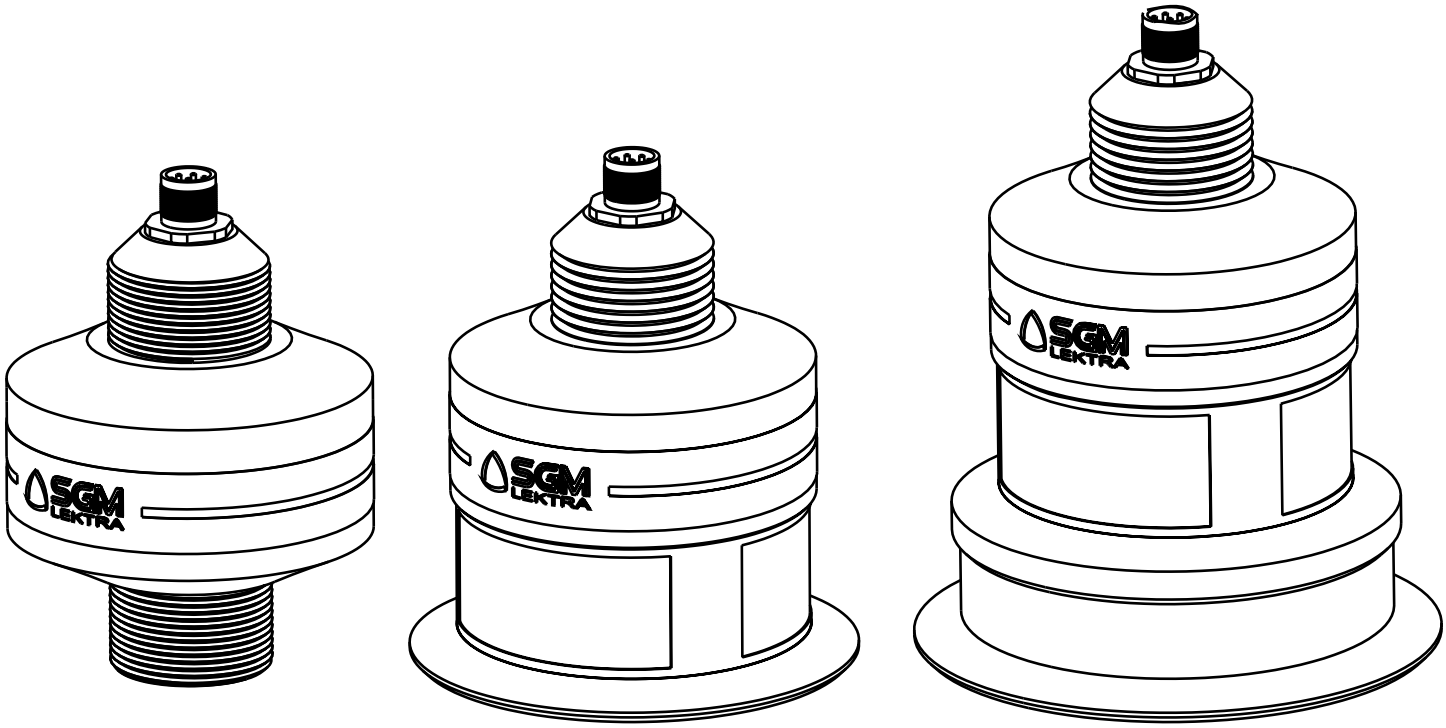
PTU50/51/56

ultrasonic level transmitter



technical documentation EN Rev. Of 21/03/2023

sgm lektra

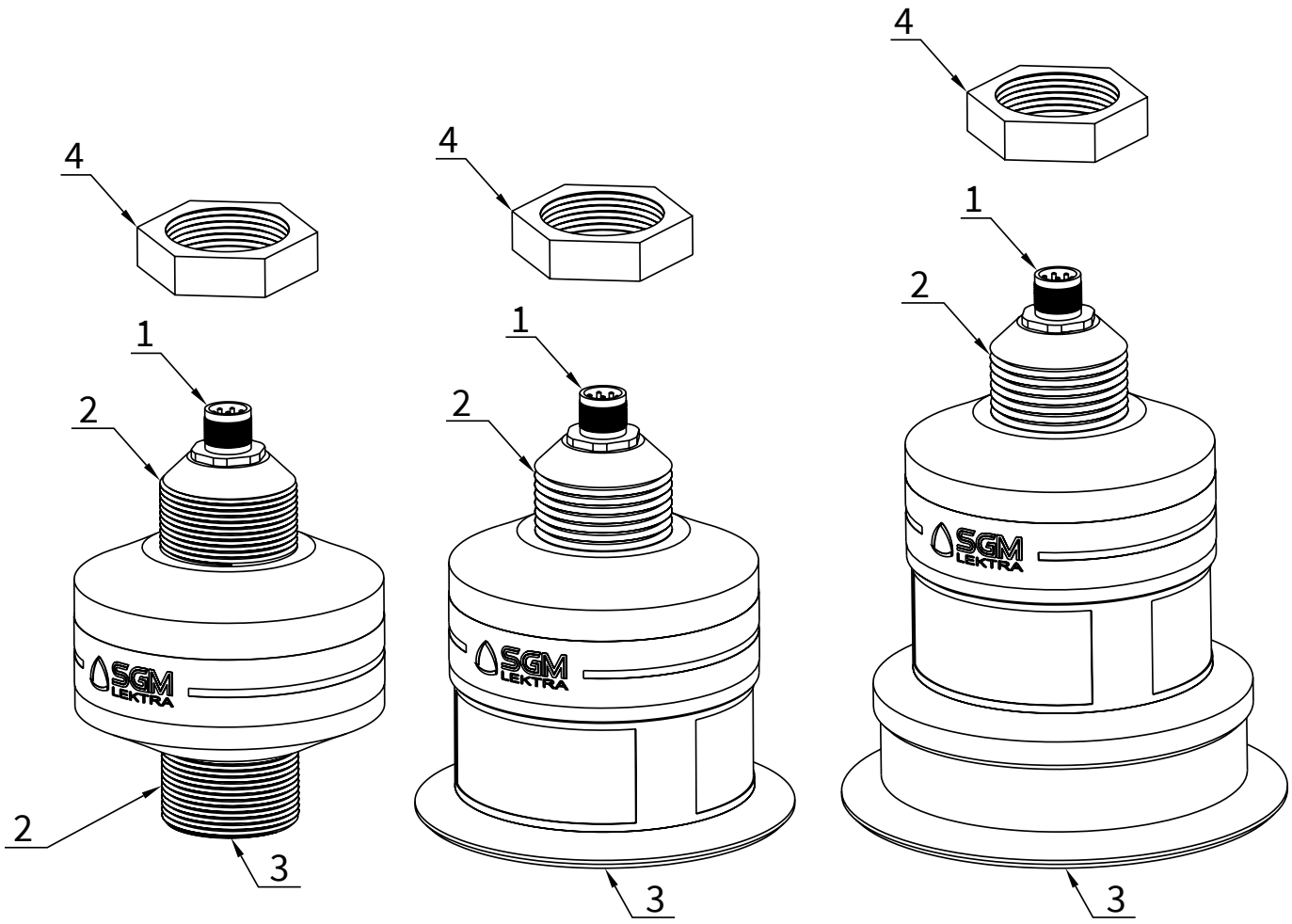
CONTENTS

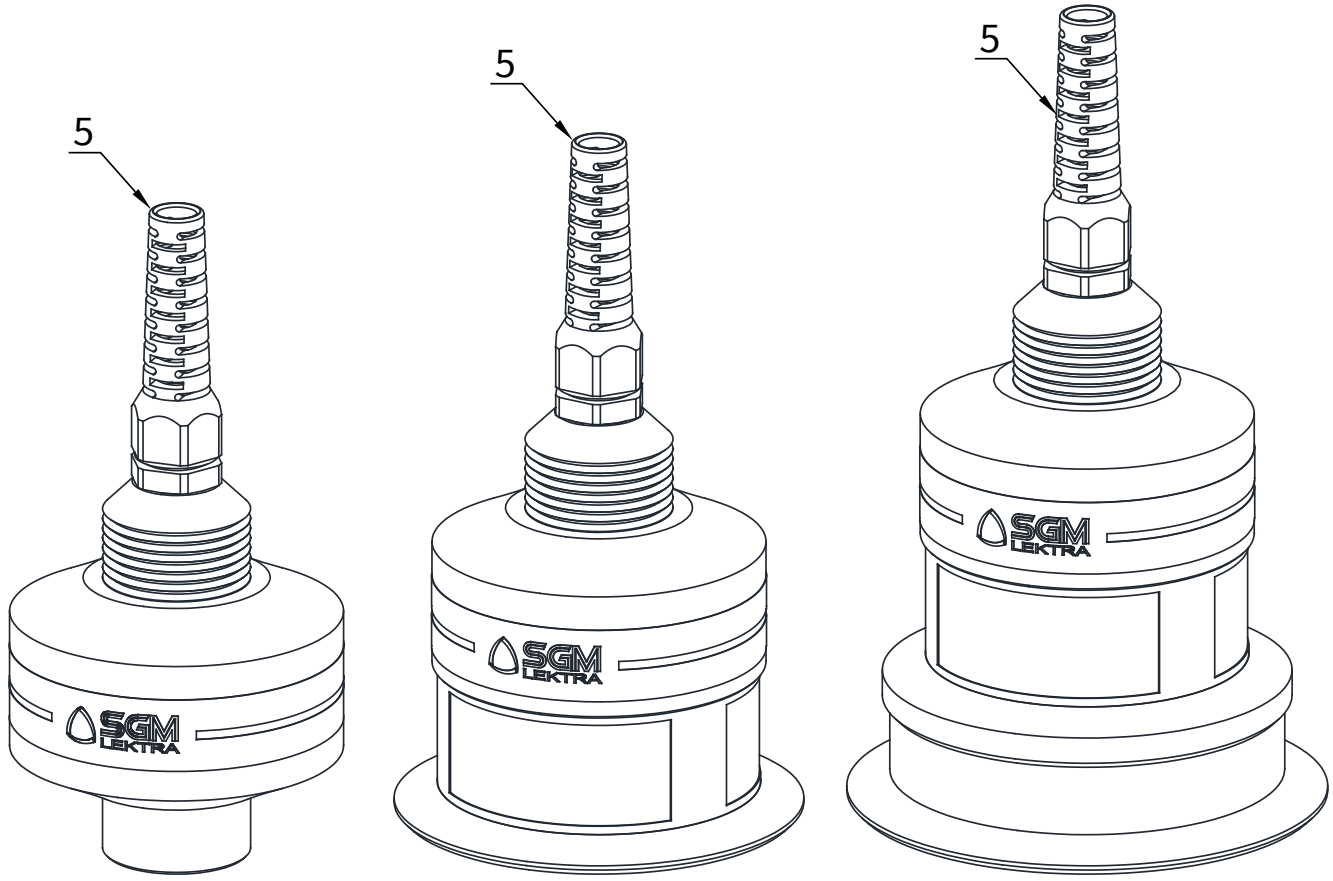
1-WARRANTY

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.

2-PRODUCT

PTU50 **PTU51** **PTU56**

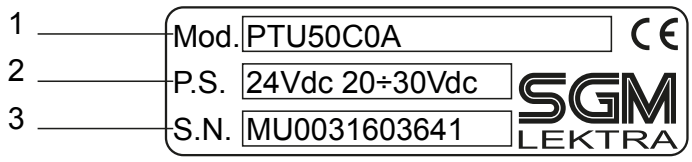




1. Connector
2. 1” GAS
3. Sensor
4. PP fixing bolt
5. Cabled cable IP68 version

2.1 - IDENTIFICATION

Each meter has an adhesive identification plate on which are the meter main data.
The following picture describes the information and data on the identification plate.



1. Product code
2. Power supply
3. Serial number

3-FEATURES

Housing material
Polypropylene (PP)

Mechanical installation
1”GAS M - PP flange DN100/125 opt.

Protection degree
IP68

Electrical connection
IP67 male connector with 5/10/15/20m linking cable
IP68 10m cacled cable

Working temperature
-20°C ÷ +60°C

Pressure
From 0,5 to 1,5 bar (absolute)

Power supply
20÷30Vdc

Power consumption
1.5W

Analog output
4÷20mA max 750ohm

Digital communication
MODBUS RTU

Max measure range
PTU50 0.05÷1m; PTU51 0.3÷6m; PTU56 0,5÷12m
In case of non perfectly reflecting surfaces, the maximum distance value will be reduced

Temperature compensation
digital in the working temperature

Accuracy
±0,2% (of the measured distance) not better than ±3mm (PTU50 ±1mm)

Resolution
1mm

Calibration
VLW602 prog. module with 4 buttons or by MODBUS RTU

Warm-up
30 minutes typical

LCD Display
matrix LCDdisplay on VLW602 module (opt.)

