameters by moving the cursor with ⬇➡

and confirm with ⏎

```
                                    4
▶OUTPUT SAFE MODE
 SET UID
 LANGUAGE
 FREQUENCY
 F. WINDOW
 RESTORE SETTINGS
```

7.4.1 OUTPUT SAFE MODE

Position the ▶ cursor on OUTPUT SAFE MODE, press ⏎ to enter

```
                                    4
▶OUTPUT SAFE MODE
 SET UID
 LANGUAGE
 FREQUENCY
 F. WINDOW
 RESTORE SETTINGS
```

It's possible to choose a analog output value durin diagnostic errors.
"*21.5 mA*" forces the current output to 21,5mA
"*3.85 mA*" forces the current output to 3,85mA
"*HOLD LAST VALUE*" maintains the output at the last valid value.

With the ⬇➡ button you can select the operation mode.

Press ⏎ to confirm. ◀ to exit without changes
Default value: HOLD LAST VALUE

```
                                  4.1
    OUTPUT SAFE MODE

  ▶21.5 mA
   3.85 mA
   HOLD LAST VALUE
```

7.4.2 SET UID

Position the ▶ cursor on SET UID, press ⏎ to enter
Can assign the address UID in this parameter, for a
MUDBUS RTU network

```
                                    4
 OUTPUT SAFE MODE
▶SET UID
 LANGUAGE
 FREQUENCY
 F. WINDOW
 RESTORE SETTINGS
```

Use ⬆ and ⬇➡ to modify the value.
Press ⏎ to confirm. ◀ to exit without changes
Default value: 001

```
                                  4.2
         SET UID

         001
```

7.4.3 LANGUAGE

Position the ▶ cursor on LANGUAGE, press ⏎ to enter

Sets the menu language: English, Italian, French

```
                                    4
 OUTPUT SAFE MODE
 SET UID
▶LANGUAGE
 FREQUENCY
 F. WINDOW
 RESTORE SETTINGS
```

Press ⬇➡ to select the menu language.
Press ⏎ to confirm. ◀ to exit without changes

```
         LANGUAGE          4.3

   ENGLISH
  ▶ITALIANO
   FRANCAIS
```

7.4.5 CHECK FREQUENCY

Position the ▶ cursor on CHECK FREQUENCY, press 🔘 to enter

```
                                              4
    OUTPUT SAFE MODE
    SET UID
    LANGUAGE
  ▶ FREQUENCY
    F. WINDOW
    RESTORE SETTINGS
```

It's possible to check the computed sensor emission frequency
🔙 to exit

```
                                            4.5

          FREQUENCY

          00.0 kHz
```

7.4.6 F. WINDOWS

Position the ▶ cursor on F. WINDOWS, press 🔘 to enter
Refer to figure 32 on page 13 .The F.WINDOW is the sensitive
area width around the true echo. All echoes detected inside the
F.WINDOW are valid. F.WINDOW automatically centers itself
in the most probable echo neighborhood and automatically adjusts
its width (step). The step value of the window, expressed in cm,
is represented by SET WIDTH; for example: parameter set to 5; the
sensor is hooked to a 4m distant signal echo; suddenly the echo signal
disappears and a echo signal is detected to 1m; KTU5 will start to open
the search range with steps of 5cm at each echo signal emission, so to
cover the 3 meters that separate the 4m distant signal echo by the new
1m distant echo, KTU5 will take 60 emissions to reach the new 1m
distance eco. This parameter serves to filter false echo signals products,
for example, by the agitator blades. Range: 00÷20

Press 🔘 to confirm. 🔙 to exit without changes
Default value: 05

```
                                              4
    OUTPUT SAFE MODE
    SET UID
    LANGUAGE
    FREQUENCY
  ▶ F. WINDOW
    RESTORE SETTINGS
```

```
                                            4.6
          SET WIDTH

          00
```

7.4.5 RESTORE SETTING

Position the ▶ cursor on RESTORE SETTING, press 🔘 to enter

```
                                              4
    OUTPUT SAFE MODE
    SET UID
    LANGUAGE
    FREQUENCY
    F. WINDOW
  ▶ RESTORE SETTINGS
```

Press 🔘 to restore the KTU5 default settings
🔙 to exit without restored the KTU5 default settings.

```
                                              4

          OK TO CONFIRM
```

7.5 INFO

Position the ▶ cursor on INFO, press 🔘 to enter

```
    SETUP
    DISPLAY
    DIAGNOSTIC
    SERVICE
  ▶ INFO
```

In addition to information about the manufacturer, are displayed the
firmware revision and the configuration index.
🔙 to exit.

```
          SGM-LEKTRA          5
             KTU5
    FIRMWARE  REV.  1.01

             I.C  1.1.01
```

Note: