OPERATING INSTRUCTIONS

TRACER 1000 3G™ LTT1-3G
GWR LEVEL TRANSMITTER

Introduction

Please read carefully! No liability can be accepted for damage caused by improper use or installation of the Tracer 3000 Level Transmitter.
The Tracer 1000™ 3G Guided Wave Radar Level Transmitter is ideal for level measurement of liquids, solids, bulk materials, sludge, powders and granules to a distance of 60ft 8 in. Guided-wave technology sends the radar pulse down a probe to measure either liquids or solids. The pulse hits the surface and is reflected back up the probe to the sensor, where the transit time is translated into a distance using time of fight and time expansion. The amplitude of the reflection depends on the dielectric constant of the product. This technology is not affected by pressure, temperature, viscosity, vacuum, foam, dust, changes in dielectric constant or coating of the probe.

⚠ Safety Precautions

If you are unsure of the suitability of a Tracer 1000™ for your installation, please consult your FLO-CORP representative for further information.

NOTE: REMOVE ALL PACKING INSERTS BEFORE OPERATING LEVEL TRANSMITTER.

Authorized Personnel

All operations described in this operating instructions manual must be carried out only by trained specialist personnel authorized by the plant operator. During work on and with the device the required personal protection equipment must always be worn.

Warning about misuse

Inappropriate or incorrect use of the instrument can give rise to application-specific hazards, e.g. vessel over fill or damage to system components through incorrect mounting or adjustment.

General Safety Instructions

The user must take note of the safety instructions in this operating instructions manual , the country specific installation standards as well as all prevailing safety regulations and accident prevention rules. The instrument must only be operated in a technically flawless and reliable condition. The operator is responsible for trouble-free operation of the instrument. During the entire duration of use, the user is obliged to determine the compliance of the required occupational safety measures with the current valid rules and regulations and also take note of new regulations.

Disclaimer

The information contained in this document is subject to change without notice. FLO-CORP makes no representations or warranties with respect to the contents hereof and specifically disclaims any implied warranties of merchantability or fitness for a particular purpose.

FEATURES & BENEFITS

- IECEx Ex ia/d [ia Ga] IIC T6 Ga/Gb Tamb 60°C
- IECEx Ex ia tb [ia Da] IIIC T85C Da Db Tamb 60°C
- Up to 60ft 8in (18.5m) range
- Very short minimum range (6", 150mm)
- Simple Setup
- Auto-calibration to any dielectric ≥ 1.5
- Adjustable Sensitivity
- Precise & continuous measurement
- 2-Wire Loop
- 4-20mA, HART Universal / Common practice commands
- Protection class IP66, NEMA 4X
- Measures extremely low dielectric (1.5)
- Programmable fail safe mode

PRIMARY AREAS OF APPLICATION

- Chemical / Petrochemicals
- Energy
- Food & Beverages
- Plastic Pellets
- Minerals & Mining
- Oil & Gas
- Pharmaceutical
- Pulp & Paper
- Wastewater

TECHNOLOGY

The Tracer 1000™ 3G uses TDR Technology: low-energy, high-frequency electromagnetic impulses, generated by the sensor's circuitry, are propagated along the probe which is submerged in the liquid or solid to be measured. When these impulses hit the surface of the media, part of the impulse energy is reflected back up the probe to the circuitry which then calculates the level from the time difference between the impulses sent and the impulses reflected. The sensor can output the analyzed level as a continuous measurement reading through its analog output. TDR Sensors are also known as Guided Radars or Guided Wave Radars.

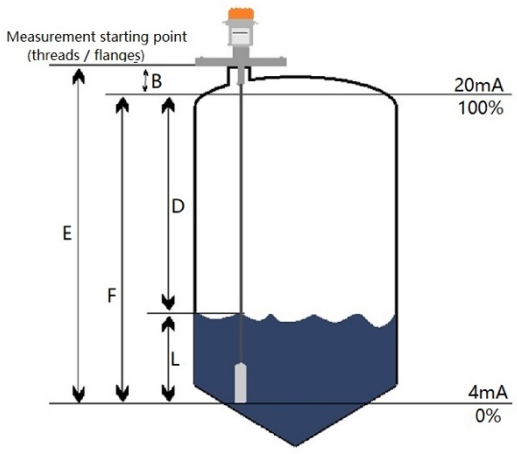
1. Overview：

Guided wave radar is a measuring instrument that operates on the principle of time travel, and radar waves travel at the speed of light. The operating time can be converted into a level signal by electronic components. The working probe emits high-frequency pulses and propagates along the cable probe. When the pulses meet the surface of the material, they are reflected, which are processed by the electronic information processing unit of the instrument and converted into level signals.

Input: The reflected pulse signal is transmitted to the electronic information processing unit of the instrument through the cable, and the microprocessor processes the signal to identify the echo generated by the microwave pulse on the surface of the material; the correct echo signal identification is completed by the intelligent software, and the distance from the surface of the material is completed. The distance D is proportional to the time travel T of the pulse: D=C×T/2, where C is the speed of light; the distance E of the empty tank is known, and the level L is:

L=W-D.

Output: Set by inputting the empty pipe height E (= zero point), the full tank height F (= full tank volume) and some application parameters, the application parameters will make the instrument automatically adapt to the measurement environment; corresponding to 4 ~ 20mA output.



Datum plane for measurement: the bottom surface of the screw thread or the sealing surface of the flange.

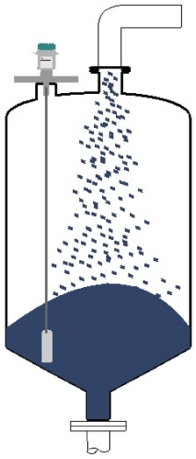
Note: When using the radar level meter, make sure that the highest material level cannot enter the measurement blind zone (the area shown in B in the figure).

2. Installation

2.1 Installation guide

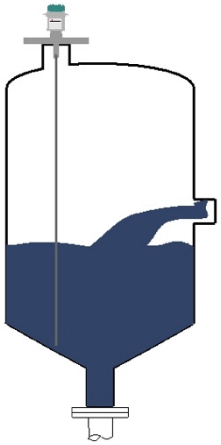
The following installation guidelines apply to the measurement of solid particles and liquid media with the cable probe and rod probe, while the coaxial tube probe is only suitable for the measurement of liquid objects.

- The picture on the right is the installation diagram of the cable radar, which is mainly used for the measurement of liquid and solid particles.



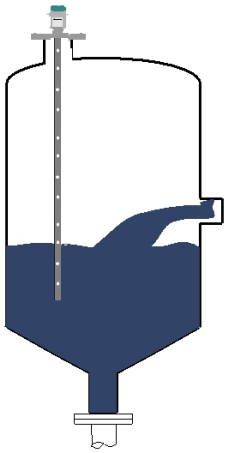
  - Keep as far away from the outlet and inlet as possible.
  - For metal tanks and plastic tanks, it is not allowed to touch the tank wall during the entire measurement process and within the measurement range; if it is a metal tank, the level instrument cannot be installed in the center of the tank.
  - The meter is suitable for installation at a quarter of the diameter of the silo
  - The bottom of the probe is about 30mm from the bottom of the tank
  - The minimum distance from the cable probe and rod probe to the tank wall is not less than 30mm

- The picture on the right is the installation diagram of the rod radar, which is mainly used for the measurement of liquid level.



  - Can measure any medium with a dielectric constant greater than or equal to 1.6
  - It is generally used to measure the medium with viscosity less than or equal to 500cst and is not easy to produce adhesion.
  - The radar has a strong suppression capability for steam and foam, and the measurement is not affected by them.

- The picture on the right is the installation diagram of the coaxial rod radar, which is mainly used for the measurement of low DK liquid.

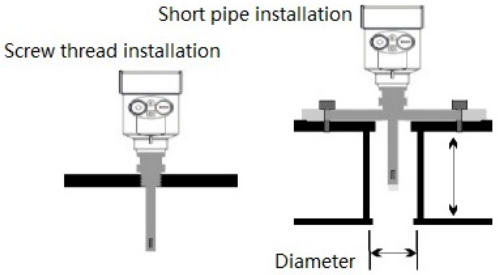


  - Can measure any medium with a dielectric constant greater than or equal to 1.6
  - It is generally used to measure the medium with viscosity less than or equal to 500cst and is not easy to produce adhesion.
  - The radar has a strong suppression capability for steam and foam, and the measurement is not affected by them.
  - The maximum measuring distance of the coaxial radar is 6 meters

2.2 Installation Method

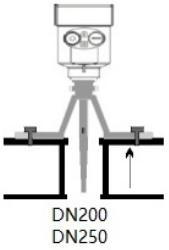
- Reasonable installation can ensure long-term effective measurement of the instrument.

➢ The instrument can be connected by thread, and the length of the thread should not exceed 150mm. It can also be installed on a short pipe; the diameter of the short pipe to be installed From 2" to 6", a short tube with a height of ≤150mm should be used. If it is installed on a longer short tube, the cable probe should be fixed at the bottom or a centering bracket should be used to avoid contact between the cable probe and the end of the short tube.



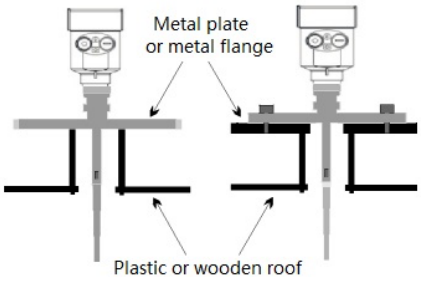
- Installation of 8 inch or 10 inch Diameter in short pipe

➢ When the instrument needs to be installed in a short pipe with a diameter greater than 8 inch, the inner wall of the short tube will generate echoes, which may cause measurement errors when the dielectric constant of the medium is low. Mounting considerations may need to be made for raised mounting on tank. Preferred mount is direct to tank top.



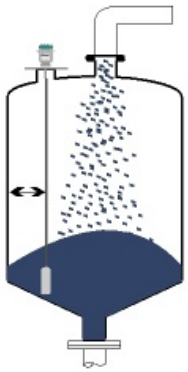
- Installation on plastic pipes

➢ Whether it is a cable or rod type, the process connection surface should be metal if the meter is to work properly. When the instrument is installed on a plastic tank, and the top is also made of plastic or other non-conductive materials, the instrument must be equipped with a metal flange, or when it is installed with a thread, a metal launch plate must be used.



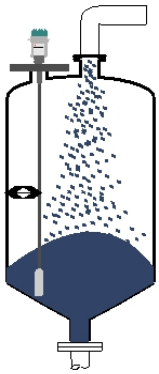
- The distance between the meter probe and the tank wall.

➢ The distance between the instrument probe and the tank wall is recommended to be between one sixth and one quarter of the diameter of the tank (at least greater than 12 inch , and at least 16 inch for concrete tanks). When selecting the probe length, pay attention to the distance between the bottom of the probe and the bottom of the tank About more than 30mm.

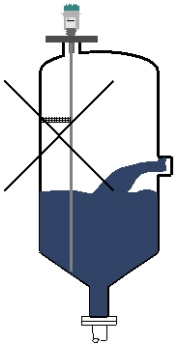


Precautions:

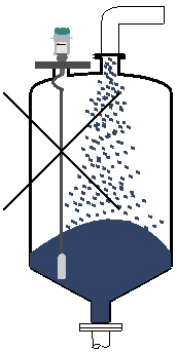
- The radar level meter cannot be installed at the discharge port (Figure 1)
- Other devices in the tank should be prevented from contacting the microwave conducting parts (Figure 2)
- It should be avoided that the guide wave cable comes into contact with the installation stub (Figure 3)



(Figure 1)



(Figure 2)



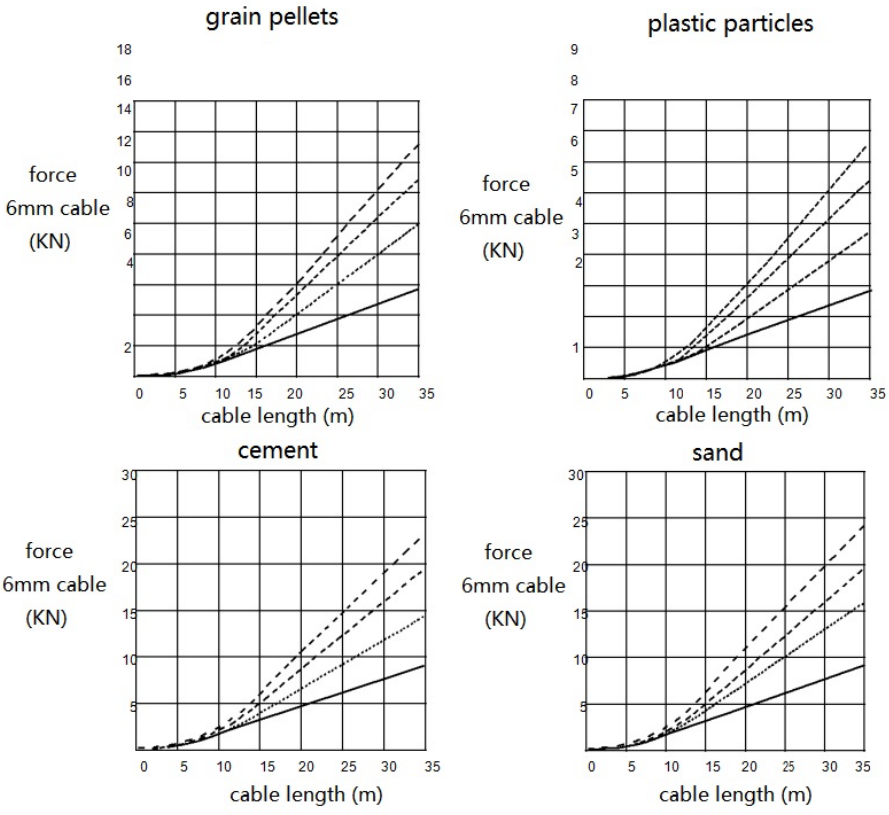
(Figure 3)

- Tension on the cable

When feeding and discharging, the measured medium will produce a pull-down force on the cable, and the pull-down force depends on the following factors:

1. Cable length 2. Material density 3. Storage bin diameter 4. The diameter of the cable

The following is the pressure generated by some typical mediums for a 6mm cable probe.



- Interference optimization

Suppression of interference echoes: The software can realize the suppression of interference echoes to achieve ideal measurement results.

Bypass and still-pipe (only for liquid) For viscosity not more than 500cst, bypass pipe, still-pipe or tube type can be used to avoid interference.

- Corrosive medium measurement

If measuring corrosive medium, a rod probe can be used to cover a plastic sleeve or a PTFE sleeve for measurement.

- Fixing the end of the guided wave radar probe

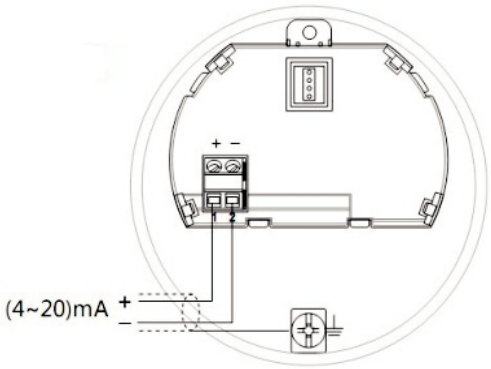
If the probe end needs to be fixed, there are two fixing methods: insulation fixing and non-insulating fixing.

(1) Insulation fixation refers to the insulation fixation method when the dielectric constant of the measured medium is low and fixed at the bottom of the metal tank

(2) Non-insulation fixing refers to the non-insulating fixing method used when the dielectric constant of the measured medium is very high, and the tank body is a non-metallic material with a very low dielectric constant.

2.3 Wiring

24V DC two-wire:



2.4 Debugging

Debugging by displaying keys

Through debugging software DCSOFT debugging,

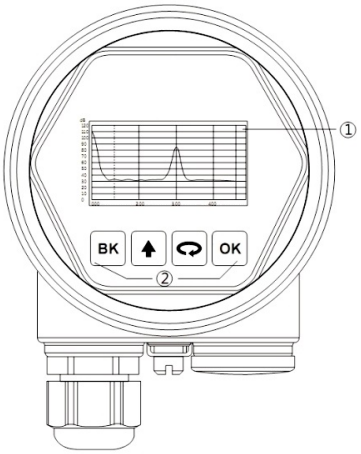
Debugging via HART Handheld Programmer

- **Display/Key:** The instrument is debugged through the four keys on the display screen, and the language menu for debugging is optional; after debugging, it is generally only used for display, and the measured value can be read out very clearly through the glass window. (Please refer to the instrument button setting manual for details)

Display/Keys:

① LCD display

② Button



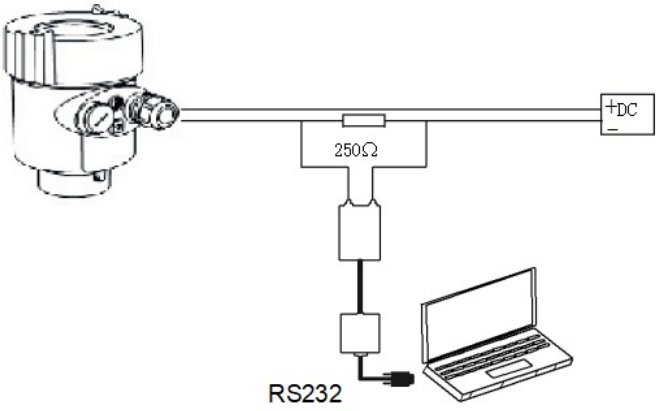
➢ Host computer debugging: Connect to the host computer through HART

① RS232 interface or USB interface

② Radar level meter

③ HART adapter

④ 250Ω resistor

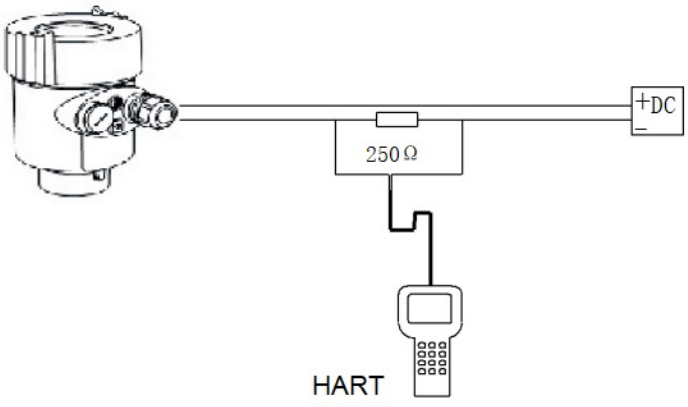


➢ HART handheld programmer programming

① HART handheld programmer

② Radar level meter

③ 250Ω resistor



3. Key Button Menu Operations

Program Sub-menu:

Basic settings	Exit,Cancel setting, return to the previous menu
Display	Basic adjustment for the Sensor are included in this menu. They are min. adjustment, max.adjustment, medium, damping time, Mapping curve, scaled units, scaling, Range,near blanking and sensor tag.
Diagnostic	In this menu you can check and test the sensor . You can view the measurement peak values, meas status, Choose curve ,echo-curve and Simulation.
Service	In this menu you can store False echo memory, current output, Reset, Language, Address, SYS KEY, Distance Adj, Envelope amplitude, Multi-point calibration,Lower signal levels.
Info	The information of sensor including sensor type, serial number, date of manufacture, software version.

3.0 Interface button description

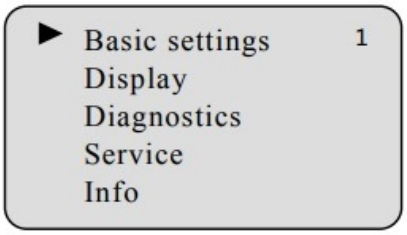
BK	Exit,Cancel setting, return to the previous menu
⬆	Select parameters, modify numbers
➲	Move the cursor, browse the menu
"OK"	Set confirmation, enter menu

Program Menu Structure: Menu Structure is shown in the appendix. Turn to next menu item pointed by right arrow with **"OK"**. Turn to next menu item pointed by down arrow with ➲ . Turn to left item with **"BK"** .

3.1 Operation instruction

1. Basic Settings

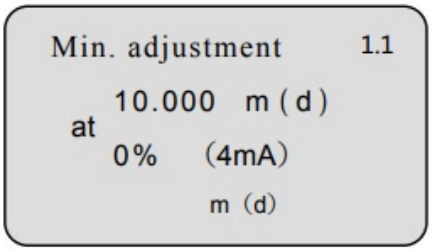
Basic settings include setting the main parameters of the instrument, such as min/ max adjustment, medium, damping and etc. In the operating state, press **"OK"** to enter programming mode, then the menu is displayed as below ：



Note : The menu item number is displayed on the top right corner.

1.1 Min. adjustment

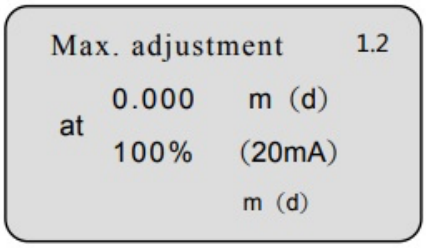
Min. adjustment applied for the range setting.The item is one of the two setting points that regulates the linear scaled current output. At main menu(the menu number is 1.0), select Basic settings with ➲ and confirm with **"OK"** . Now the Min.Adjustment is displayed on LCD. The menu item number is 1.1.



Press **"OK"** to enter Min. adjustment Programmed distance values, See parameter edition to learn how to edit parameters. Press ok key to confirm, press the BK button to give up programming.

1.2 Max. adjustment

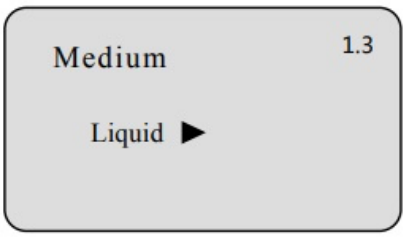
When the LCD displays the menu number is 1.1, press ➲ the to enter Max. adjustment, LCD displays as below

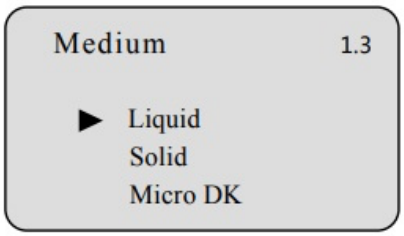


In this case, press **"OK"** to edit Max. Adjustment.

1.3 Medium

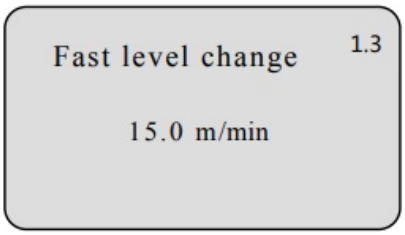
When LCD menu is 1.2, press ➲ to enter Medium menu, LCD displays as below.





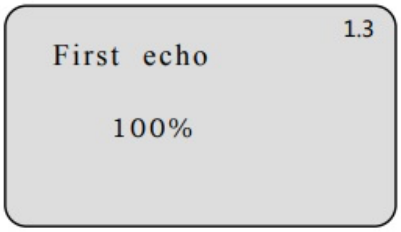
There are three options to choose from Liquid, Solid, and Micro DK. By setting the property of the medium, measurement can be made accurately.

- **Fast level change：** When LCD menu is 1.3, Available ➲ to move the arrow to select Medium as a liquid or solid, to enter Fast level change setting menu, LCD displays as below



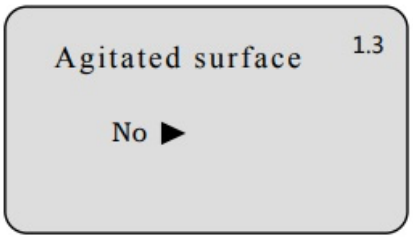
Press **"OK"** , Fast level change can be edited.

- **First Echo：** When you select liquid or solid, LCD menu is Fast level change setting menu, press ➲ to enter First echo ,LCD displays as below.