J-BOX Material
Polycarbonate

J-BOX protection
IP65

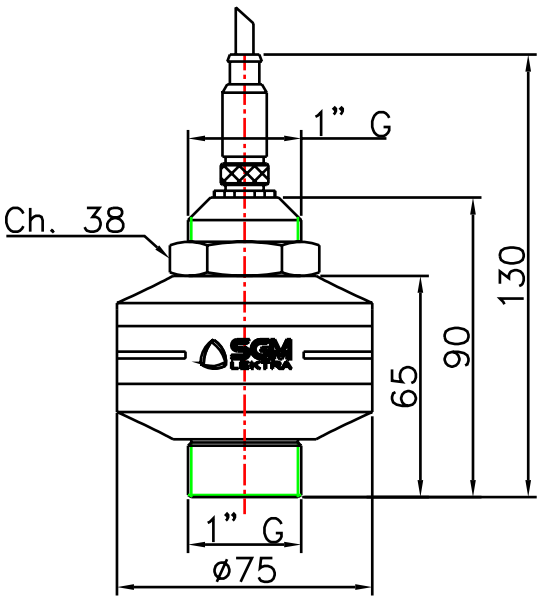
4-DIMENSIONS

4.1 - MECHANICAL DIMENSIONS

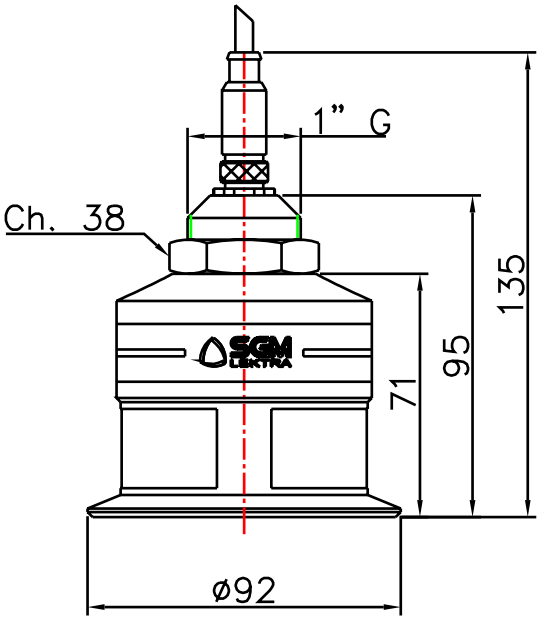
The PTU50, PTU51 and PTU56 transmitter have the 1“ GAS M threaded, equipped with 1” PP fixing bolt.
Also available with:

PTU50, 51 - DN100 PN6 UNI 1092-1/PP flange (optional accessory)
PTU56 - DN125 PN6 UNI 1092-1/PP flange (optional accessory)

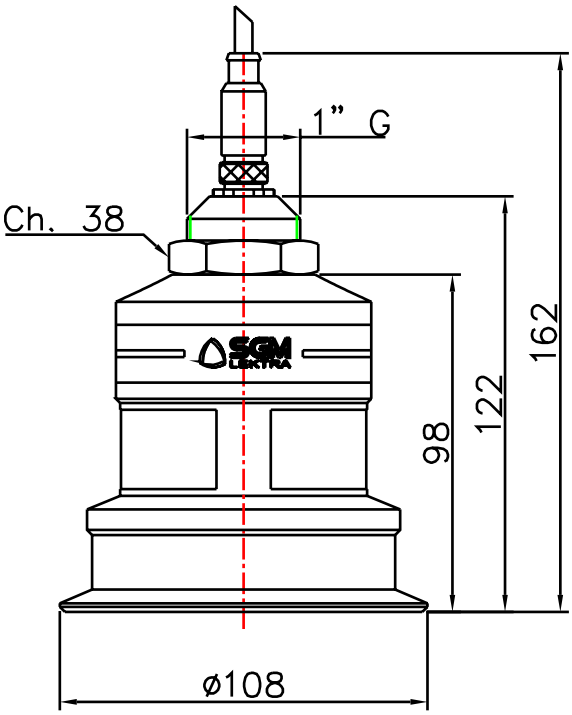
PTU50



PTU51

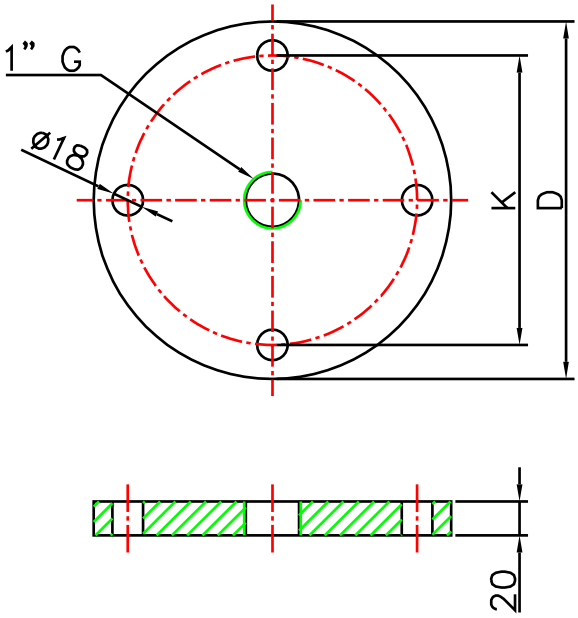


PTU56

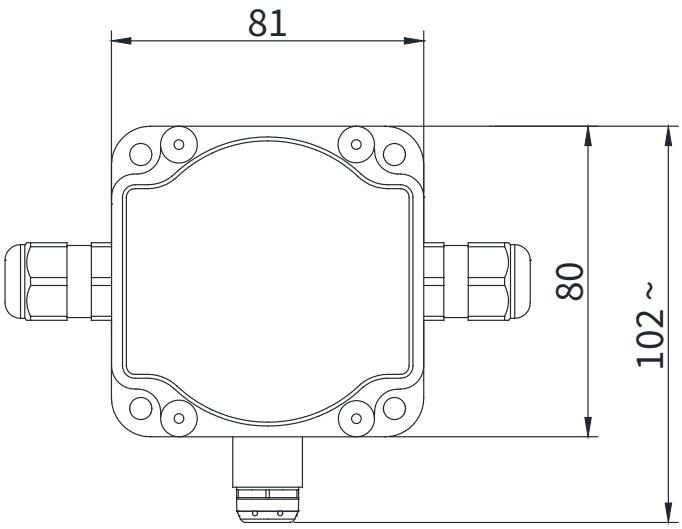


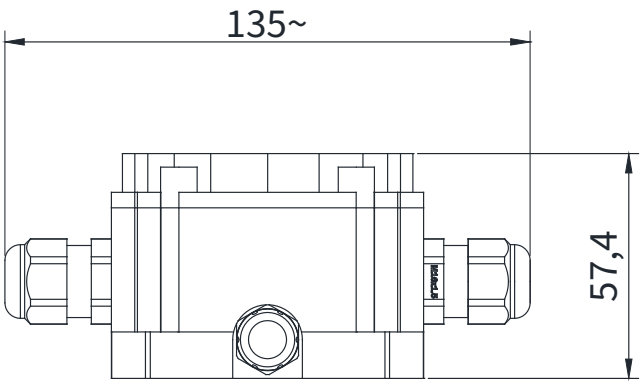
Flange DN100/125 PN6
UNI 1092-1/PP
(optional accessories)

D: DN100 ø210; DN125 ø240
K: DN100 ø170; DN125 ø200



4.2 - J-BOX DIMENSIONS



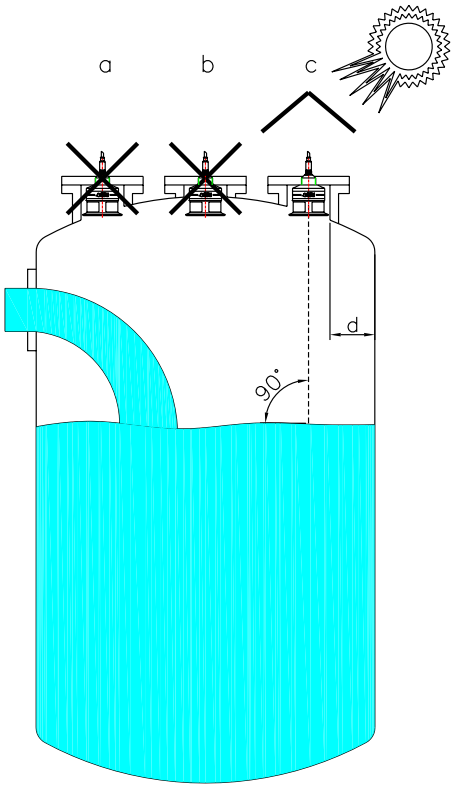


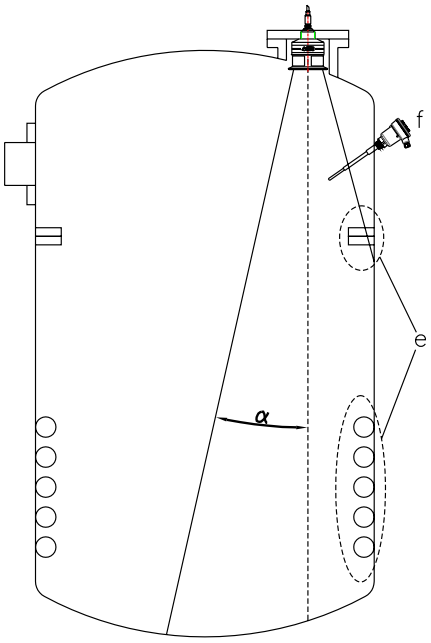
5-INSTALLATION

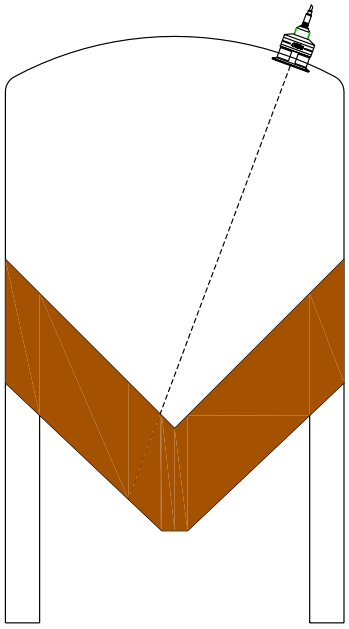
5.1 - MOUNTING PRECAUTIONS

5.1.1 - Mounting position

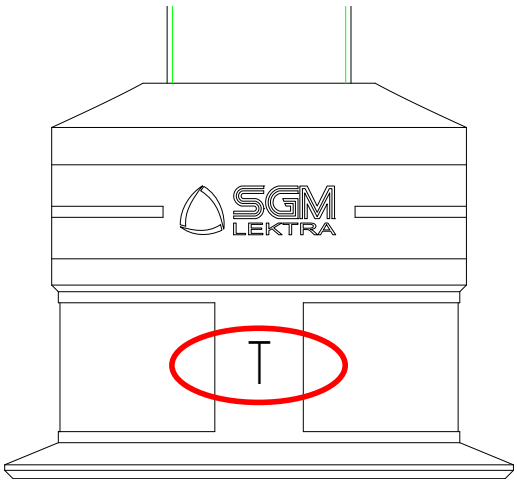
- With cambered roof, Do not install the sensor in the tank center (b). Leave a 300mm (d) minimum distance between the sensor and the tank smooth wall.
- Use a protective cover to protect the sensor from weather and direct sunlight (c).
- Do not install the sensor near the load zone (a).
- Embossed on the housing there's a"T" which indicates the inner position of the temperature sensor. It is recommended to rotate the PTU in order to position the "T" northward or in any case far from heat sources.
- Make sure that in the sensor emission beam (lobe "α") 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.





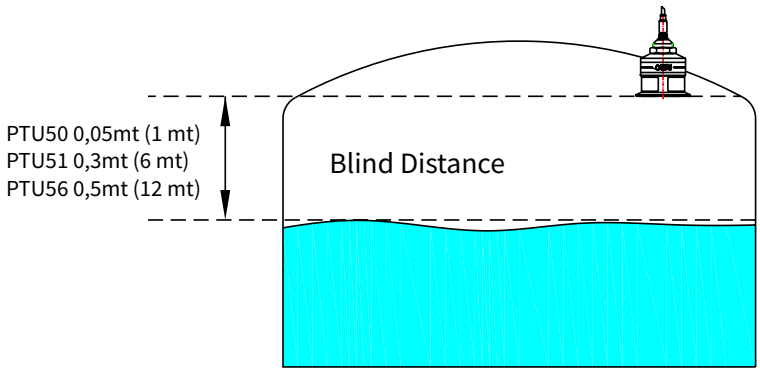


	Lobo "α"
PTU50 1 mt	5°
PTU51 6 mt	5°
PTU56 12 mt	5°



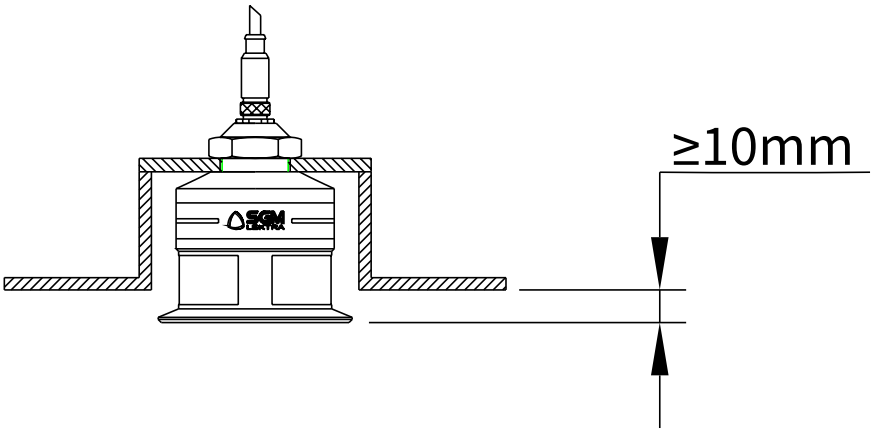
5.1.2 - Blind distance

During installation is important to remember that in the sensor vicinity there is a blind zone (or BLIND DISTANCE) of 0.05m (for 1m max PTU50 range), 0.3m (for 6m max PTU51 range) or 0.5m (for 12m max PTU56 range) where the sensor can not measure.

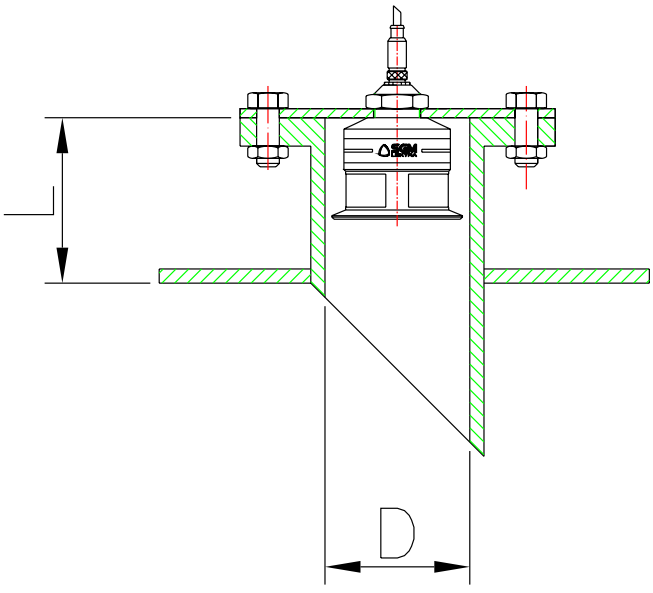


5.1.3 - Installation in nozzle

Installing the PTU50-51-56 sensor in a nozzle, make sure the sensor bottom protrudes at least 10 mm from the bottom nozzle.



PTU50-51-56 can be installed in an extension pipe 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.

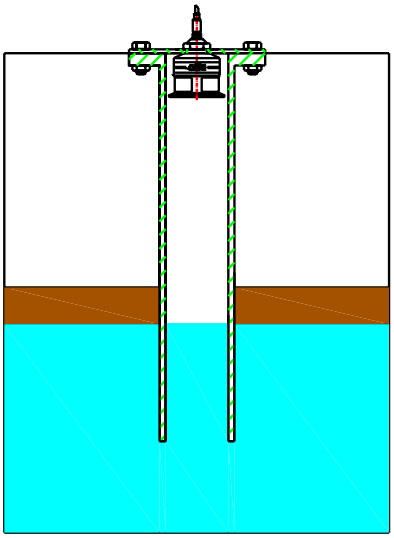


PTU50 1mt - PTU51 6mt		PTU56 12mt	
D (mm)	L max (mm)	D (mm)	L max (mm)
100	80	125	240
125	240	125	300
150	300		

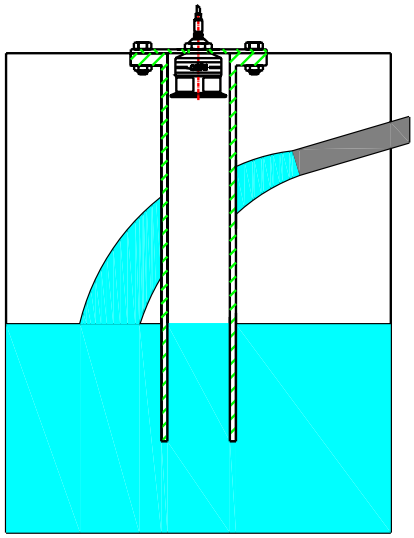
5.1.4 - Reference pipe installation

Disturbing factors that may influence the level measurement in liquids, as for example:
- foam presence on the product surface.
- internal structures presence in the tank.
- presence on the liquid surface of floating bodies can be avoided with the use of level measurement inside of pipes (by-pass pipe or calm pipe with 100mm min. diameter for PTU50-51, or 125mm min. diameter for PTU56).
  The pipe must have a length greater or equal than the empty distance, also, must have some of vent holes to allow the pipe regular filling and emptying.
  In the programming menu, to the “PRODUCT” parameter, must select the “LIQUID PIPE” option.

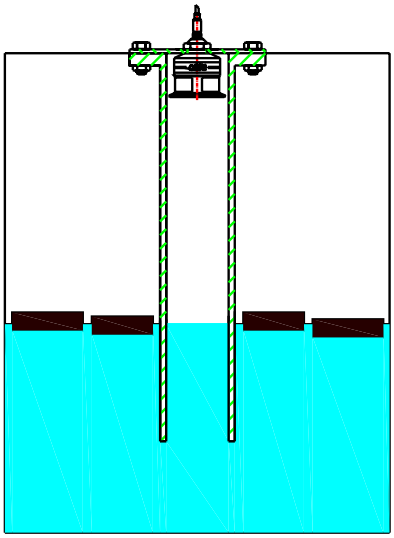
Foam

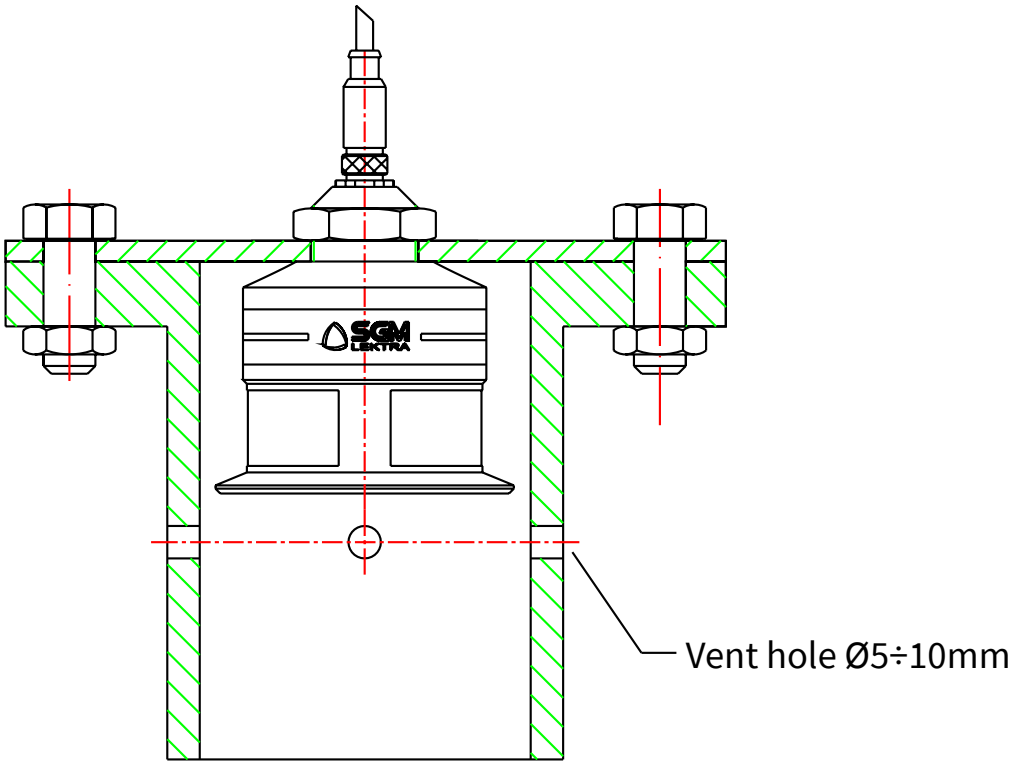


Internal structures



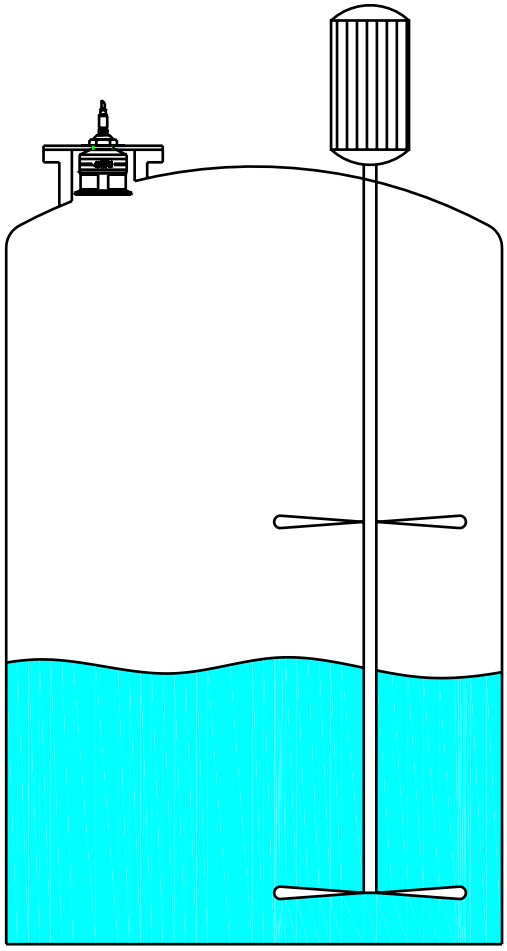
Floating bodies





5.1.5 - Agitators presence

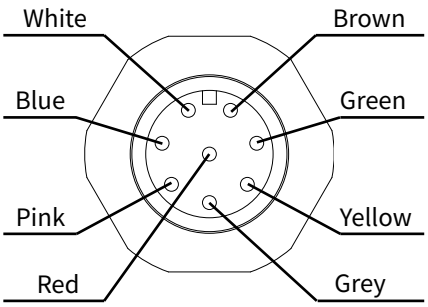
The level measurement is possible thanks to the Auto-Tuned statistical filter.
Should rarely need to adjust the filter setting by editing 2 PTU50-51-56 sensor programming parameters:
- FILTER; this parameter is present in the Quick Setup menu and in the Advanced Configuration “SETUP” menu; increasing 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; decreasing the parameter programmed value, increases the sensor immunity to false echoes.



6-ELECTRICAL CONNECTIONS

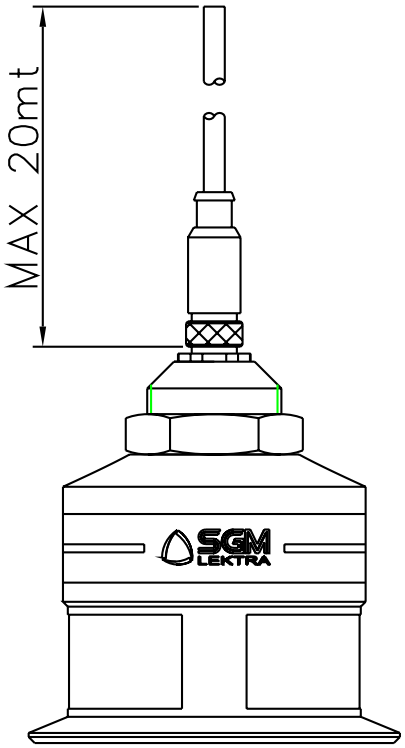
6.1 - WIRING

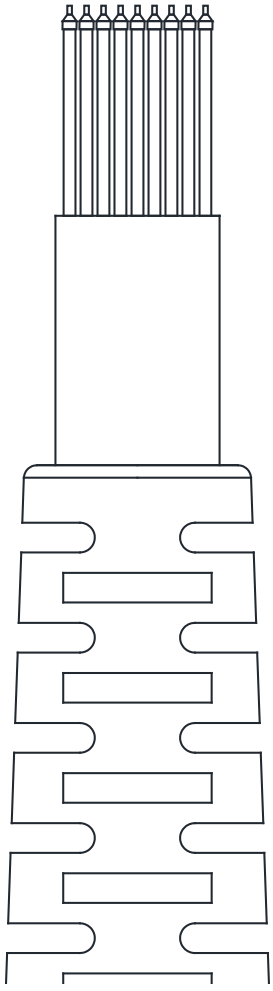
1) Separate the engine control cables or power cables from the PTU5x connection cables.
2) Isolate unused wires of the cable.
3) Fully tighten the connector ring nut.



Brown	GND (0V)
Red	+24 Vdc
White	SDA Display
Yellow	+4÷20mA

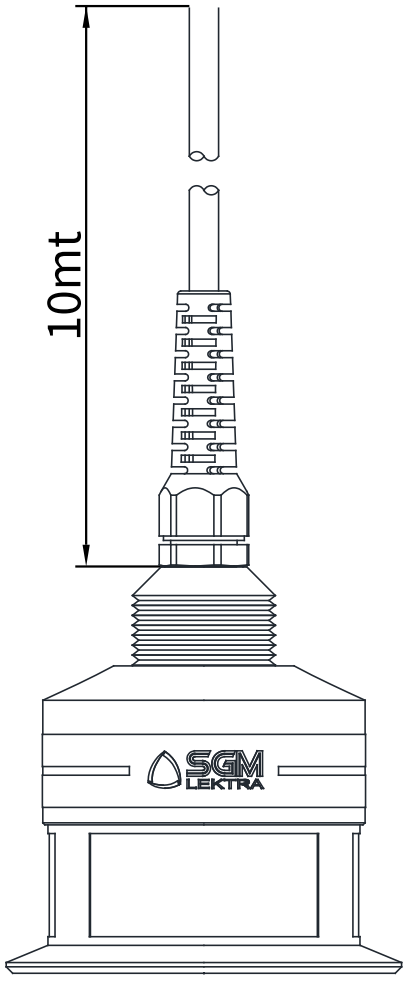
Green	A (RS485)
Blue	B (RS485)
Pink	+3.3V Display
Grey	SCL Display