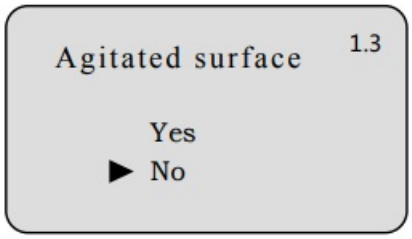


Press **"OK"** to edit First echo.

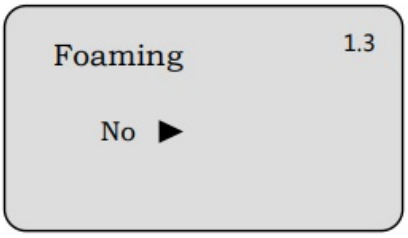
- **Agitatied Surface (Liquid）:**When selecting Medium of the liquid, the liquid crystal display menu First echo, press ➲ to Agitated surface ,LCD displays as below.



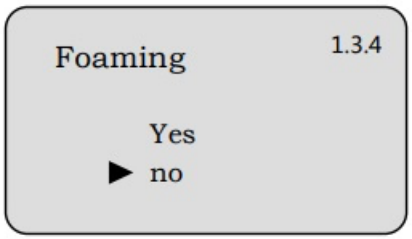
Press **"OK"**， then



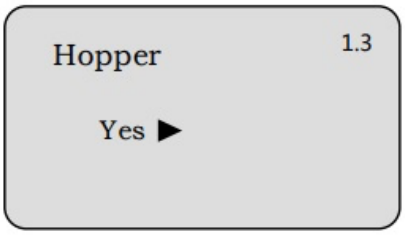
- **Foaming (Liquid）:** When the liquid crystal display menu is Agitated surface, press ➲ to Foaming, LCD displays as below.



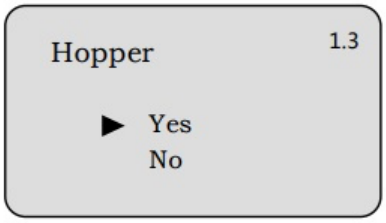
Press **"OK"**， then



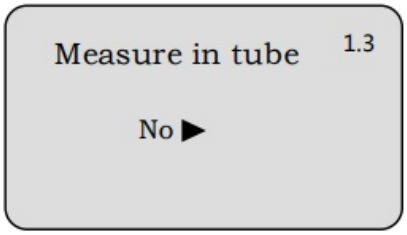
- **Hopper (Liquid）:** When the liquid crystal display menu is Foaming, press ➲ to enter Hopper, LCD displays as below.



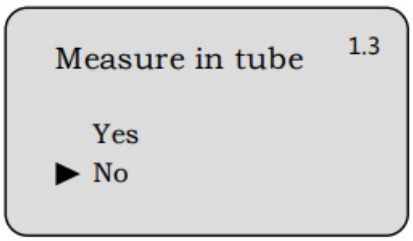
Press **"OK"**， then



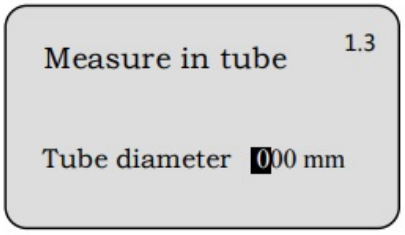
- **Measure in tube (Liquid）:** When the liquid crystal display menu is Hopper, press ➲ to enter Measure in tube, LCD displays as below.



Press **"OK"**， then

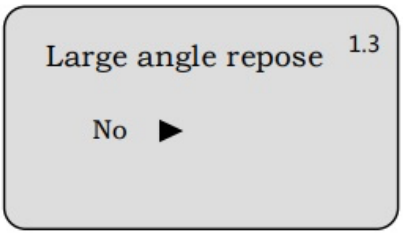


press ➲ to select Yes, Press **"OK"** to enter Measure diameter, LCD displays as below.

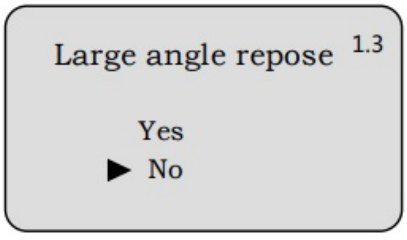


Note: Measure in tube must be the case where the tube is present in order to set up effective.

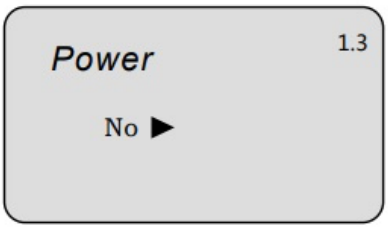
- **Large angle repose (Solid）:** When selecting Medium of the Solid, the liquid crystal display menu First echo, press ➲ to Large angle repose ,LCD displays as below.



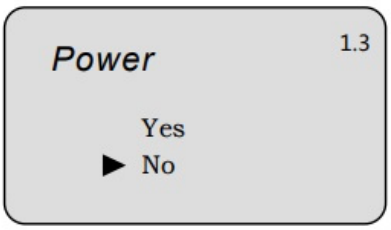
Press **"OK"**， then



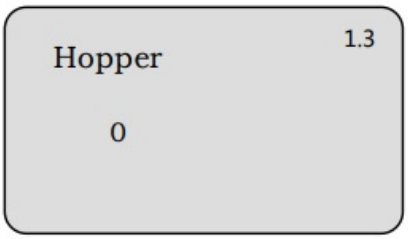
- **Power (Solid）:** When the liquid crystal display menu is Large angle repose, press ➲ to enter next meum, LCD displays as below.

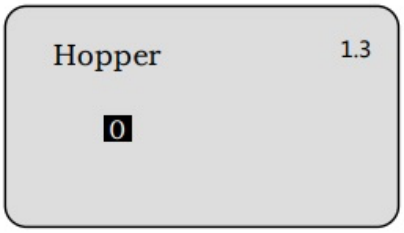


Press **"OK"**， then



- **Hopper (Solid）:** When the liquid crystal display menu is Power, press ↩ to enter Hopper, LCD displays as below.



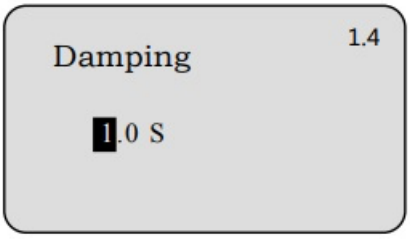


Press **"OK"**， Hopper settings can be edited.

After adjustment is complete, Press **"BK"** to return to the previous menu.

1.4 Damping

When LCD menu is 1.4, press **"OK"** to enter Damping setting menu, LCD displays as below.

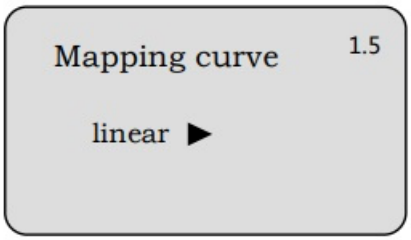


After editing, press **"OK"** to confirm.

1.5 Mapping Curve

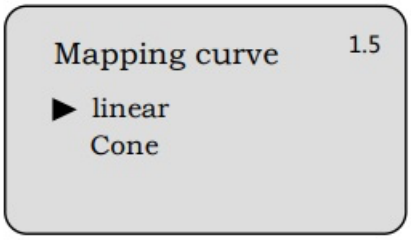
This menu define the correlation between the measured value and the current output. linear or non-linear mapping can be selected in this menu. For the non-linear correlations, parameters setting must be done by a computer previously.

when the menu item number is 1.4, press ↩ to enter Mapping curve, LCD displays as below.



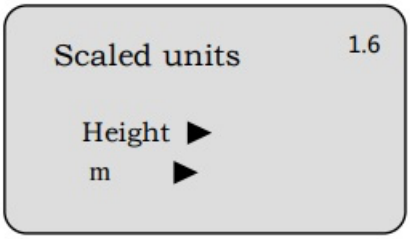
Press **"OK"** to edit Mapping curve, Use ↩ to select linear or other optional mapping, then press

"OK" to confirm.