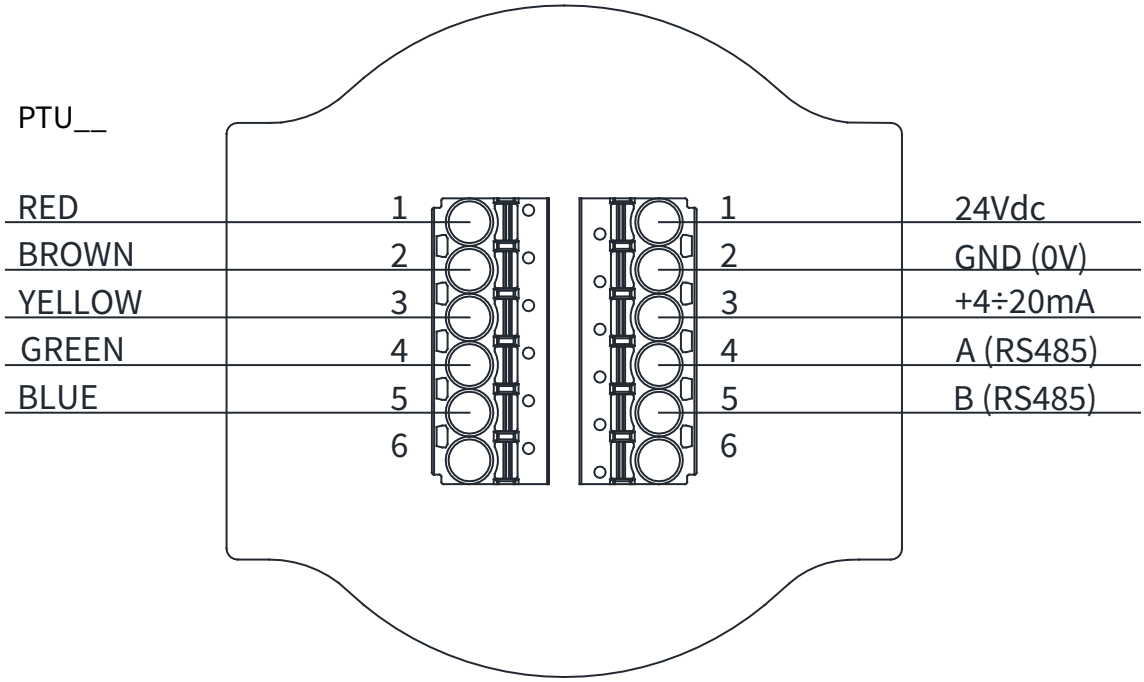


Brown	GND (0V)
Red	+24 Vdc
White	SDA Display
Yellow	+4÷20mA

Green	A (RS485)
Blue	B (RS485)
Pink	+3.3V Display
Grey	SCL Display



6.2 - CONNECTIONS JUNCTION BOX

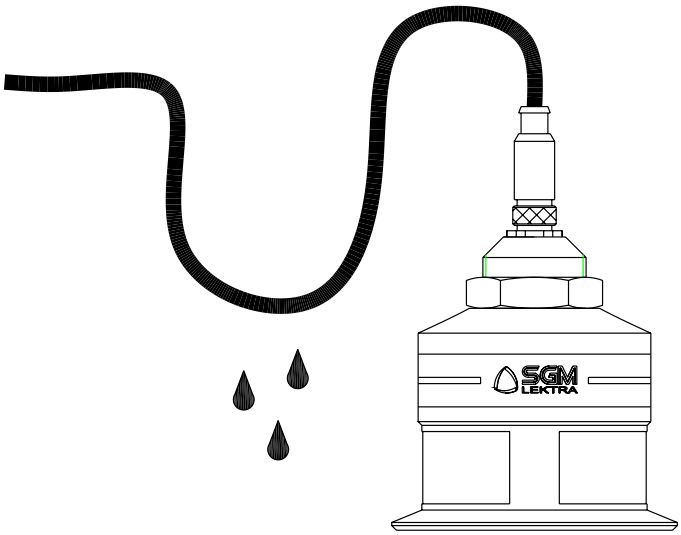


6.3 - MOISTURE INFILTRATION

To avoid moisture infiltration inside the connector it is recommended to:

- Screw the connector nut ring tightly by hand.

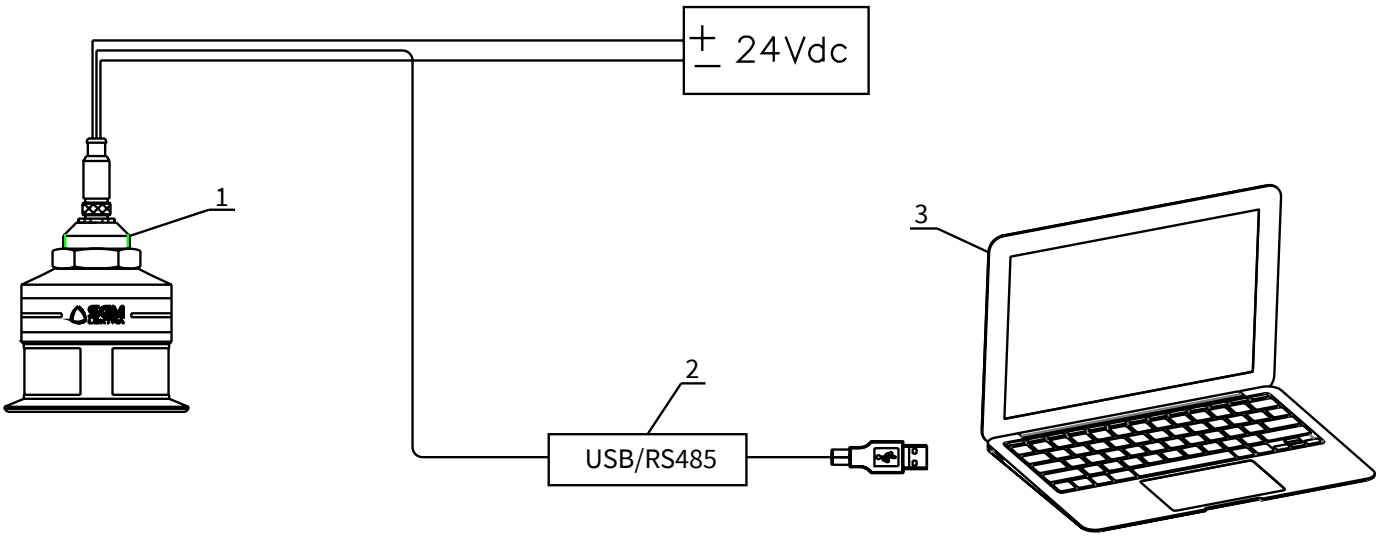
- position the cable so that it forms a downward curve; in this way the condensation and/or rain water will tend to drip from the curve bottom



6.4 - DIGITAL COMMUNICATIONS CONNECTION

6.4.1 - Via MODBUS RTU

1) PTU50, PTU51 o PTU56 with MODBUS RTU communication protocol.
2) USB/RS485 interface module, cod.694A004A.
3) MODBUS RTU communication S/W, cod.010F105A.
With this software is possible:
- connect, by selecting the UID address, the PTU50, PTU51 or PTU56 transmitters in MODBUS RTU network.
- read on your PC monitor all measures in reading and operation data.
- programming all configuration parameters.
- storing on files, data logger function; measures in reading and operating states.



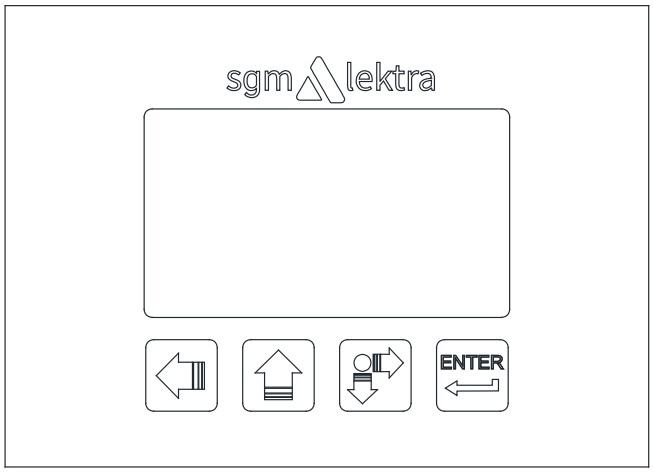
7-LOCAL OPERATOR INTERFACE (LOI) - VLW602

LOI is an operator communications center for the PTU5_.
Through the LOI, the operator can access anytransmitter function for changing configuration parameter settings or other functions.

7.1 - VLW602 FEATURES

The VLW602 program module has 4 buttons which allow to perform all operational, control and programming instrument functions.
In the configuration menus, is possible:

1. Submenus and parameters access; press to select and press to access.
2. Parameter options choice: Press to select the option and press to store the option.
   Press to exit without storing.
3. 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 high lighted digits number, press to save the set value and exit automatically.
   Press to exit without storing.



LEFT ARROW button:
- **Exit configuration**
- **Back to previous menu**
- **Echo map (from RUN mode)**

UP ARROW button:
- **Parameter values modification**
- **Parameter scroll**

SCROLL button:
- **Cursor movement (to the right)**
- **Parameter scroll**

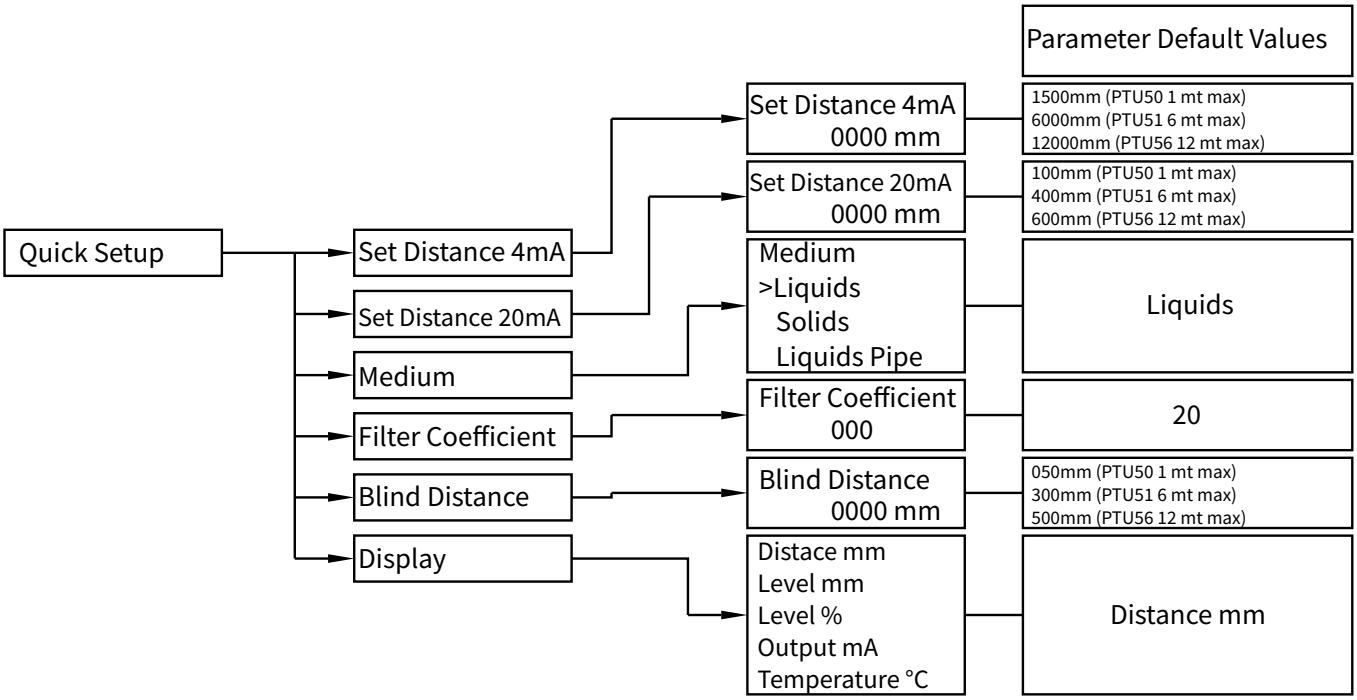
ENTER button:
- **Configuration access**
- **Options confirmation**
- **Parameters values confirmation**

Displayed at the top alert thet the PTU sensor is not communicating with VLW602.

Displayed at the top alerts that there is a generic error; press SCROLL to show the message that indicates the present error type.
The PTU5_ returns automatically to RUN mode.

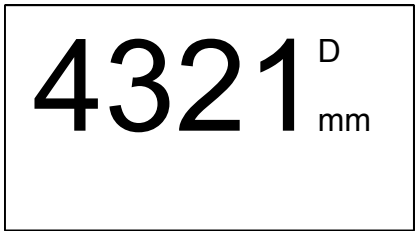
8-QUICK SETUP

8.1 - Quick Setup menu structure

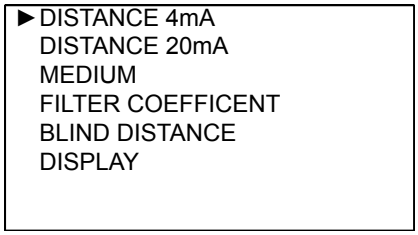


8.2 - QUICK SETUP MODE

From “RUN” mode press ENTER to access the Quick Setup menu.



Select the parameters by moving the cursor with SCROLL, and confirm with ENTER; press LEFT ARROW to exit.



8.2.1 - SET DISTANCE 4mA

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

```
►DISTANCE 4mA
 DISTANCE 20mA
 MEDIUM
 FILTER COEFFICENT
 BLIND DISTANCE
 DISPLAY
```

Use SCROLL and UP ARROW to modify that value; in the example the 4mA distance is 3500mm.
Press ENTER to confirm.

```
SET DISTANCE 4mA

3500 mm
```

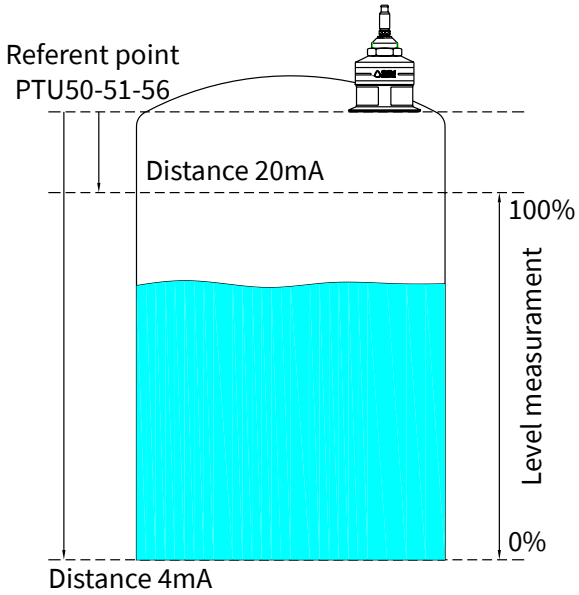
8.2.2 - SET DISTANCE 20mA

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

```
 DISTANCE 4mA
►DISTANCE 20mA
 MEDIUM
 FILTER COEFFICENT
 BLIND DISTANCE
 DISPLAY
```

Use SCROLL and UP ARROW to modify that value; in the example the 20mA distance is 500mm.
Press ENTER to confirm.

```
SET DISTANCE 20mA

0500 mm
```



8.2.3 - MEDIUM

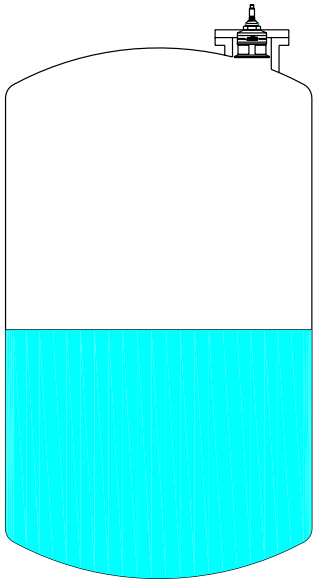
Press ENTER to display the previous setting.

```
  DISTANCE 4mA
  DISTANCE 20mA
► MEDIUM
  FILTER COEFFICENT
  BLIND DISTANCE
  DISPLAY
```

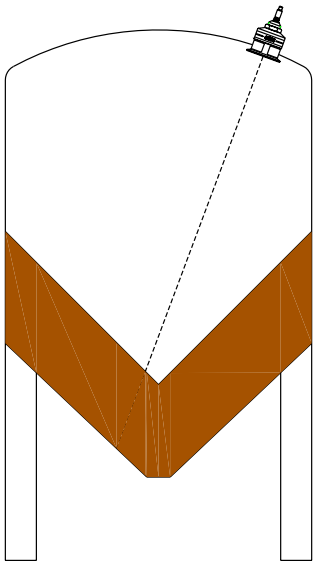
Press SCROLL to select the medium type.
Press ENTER to confirm.

```
► LIQUIDS

  SOLIDS

  LIQUIDS PIPE
```

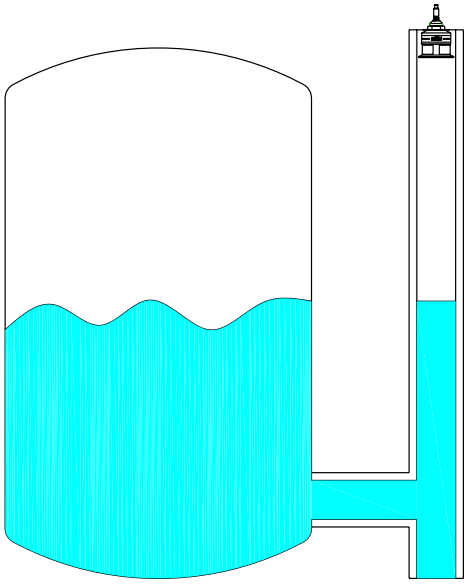
LIQUIDS



SOLIDS



LIQUIDS PIPE



8.2.4 - FILTER COEFFICIENT

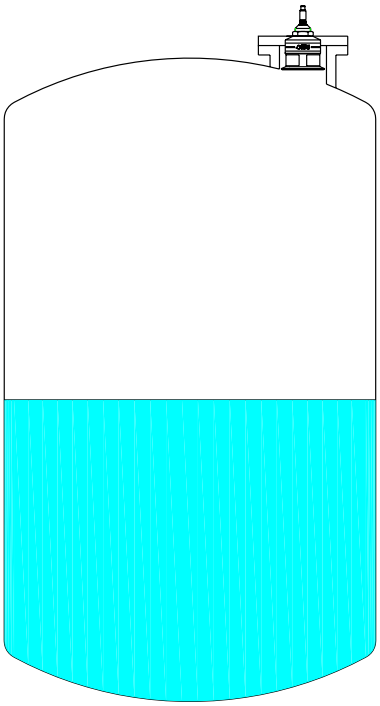
Press ENTER.
Use SCROLL and UP ARROW to modify the value. Input a value from 1 to 99.
1 maximum speed, 99 maximum slowness.
The function is deactivated with 0 (immediate response).
Press ENTER to confirm.

DISTANCE 4mA
DISTANCE 20mA
MEDIUM
► FILTER COEFFICENT
BLIND DISTANCE
DISPLAY

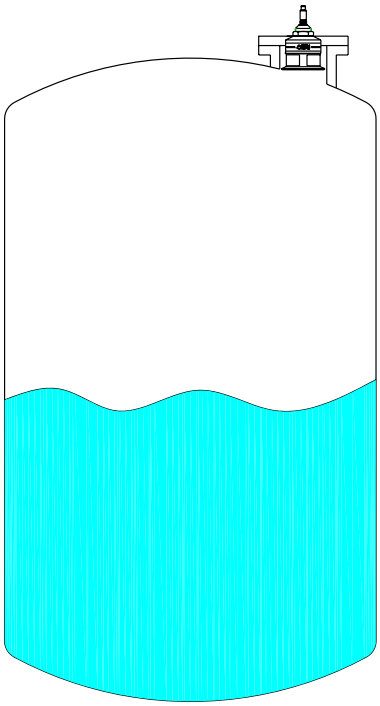
FILTER COEFFICENT

20

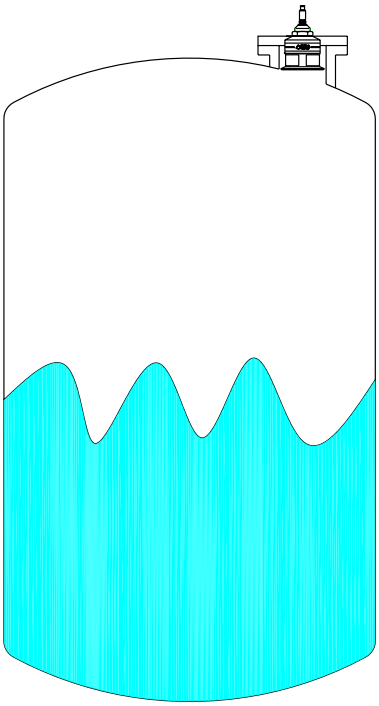
Fast resp. 5÷10



Normal resp. 20



Slow resp. 40÷100



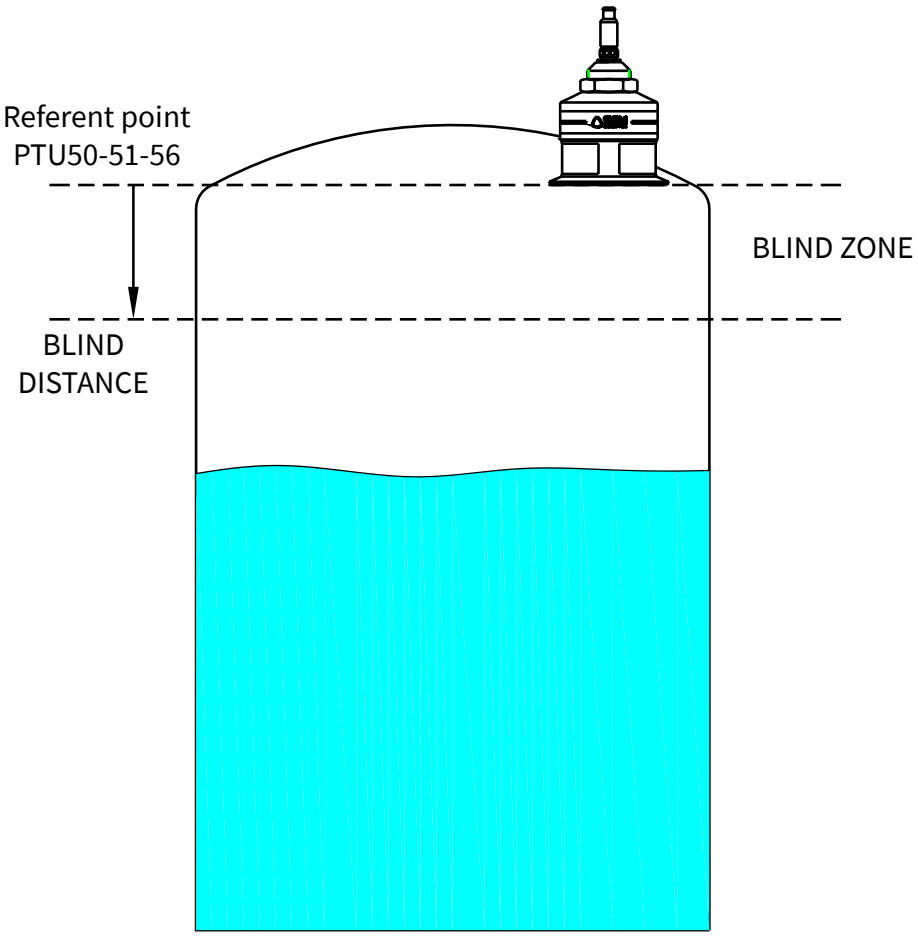
8.2.5 - BLIND DISTANCE

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

```
  DISTANCE 4mA
  DISTANCE 20mA
  MEDIUM
  FILTER COEFFICENT
▶ BLIND DISTANCE
  DISPLAY
```

Use SCROLL and UP ARROW to modify the value.
Press ENTER to confirm.
The minimum value is 50mm (PTU50), or 300mm (PTU51) or 500mm (PTU56).

```
BLIND DISTANCE

0250 mm
```



8.2.6 - DISPLAY

Press ENTER to access the settings change.

```
  DISTANCE 4mA
  DISTANCE 20mA
  MEDIUM
  FILTER COEFFICENT
  BLIND DISTANCE
▶ DISPLAY
```

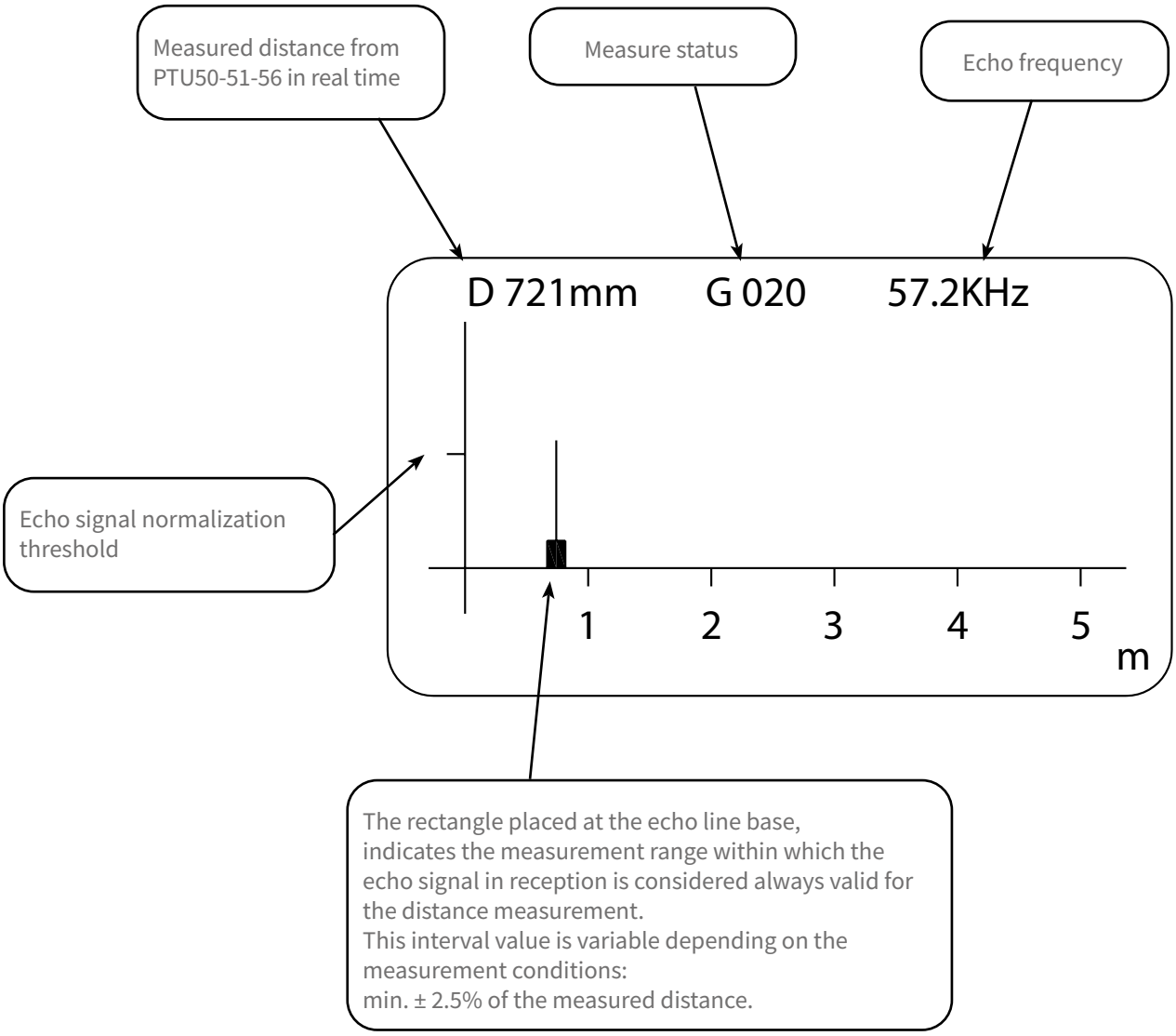
With the SCROLL button is possible to select the data to display.
Press ENTER to confirm.

```
▶ DISTANCE mm
  LEVEL mm
  LEVEL %
  OUTPUT mA
  TEMPERATURE °C
```