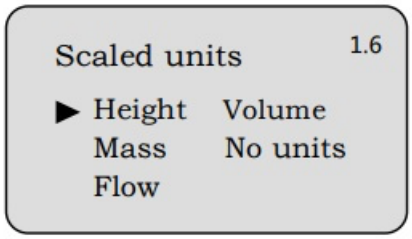


1.6 Scaled units

The unit of the scaled output value can be set in this menu. When LCD menu is 1.5, press ↩ to enter Scaled units menu, LCD displays as below.

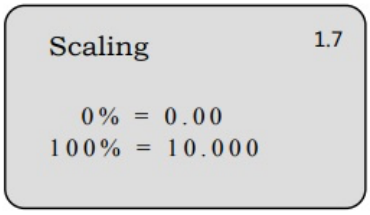


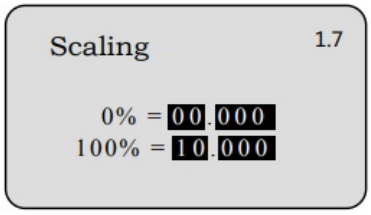
Press **"OK"** enter the editing menu, then Press ↩ move arrow to select the measure word and corresponding unit, confirm by **"OK"** .



1.7 Scaling

When LCD menu is 1.6, press ↩ to enter Scaling menu, LCD displays as below.



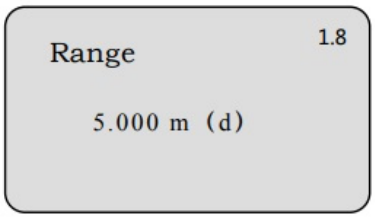


Press **"OK"** , 0% corresponds to the parameter field anti-black, Use the " ↑ " and ↩ to set the parameters,Press **"OK"** to confirm and enter the corresponding value of 100%, with the same method to set 100% of the parameters. After editing press **"OK"** to confirm and enter the next menu, Use the " ↑ " and ↩ to set Decimal point, Press **"OK"** to confirm.

1.8 Range

In order to obtain the correct measurement results, set the range of the instrument. When the single

display is 1.7, press ➲ to enter the range setting menu, LCD display

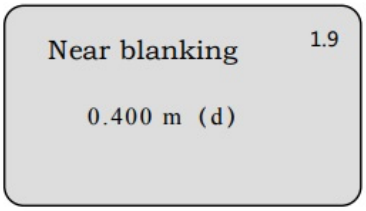


Under normal circumstances, the range setting value is adjusted in accordance with the previous low move to complete the set. If you want to adjust, press **"OK"** to enter the range setting, See Character/number parameter editing method in the previous edit the distance value. Press **"OK"** to confirm, press **"BK"** to exit programming.

1.9 Nearing blanking

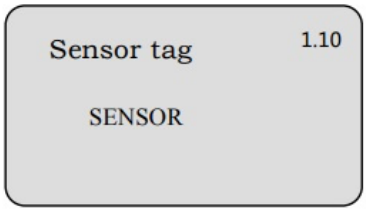
When a fixed obstruction interference measurement is made close to the sensor surface mounting screw and the maximum feed height does not reach the obstruction, Near blanking setting function can be used to avoid measurement errors.

When LCD menu is 1.8, press ➲ to enter Near blanking menu, LCD displays



1.10 Sensor Tag

When LCD menu is 1.9, press ➲ to enter Sensor tag menu, LCD displays as below.

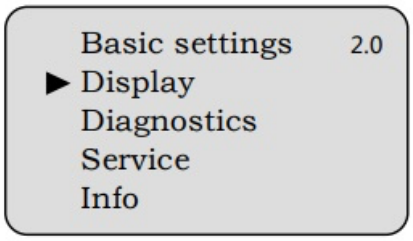


Press **"OK"** to enter the parameter edit state, press **"OK"** to confirm .

The basic setup menu ends here.

2. Display

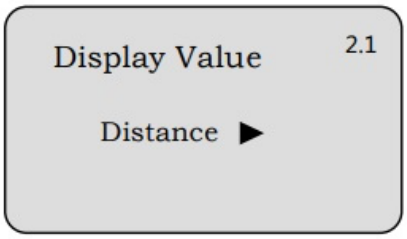
This menu is used to set display mode. When the LCD displays the main menu, press ➲ , move arrow to point to the type you want, LCD displays as below.

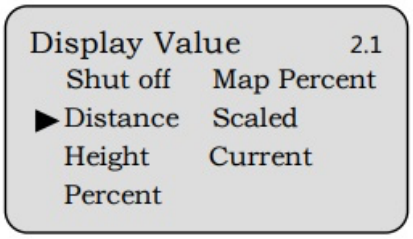


Press **"OK"** to enter Display menu.

2.1 Display Value

Indicating that the parameters of the current display is Distance, that is, the instrument displays the measured null value. Press **"OK"** enter the edit mode, LCD display

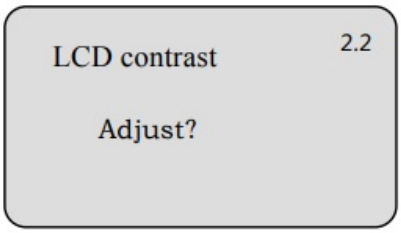




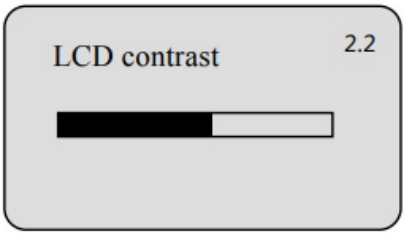
Press ↩ , Move the arrow to the desired parameter, press **"OK"** to confirm, Press **"BK"** to exit the programming and return to the previous menu.

2.2 LCD contrast

When the menu item is 2.1, press ↩ to enter LCD contrast menu LCD displays as below



Press **"OK",** then

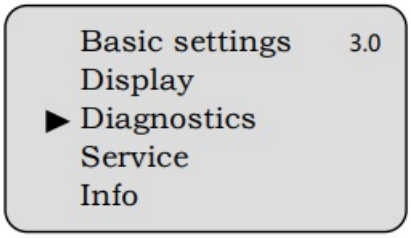


Use ↑ and ↩ to increase or decrease the contrast, then press the **"OK"** to confirm the adjustment and save the result.

3. Diagnostics

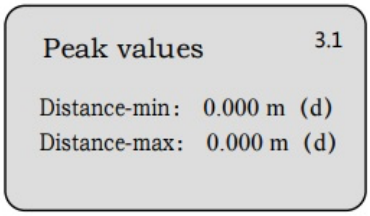
The running status of the sensor can be provided by the menu Diagnostics, and furthermore sensor testing can be done.

When the LCD displays the main menu, press ↩ , move arrow to point to the type you want, LCD displays as below.



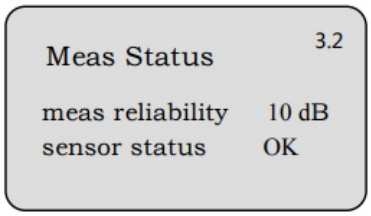
3.1 Peak Values

Press **"OK"** to enter Diagnostics menu.



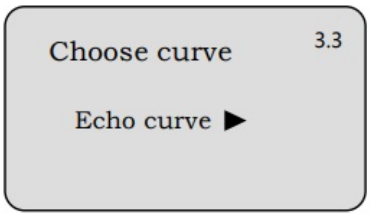
3.2 Meas Status

When LCD menu is 3.1, press ↩ to enter Meas Status menu, LCD displays as below.

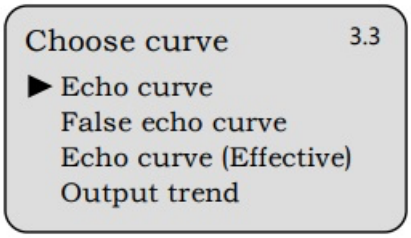


3.3 Choose curve

When LCD menu is 3.2, press ↩ to enter Choose curve menu, LCD displays as below.



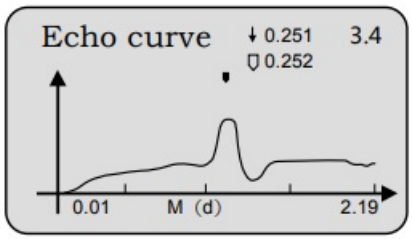
Press **"OK"** to enter Choose curve menu.



Press ↩ move arrow to select the curve what you want, confirm by **"OK"**.

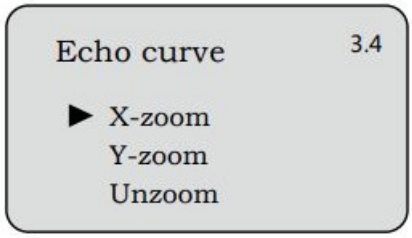
3.4 Echo curve

When LCD menu is 3.3, press , the LCD shows the selected curve

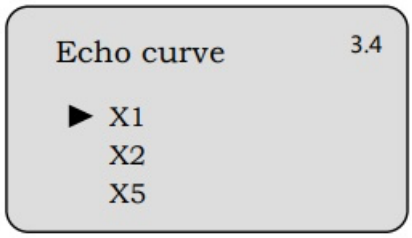


Curve zoom function

In the LCD display curve, press **"OK"** to enter the curve zoom edit menu, Liquid Crystal Display Curve Zoom is used to zoom in on the time axis and amplitude to make the curve more visible. Press **"OK"** to enter Choose curve menu.



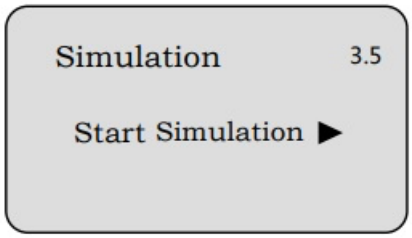
Press move arrow, select the scaling direction of the curve or does not scale, press **"OK"** to confirm. When Y-axis zoom is selected, press **"OK"** to enter the zoom selection menu; press **"BK"** to exit the curve display.



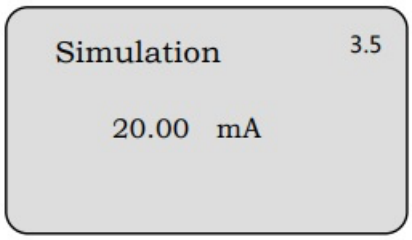
3.5 Simulation

Simulation is used to simulate the 4~20mA current output. By current output simulation the accuracy and linearity of the current output can be checked. And the system testing can be carried out.

Press to enter Simulation menu when the menu item number is 3.4, LCD displays as below



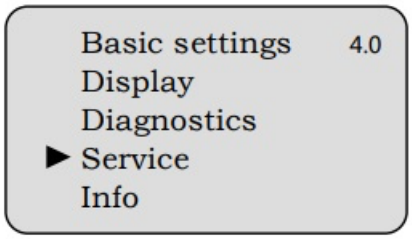
Press **"OK"** to enter Simulation setting



press **"OK"** to confirm, enter the appropriate settings menu, complete the numerical settings, press **"OK"** to confirm, this time, the current output simulation value.

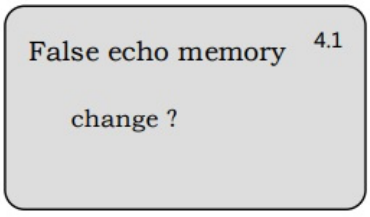
4. Service

This menu with professional functions can only be used by trained technicians. They are False echo storage, reset, sensor settings back up Password setting and etc. When the LCD displays the main menu, press , move arrow to Service item, LCD displays as below

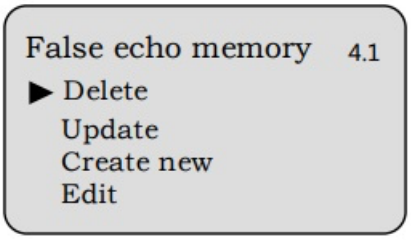


4.1 False echo memory

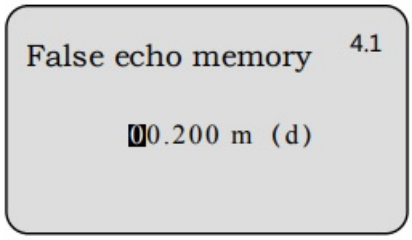
When there is a fixed obstacle interference measurement within the measurement range, the function of false echo memory can be used to overcome its effects. When the LCD displays the main menu item is 4.0, press **"OK"** , enter to Service sub-menu, LCD displays as below



Press **"OK"** , LCD displays as below



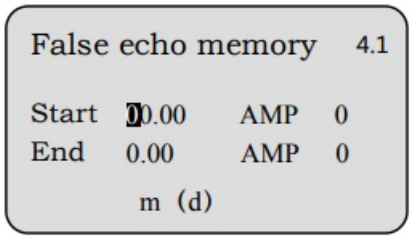
Press , select Update/Create new/Edit/Delete a false echo, confirm with **"OK"** .



When you select update/create new, you are asked to input a distance value for the real echo. Then press **"OK"** to confirm it and to start the operation.It will take some time to store the false echo. Enter the true echo distance value, then press **"OK"** to confirm after entering the distance value, please wait for a while, The instrument is performing false echo learning, return to the previous menu after finishing.

Note: The difference between updating the False Echo curve and the New False Echo curve is that the False Echo Curve after the Real Echo is cleared by the New False Echo Curve, and the False Echo Curve after the Real Echo is updated constant.

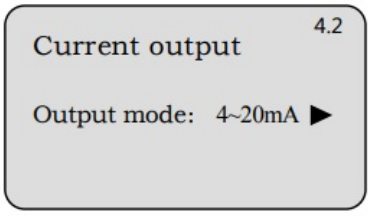
If you want to edit the false echo curve, press ➲ to move the arrow to this item, with to enter the edit menu .



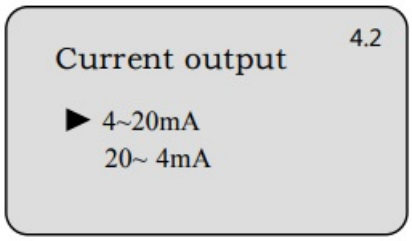
4.2 Current output

This setting is used to set the current output mode.

When LCD menu is 4.1, press ➲ , LCD displays as below



Press **"OK"** , LCD displays as below



Select output current as 4-20mA or 20-4mA. 4-20mA mean the Min.level is corresponding to 4mA and the Max. level is corresponding to 20mA. 20-4mA mean the Min. Level is corresponding to 20mA and the Max. level is corresponding to 4mA.

press , you select the item you want and confirm with **"OK"** .

4.3 Reset

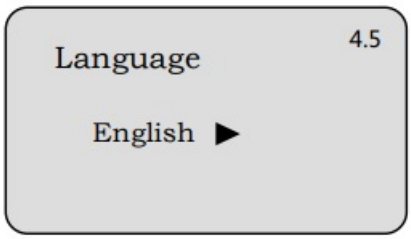
With the reset function, modified settings are reset. When the liquid crystal display Current output (menu number 4.2), press enter the reset function, the LCD display

Press **"OK"** to confirm the selection, the parameters in the instrument settings will be restored to the factory settings before commissioning.

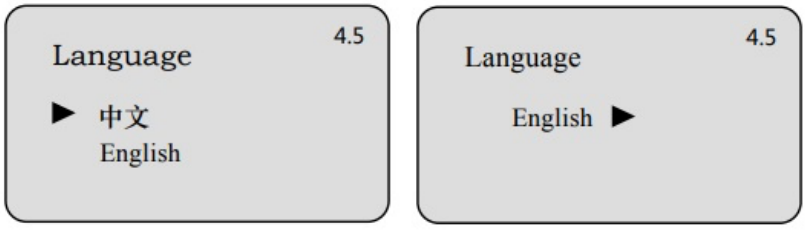
4.5 Language

In this menu you can change the language. English and Chinese are available.

When the liquid crystal display Reset (menu number 4.3), Press to enter Language menu , LCD displays as below.



Press **"OK"** , select the desired language.



Press **"OK"** to confirm the selection.