8.3 - ECHO MAP

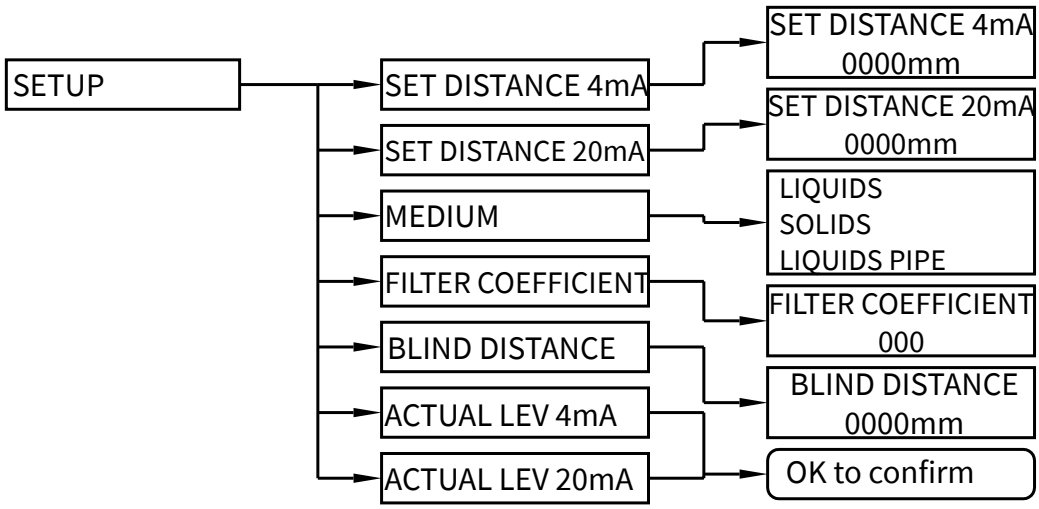
Pressing LEFT ARROW, from RUN mode, to access directly to the echoes digital map display, which are in PTU50-51-56 receiving.
This function is useful for:

- properly orient the transducer pointing.
- verify the echoes in acquisition correctness.
- identify any false echo signals that may cause measurement errors.

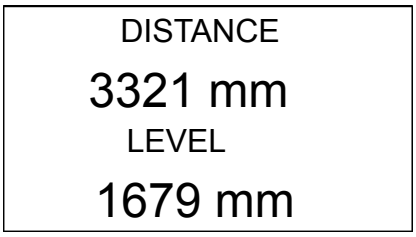


9-ADVANCED CONFIGURATION

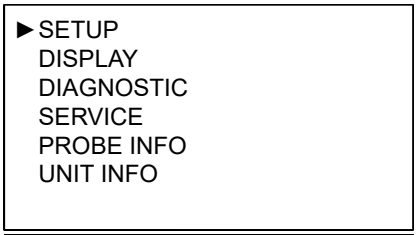
9.1 - "SETUP" MENU



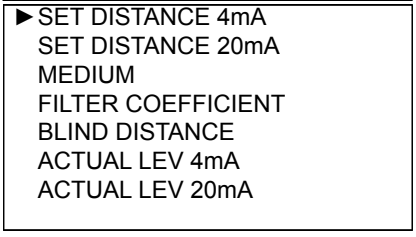
9.2 - SETUP



From "RUN" mode, holding down UP ARROW, press ENTER to the advanced configuration mode access.

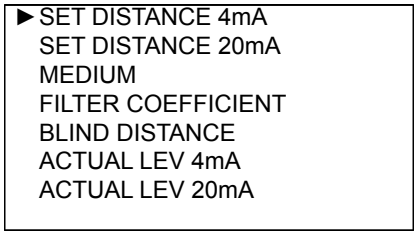


Press SCROLL to select the menu and press ENTER to access.
Press LEFT ARROW to exit.



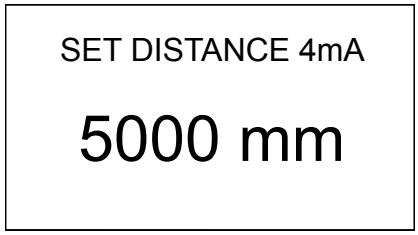
9.2.1 - SET DISTANCE 4mA

Position the cursor on DISTANCE 4mA, press ENTER to access.



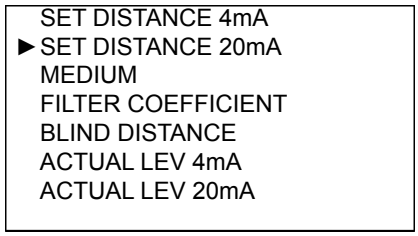
Use UP ARROW and SCROLL to modify the value.
Press ENTER to confirm.
LEFT ARROW to exit without changes.

Default value: 1000mm (PTU50 range 1mt), 6000mm (PTU51 range 6mt.) or 12000mm (PTU56 range 12mt)



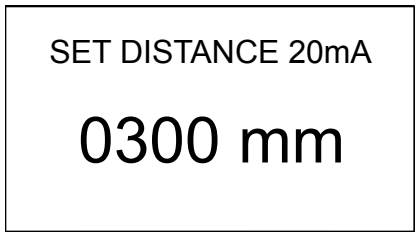
9.2.2 - SET DISTANCE 20mA

Position the cursor on DISTANCE 20mA, press ENTER to access.



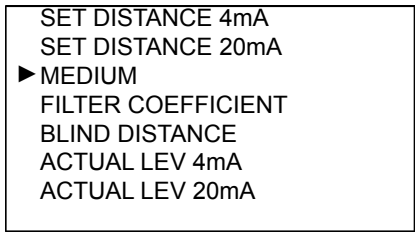
Use UP ARROW and SCROLL to modify the value.
Press ENTER to confirm.
LEFT ARROW to exit without changes.

Default value: 100mm (PTU50 range 1mt), 400mm (PTU51 range 6mt.) or 600mm (PTU56 range 12mt)



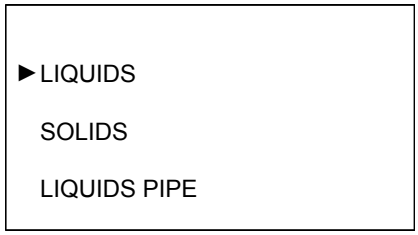
9.2.3 - MEDIUM

Position the cursor on MEDIUM, press ENTER to access.



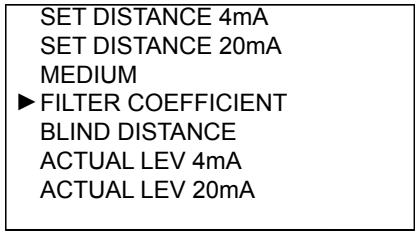
3 configurations are possible:
LIQUIDS - liquids measurement.
SOLIDS - granular solids measurement.
LIQUIDS PIPE - liquids measurement in pipe reference.
Press SCROLL to select the product type.
Press ENTER to confirm.
LEFT ARROW to exit without changes.

Default value: LIQUIDS



9.2.4 - FILTER COEFFICIENT

Position the cursor on FILTER COEFFICIENT, press ENTER to access.

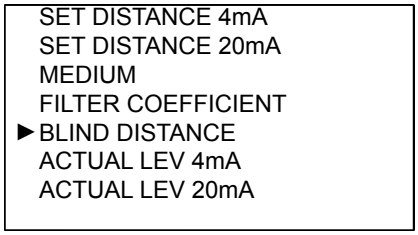


Enter a value from 1 to 99: 1 maximum speed, 99 maximum slowness.
The function is deactivated with 0 (immediate response).
Use UP ARROW and SCROLL to modify the value.
Press ENTER to confirm.
LEFT ARROW to exit without changes.

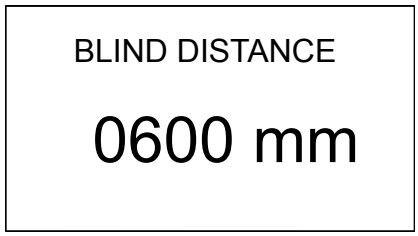
Default value: 10

9.2.5 - BLIND DISTANCE

Position the cursor on DISTANCE 4mA, press ENTER to access.
Represent the “BLIND ZONE”.



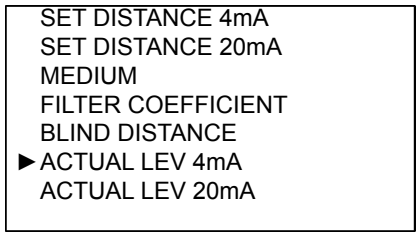
Input the desired value in order to avoid measures near the surface of the sensor (if necessary).
The minimum value is 250mm (6m vers.) or 400mm (10m vers.).
Use UP ARROW and SCROLL to modify the value.
Press ENTER to confirm.
LEFT ARROW to exit without changes.



Default values: 50mm (PTU50), 300mm (PTU51) or 500mm (PTU56)

9.2.6 - ACTUAL LEV. 4mA

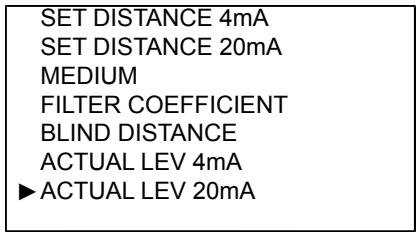
Position the cursor on ACTUAL LEV. 4mA, press ENTER to access.



Self distance learning function that is associated with the 4mA (lower value).
Make sure that the level corresponds to 0%,
ENTER to associate the actual measure with 4mA output value;
OK TO CONFIRM.
LEFT ARROW to exit without changes.

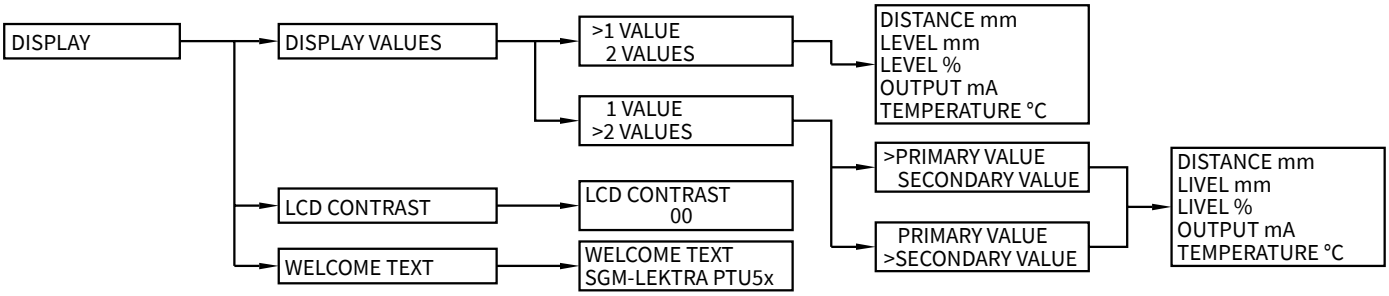
9.2.7 - ACTUAL LEV. 20mA

Position the cursor on ACTUAL LEV. 20mA, press ENTER to access.



Self distance learning function that is associated with the 20mA (upper value).
Make sure that the level corresponds to 100%,
ENTER to associate the actual measure with 20mA output value;
OK TO CONFIRM.
LEFT ARROW to exit without changes.

9.3 - “DISPLAY” menu



9.4 - DISPLAY

From “RUN” mode, holding down UP ARROW, press ENTER to access.
Position the cursor on DISPLAY and press ENTER.

```
  SETUP
  DISPLAY
▶ DIAGNOSTIC
  SERVICE
  PROBE INFO
  UNIT INFO
```

Select the parameters by moving the cursor with SCROLL and confirm with ENTER.

```
▶ DISPLAY VALUES
  LCD CONTRAST
  WELCOME TEXT
```

9.4.1 - DISPLAY VALUES

Position the cursor on DISPLAY VALUES, press ENTER to access.

```
▶ DISPLAY VALUES
  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.
Select the parameters by moving the cursor with SCROLL and confirm with ENTER.
LEFT ARROW to exit without changes.

```
▶ 1 VALUE
  2 VALUES
```

9.4.1.1 - 1 VALUE

Position the cursor on 1 VALUE, press ENTER to access.

```
▶ 1 VALUE
  2 VALUES
```

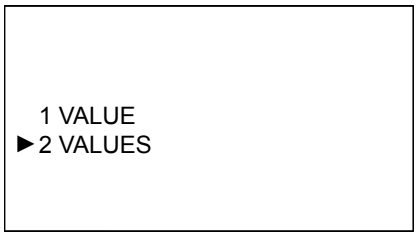
Only one value is displayed; it’s possible to choose from 5 parameters.
With the SCROLL button you can select data to display.
Press ENTER to confirm.
LEFT ARROW to exit without changes.

```
▶ DISTANCE mm
  LEVEL mm
  LEVEL %
  OUTPUT mA
```

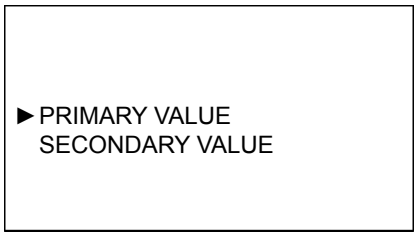
```
2013 D
     mm
```

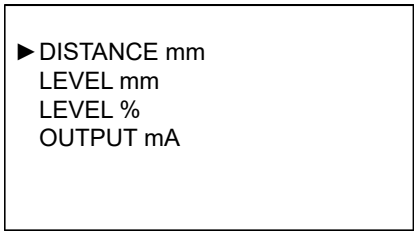
9.4.1.2 - 2 VALUE

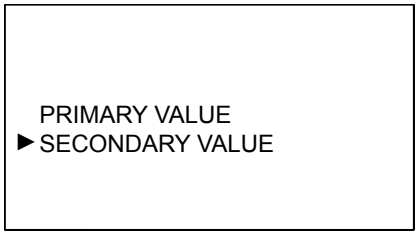
Position the cursor on 2 VALUE, press ENTER to access.

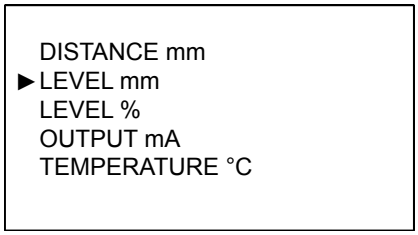


Two values are displayed; it's possible to choose which one is the primary and which is the secondary, each with a choice of 5 parameters.
With the SCROLL button you can select data to display.
Press ENTER to confirm.
LEFT ARROW to exit without changes.



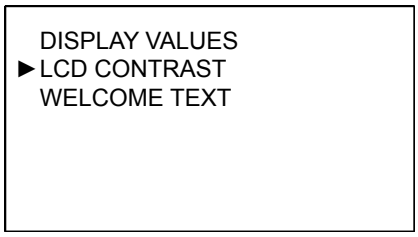






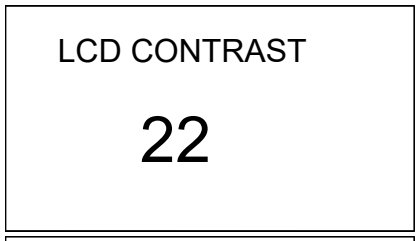
9.4.2 - LCD CONTRAST

Position the cursor on LCD CONTRAST, press ENTER to access.



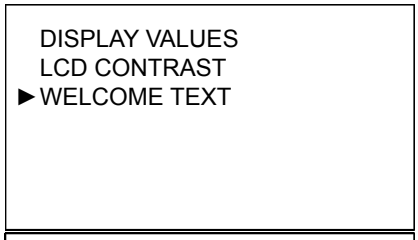
it's possible to adjust the contrast of LCD, simply increasing or decreasing the value of a parameter from 0 to 63.
Use UP ARROW and SCROLL to modify the value.
Press ENTER to confirm.
LEFT ARROW to exit without changes.

Default value: 32



9.4.3 - WELCOME TEXT

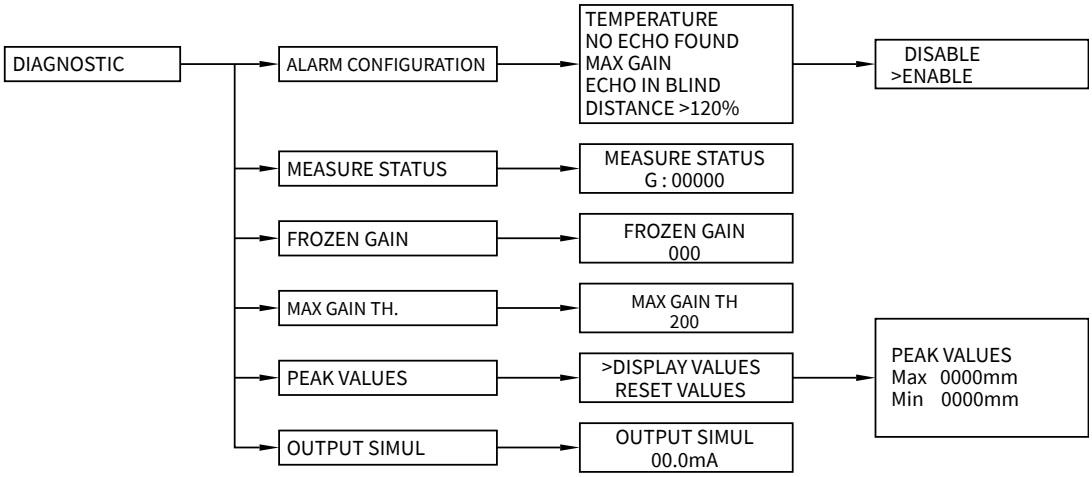
Position the cursor on WELCOME TEXT, press ENTER to access.



It's possible to edit or delete the message that is displayed by the PTU5_ during the ignition phase.
Use UP ARROW (up scroll) and SCROLL (down scroll) to change the digit; ENTER to move the digit to the right.
To confirm press ENTER repeatedly until leave the parameter.
LEFT ARROW to exit without changes.

Default value: SGM-LEKTRA PTU50-51-56

9.5 - "DIAGNOSTIC" menu



9.6 - DIAGNOSTIC

From "RUN" mode, holding down UP ARROW, press ENTER to access.
Position the cursor on DIAGNOSTIC and press ENTER.

```
  SETUP
  DISPLAY
► DIAGNOSTIC
  SERVICE
  PROBE INFO
  UNIT INFO
```

Select the parameters by moving the cursor with SCROLL and confirm with ENTER.

```
► ALARM CONFIGURATION
  MEASURE STATUS
  FROZEN GAIN
  MAX GAIN TH.
  PEAK VALUES
  OUTPUT SIMUL.
```

9.6.1 - ALARM CONFIGURATION

```
► ALARM CONFIGURATION
  MEASURE STATUS
  FROZEN GAIN
  MAX GAIN TH.
  PEAK VALUES
  OUTPUT SIMUL.
```

Position the cursor on ALARM CONFIGURATION, press ENTER to access.

To enable or disable each diagnostic alarms.

- with UP ARROW or SCROLL chose the desired item and press ENTER.

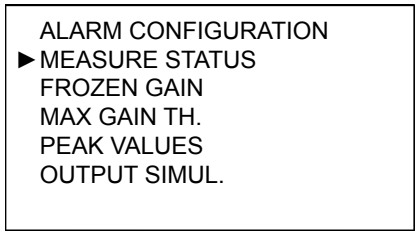
```
► TEMPERATURE
  NO ECHO FOUND
  MAX GAIN
  ECHO IN BLIND
  DISTANCE  >120%
```

- with UP ARROW or SCROLL enable or disable the alarm signal and press ENTER to confirm.

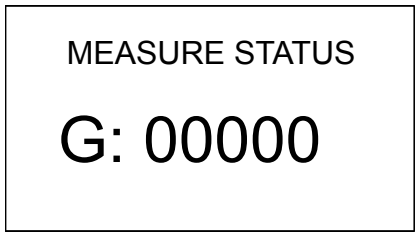
```
  DISABLE
► ENABLE
```

9.6.2 - MEASURE STATUS

Position the cursor on MEASURE STATUS, press ENTER to access.

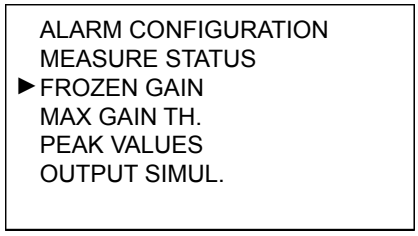


It's possible to display the gain of the system, with values from 0 to 255.
LEFT ARROW to exit



9.6.3 - FROZEN GAIN

Position the cursor on MEASURE STATUS, press ENTER to access.

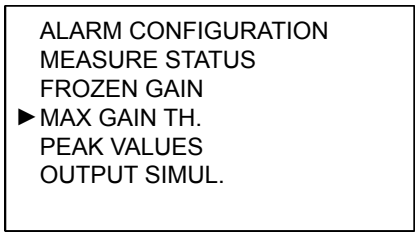


It's possible to fix a value of gain (from 1 to 255) and consequently disable the automatic gain control. Once the value is 000 the automatic gain control restarts.
Use UP ARROW and SCROLL to modify the value.
Press ENTER to confirm.
LEFT ARROW to exit without changes.

Default value: 000

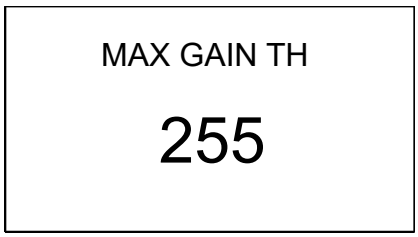
9.6.4 - MAX GAIN TH

Position the cursor on MAX GAIN TH, press ENTER to access.



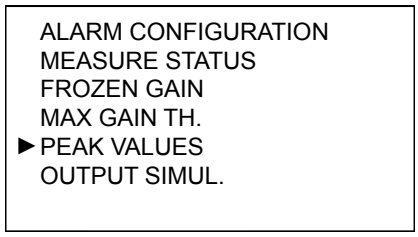
It's possible to change the max value of gain. If the gain reaches this value, the "GAIN" error code is activated.
Use UP ARROW and SCROLL to modify the value.
Press ENTER to confirm.
LEFT ARROW to exit without changes.

Default value: 255

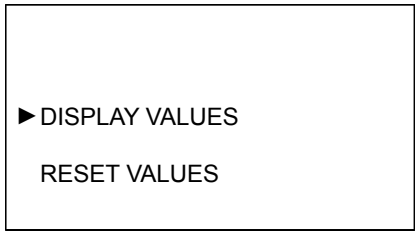


9.6.5 - PEAK VALUES

Position the cursor on PEAK VALUES, press ENTER to access.

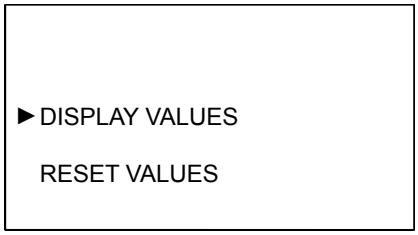


The system store the maximum distance and the minimum distance measured since the power is turned ON.
It's possible to see those values or reset the values.
With the SCROLL button you can select the function.
Press ENTER to confirm.

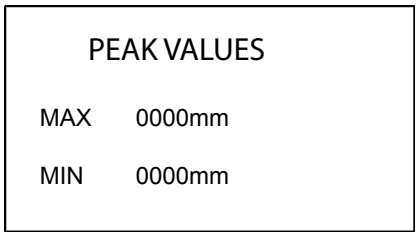


9.6.5.1 - DISPLAY VALUES

Position the cursor on DISPLAY VALUES, press ENTER to access.



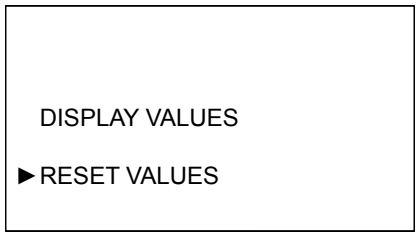
Displays the max. and min. distance measured from power on.
LEFT ARROW to exit.
NB - The peak values stored are erased every time the PTU50-51-56 turns-off.



9.6.5.2 - RESET VALUES

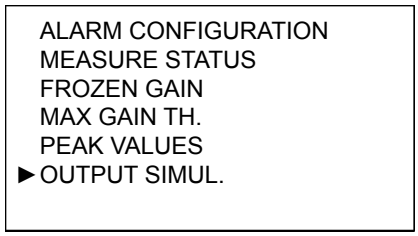
Position the cursor on RESET VALUES, press ENTER to access.

LEFT ARROW to return to the previous menu.

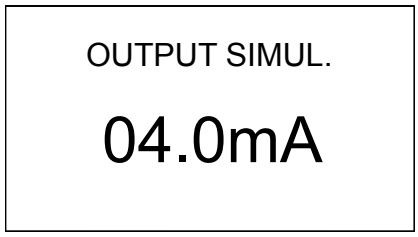


9.6.6 - OUTPUT SIMULATION

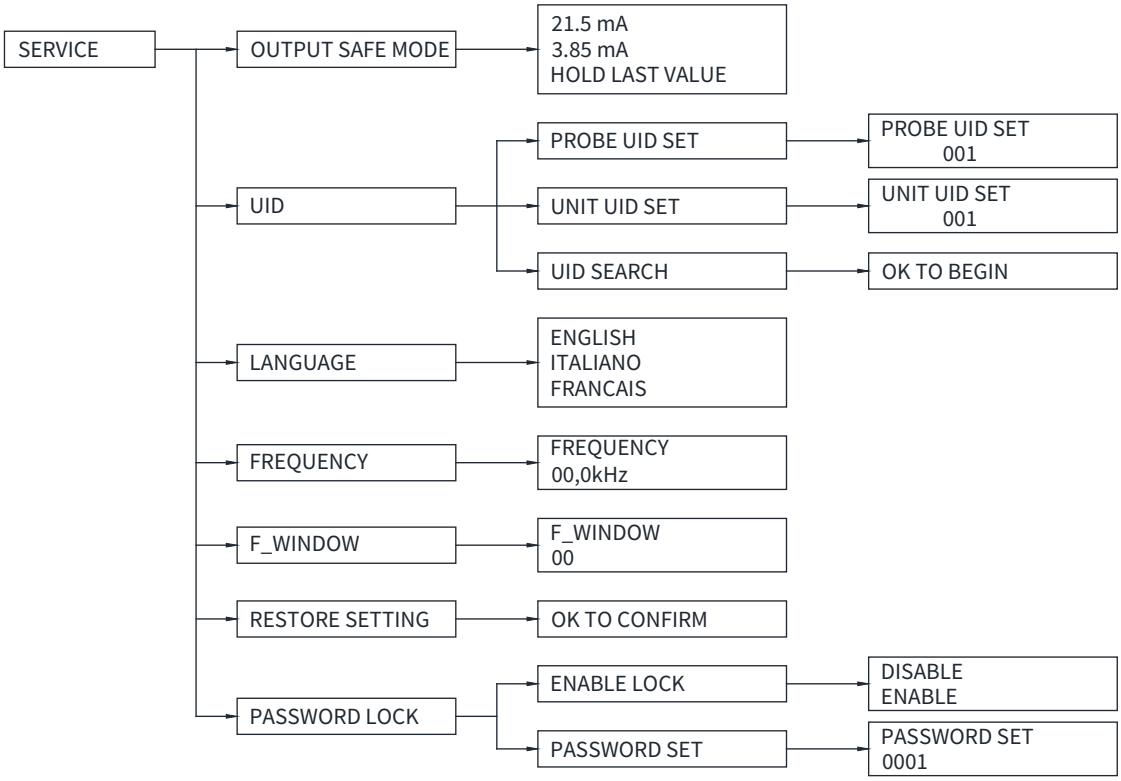
WARNING - entering in the SIMULATION function, the current output is not in function of the level measurement.
To restore the current as a measured level function, press the LEFT ARROW button 3 times (RUN mode).



Position the cursor on OUTPUT SIMULATION, press ENTER to access.
It's possible to force the analog output to a desired value, from 3,5 to 21mA.
Use UP ARROW and SCROLL to modify the value.
Press ENTER to start the simulation.
The simulation will remain active for 5 minutes, by pressing the LEFT ARROW it's possible to stop the simulation before 5 minute.
LEFT ARROW to return to the previous menu.



9.7 - "SERVICE" menu



9.8 - SERVICE

From "RUN" mode, holding down UP ARROW, press ENTER to access.
Position the cursor on SERVICE and press ENTER.