4.6 Address

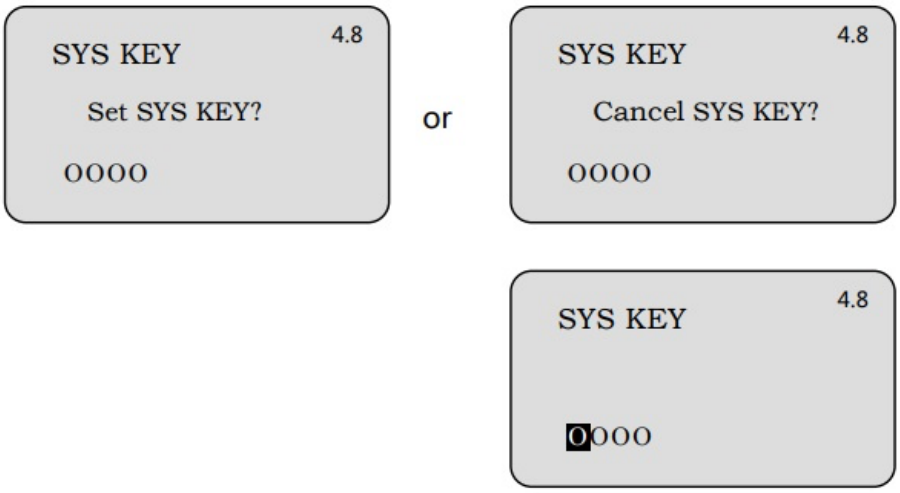
When the liquid crystal display Language (menu number 4.5), press enter the Address , the LCD display

Press **"OK"** to confirm the selection.

4.8 SYS KEY

The password is used to protect the instrument parameters. After the password function is enabled, you need to input the password when changing any one of the instrument parameters. Once the correct password is entered, the password protection function can be canceled within the time limit, and the parameters of the instrument can be modified.

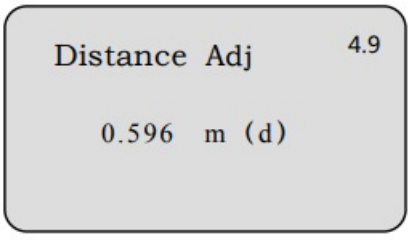
When the liquid crystal display Address (menu number 4.6), Press ↩ to enter SYS KEY menu , LCD displays as below



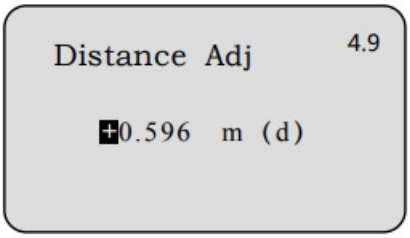
Press **"OK"** to confirm Password setting function.

4.9 Distance Adj

The distance Adj setting is used to modify the instrument measurement error. The value is the difference between the actual distance value and the displayed distance value. When the menu item is 4.8, press ↩ to enter Distance Adj menu, LCD displays as below



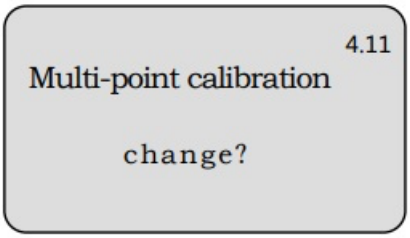
Press **"OK"** to enter the parameter editing menu, Press ↷ to change the different programming items.



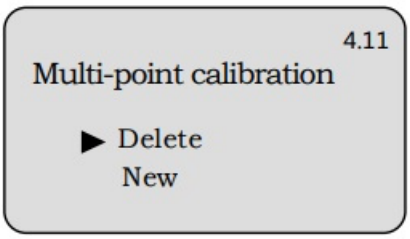
Press **"OK"** to confirm.

4.11 Multi-point calibration

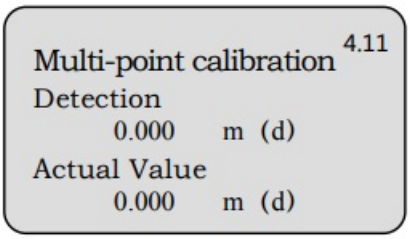
When the menu item is 4.10, press ↷ to enter Multi-point calibration menu, LCD diplays as below



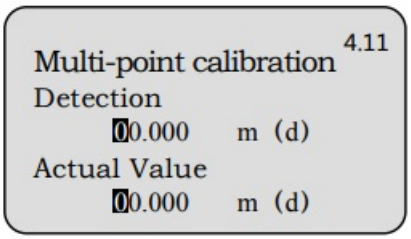
Press **"OK"** to enter Simulation setting



Press **"OK"** , complete the delete function, press ↷ enter the new

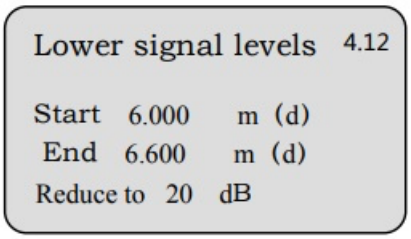


Press **"OK"** to enter the parameter editing menu, Press ↷ to change the different programming items, confirm with **"OK"** .

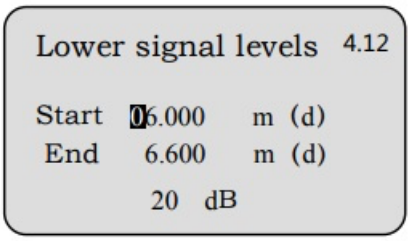


4.12 Lower signal levels

When the menu item is 4.11, press ↷ to enter Lower signal levels menu, LCD diplays as below



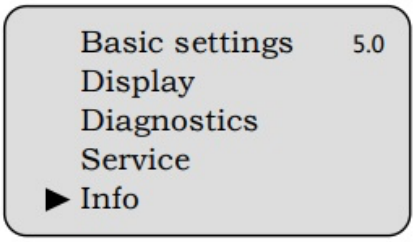
Press **"OK"** to enter the parameter editing menu, Press ↷ to change the different programming items. confirm with **"OK"**.



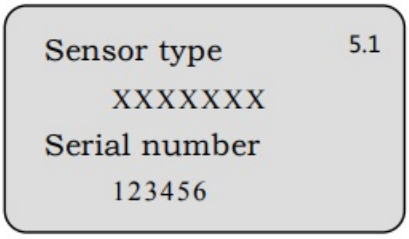
5. Information

In this menu the most important sensor information can be displayed: Sensor type, product serial number, production date, software version number and so on.

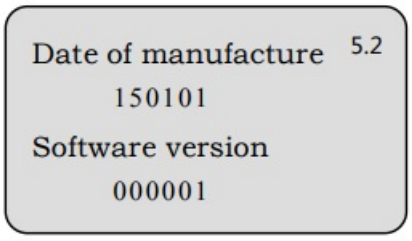
When the LCD displays the main menu, press ↷ , move arrow to Information item, LCD displays as below