```
  SETUP
  DISPLAY
  DIAGNOSTIC
► SERVICE
  PROBE INFO
  UNIT INFO
```

Select the parameters by moving the cursor with SCROLL and confirm with ENTER.

```
► OUTPUT SAFE MODE
  UID
  LANGUAGE
  FREQUENCY
  F_WINDOW
  RESTORE SETTING
  PASSWORD LOCK
```

9.8.1 - OUTPUT SAFE MODE

Position the cursor on OUTPUT SAFE MODE, press ENTER to access.

```
► OUTPUT SAFE MODE
  UID
  LANGUAGE
  FREQUENCY
  F_WINDOW
  RESTORE SETTING
  PASSWORD LOCK
```

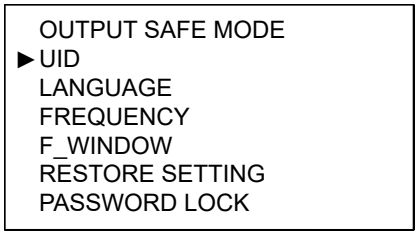
It's possible to choose a analog output value during diagnostic errors.
"21.5 mA" forces the current output to 21,5mA
"3.85 mA" forces the current output to 3,85mA
"HOLD LAST VALUE" maintains the output at the last valid value.
With the SCROLL button you can select the operation mode.
Press ENTER to confirm.
LEFT ARROW to exit without changes.

Default value: HOLD LAST VALUE

```
► 21.5 mA

  3.85 mA

  HOLD LAST VALUE
```

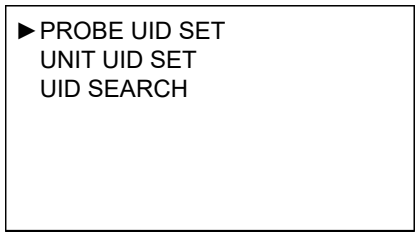
9.8.2 -UID

Place the cursor on UID and press ENTER to enter.
In this submenu you can manage the UID address of the PTU probe and of the VLW602

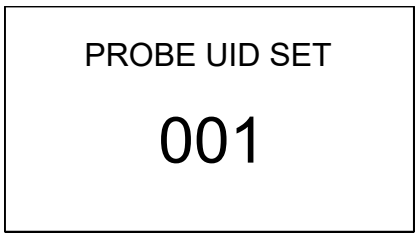


9.8.2.1 -PROBE UID SET

Position the cursor on PROBE UID SET and press ENTER to enter.
In this parameter it is possible to assign the UID address of the probe for data communication in a MODBUS RTU network.
After confirming the change, VLW602 will automatically change the setting of the UNIT UID SET parameter in order not to interrupt communication with the PTU probe.

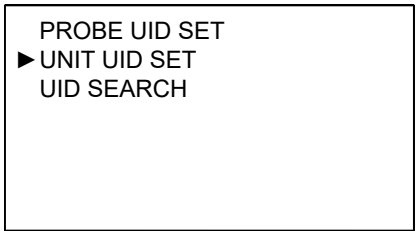


Use the UP ARROW and SCROLL to change the value.
To confirm press ENTER.
LEFT ARROW to exit without changes.
Default value: 001

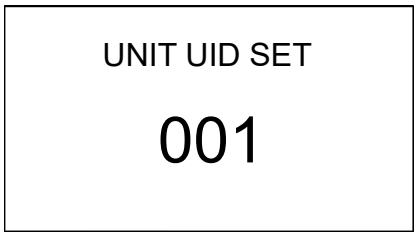


9.8.2.2 - UNIT UID SET

Place the cursor on SET UNIT UID and press ENTER to enter.
In this parameter it is possible to assign the UID address of VLW602 for MODBUS RTU communication with the PTU probe having the same UID address.

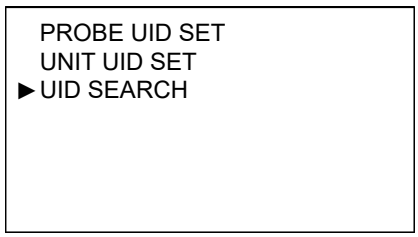


Use the UP ARROW and SCROLL to change the value.
To confirm press ENTER.
LEFT ARROW to exit without changes.
Default value: 001

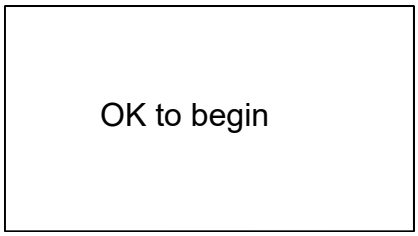


9.8.2.3 - UID SEARCH

Place the cursor on UID SEARCH and press ENTER to enter.
This parameter automatically scans the UID address previously set in the UID probe connected to the VLW602.



To start the search, press ENTER.
LEFT ARROW to exit.

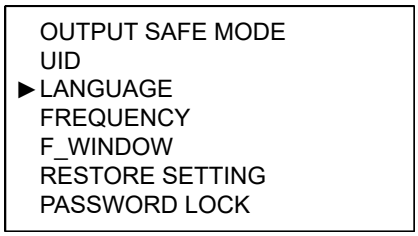


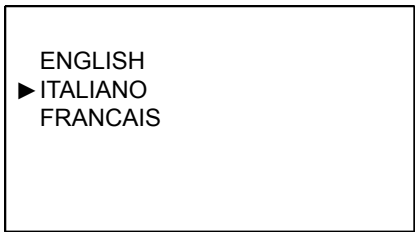
9.8.3 - LANGUAGE

Position the cursor on LANGUAGE, press ENTER to access.

Sets the menu language: English, Italian, French.

Press SCROLL to select the menu language.
Press ENTER to confirm.
LEFT ARROW to exit without changes.



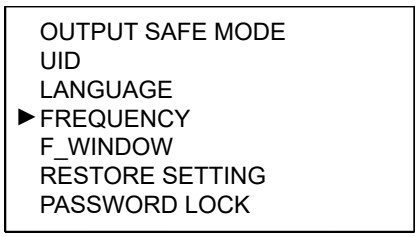


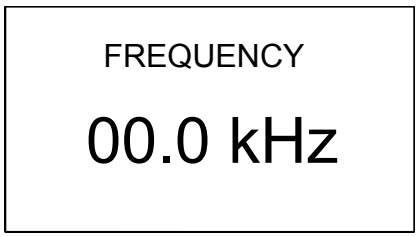
9.8.4 - FREQUENCY

Position the cursor on FREQUENCY, press ENTER to access.

It's possible to check the computed sensor emission frequency.

LEFT ARROW to exit.





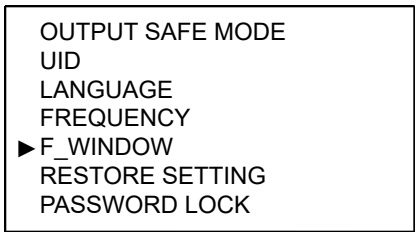
9.8.5 - F_ WINDOW

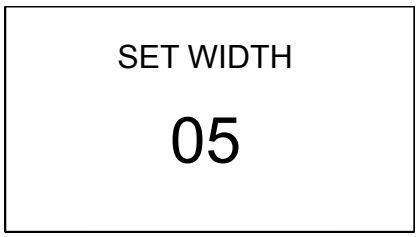
Position the cursor on F_WINDOW, press ENTER to access.

It is the increase value (in cm), step to step, of the window width during the echo signal research phase.
The "F_WINDOW" is the area where the echo reception is active.
Normally it is positioned around the real echo signal and all echoes detected within the F_WINDOW are deemed valid.
Example: F_WINDOW parameter set to 5.
- The PTU5_ detects an echo signal which is 4 meters from the sensor.
- Suddenly, the echo signal disappears and a new echo signal to 3.5 mt away from the sensor is detected.
- Each time the echo signal will be emitted, the PTU5_ will enlarge "F_WINDOW" with 5cm step, until covering the new eco detected area. Now the F_WINDOW will start to tighten around the new echo signal and the new measurement of 3,5mt distance will be used to calculate the level measurement, alarm thresholds, etc..

F_WINDOW serves to filter false echo signals products, for example, by the agitator blades.
Range: 05÷20
Use UP ARROW and SCROLL to modify the value.
Press ENTER to confirm.
LEFT ARROW to exit without changes.

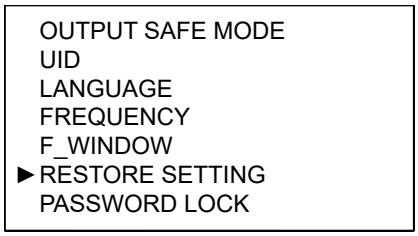
Default value: 05



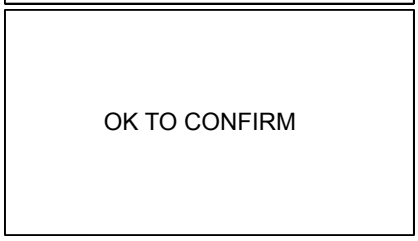


9.8.6 - RESTORE SETTING

Position the cursor on SET UID, press ENTER to access.

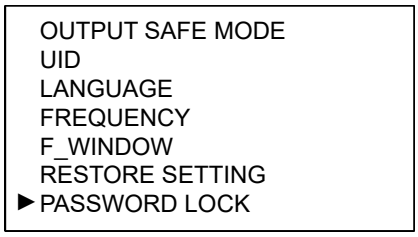


Press ENTER to restore the PTU50-51-56 default settings.
LEFT ARROW to exit without restored the PTU50-51-56 default settings.



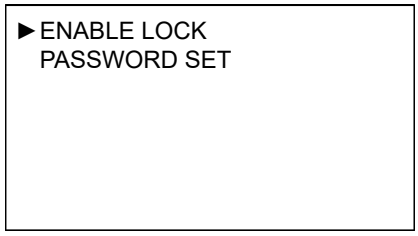
9.8.7 - PASSWORD LOCK

Place the cursor on PASSWORD LOCK and press ENTER to enter.
In this submenu it is possible to enable and set the password to protect the VLW602 programming menus.

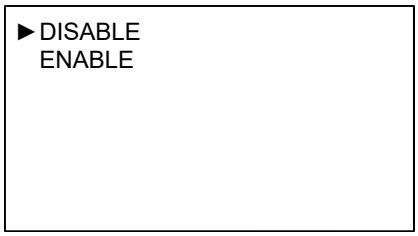


9.8.7.1 - ENABLE LOCK

Position the cursor on ENABLE LOCK and press ENTER to enter.
In this parameter it is possible to disable or enable the password protection to block access to the programming menus of the VLW602.

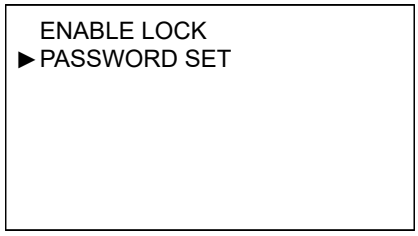


Use the UP ARROW and SCROLL to select the setting.
To confirm press ENTER.
LEFT ARROW to exit without changes.
Default value: DISABLE



9.8.7.2 - PASSWORD SET

Place the cursor on SET PASSWORD and press ENTER to enter.
In this parameter, you can set the protection password to block access to the VLW602 programming menus.

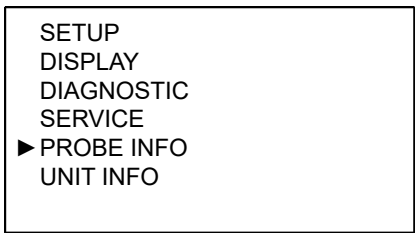


Use the UP ARROW and SCROLL to change the value.
To confirm press ENTER.
LEFT ARROW to exit without changes.
Default value: 0000

9.9 - PROBE INFO

Position the cursor on INFO, press ENTER to access.

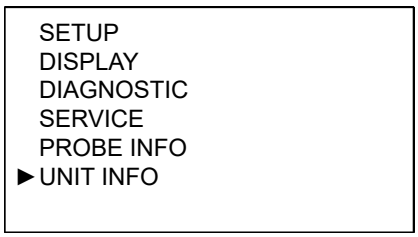
In addition to information about the manufacturer, are displayed the firmware revision and the configuration index.



9.10 - UNIT INFO

Position the cursor on INFO, press ENTER to access.

Firmware revision and the configuration index are displayed.



10-FACTORY TEST AND QUALITY CERTIFICATE

CE

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

(Ultrasonic sensor)

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

Quality Control Manager: ..... Production and check date: .....

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