Press **"OK"** to enter Information setting, LCD diplays as below

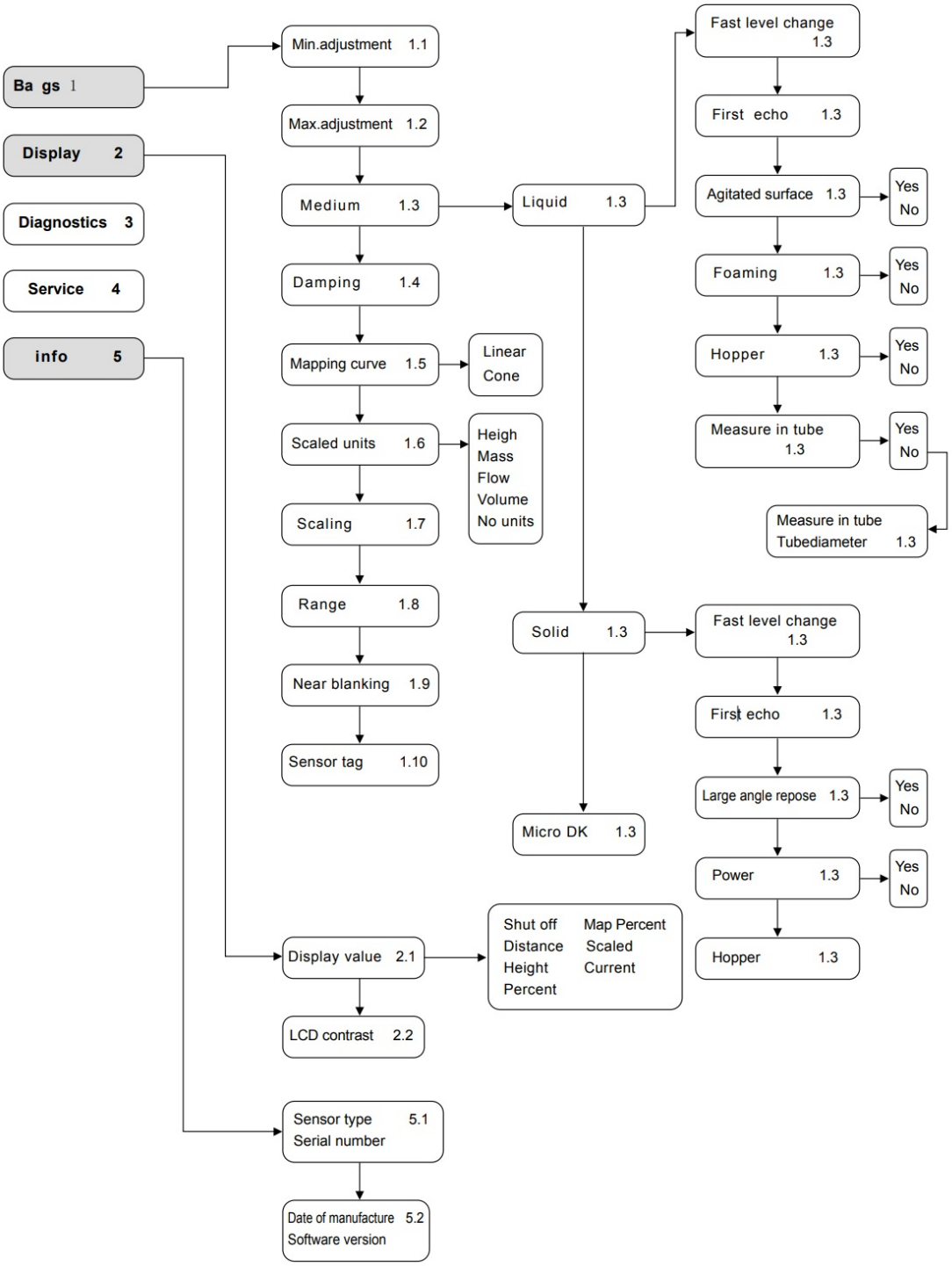


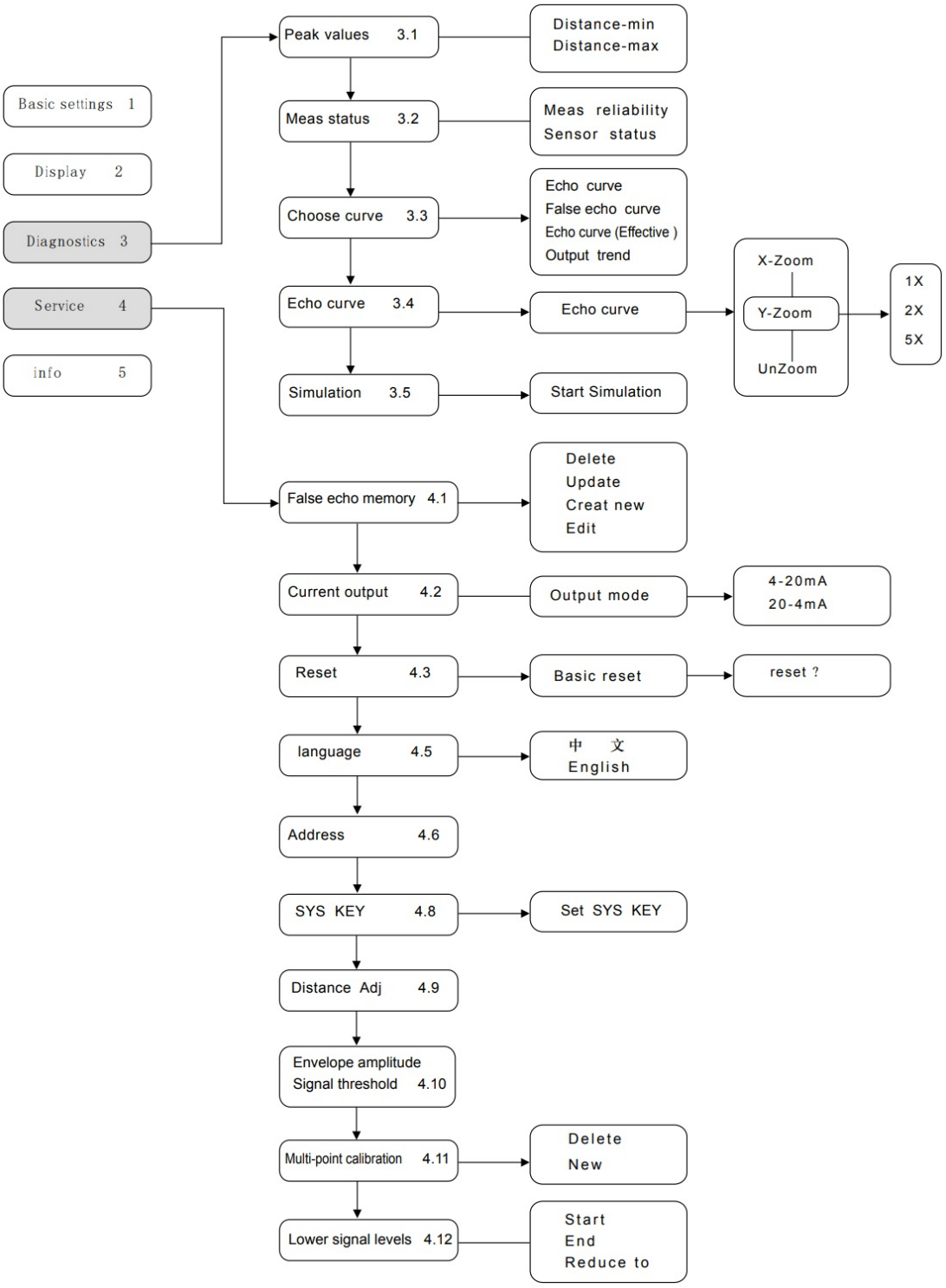
Press , LCD diplays as below



Press **"BK"** to exit editing and return to the main menu.

Attached:


Ba gs 1
Display 2
Diagnostics 3
Service 4
info 5
Min.adjustment 1.1
Max.adjustment 1.2
Medium 1.3
Damping 1.4
Mapping curve 1.5
Linear
Cone
Scaled units 1.6
Heigh
Mass
Flow
Volume
No units
Scaling 1.7
Range 1.8
Near blanking 1.9
Sensor tag 1.10
Liquid 1.3
Fast level change 1.3
First echo 1.3
Agitated surface 1.3
Yes
No
Foaming 1.3
Yes
No
Hopper 1.3
Yes
No
Measure in tube 1.3
Yes
No
Measure in tube Tubediameter 1.3
Solid 1.3
Fast level change 1.3
First echo 1.3
Large angle repose 1.3
Yes
No
Power 1.3
Yes
No
Hopper 1.3
Micro DK 1.3
Display value 2.1
Shut off
Distance
Height
Percent
Map Percent
Scaled
Current
LCD contrast 2.2
Sensor type 5.1
Serial number
Date of manufacture 5.2
Software version


Basic settings 1
Display 2
Diagnostics 3
Service 4
info 5
Peak values 3.1
Distance-min
Distance-max
Meas status 3.2
Meas reliability
Sensor status
Choose curve 3.3
Echo curve
False echo curve
Echo curve (Effective)
Output trend
Echo curve 3.4
Echo curve
X-Zoom
Y-Zoom
UnZoom
1X
2X
5X
Simulation 3.5
Start Simulation
False echo memory 4.1
Delete
Update
Creat new
Edit
Current output 4.2
Output mode
4-20mA
20-4mA
Reset 4.3
Basic reset
reset ?
language 4.5
中 文
English
Address 4.6
SYS KEY 4.8
Set SYS KEY
Distance Adj 4.9
Envelope amplitude
Signal threshold 4.10
Multi-point calibration 4.11
Delete
New
Lower signal levels 4.12
Start
End
Reduce to