

Keypad Setup Instruction



Xi'an Dechuang Electrical Technology Co., Ltd

Keypad Setup Instruction

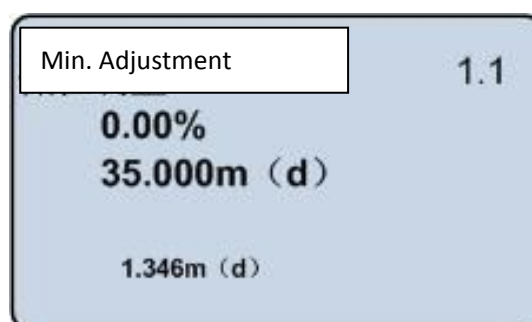
BK	Exit the Settings, return to the parent menu
↑	Select parameters, modify the Numbers
↶	Move the cursor, browse the menu
OK	Enter the menu, confirm the Settings

1. Setup Instruction

1.1 Min. Adjustment

Min. adjustment is used to adjust the measuring range.


It determines the corresponding relationship of output current with Max. Adjustment. In the main menu, when the menu number displays 1, please press OK to enter the basic setup sub menu, the LCD displays as following

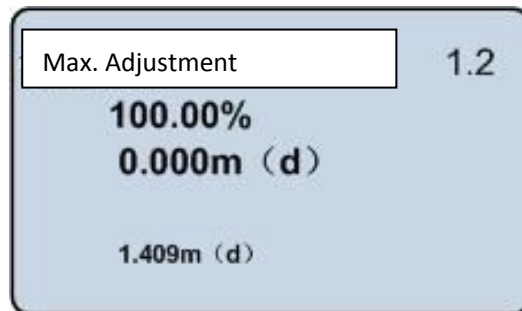


Press OK key to enter programming lowest level percent and edit a percent value and distance according to the above characters or digital parameters in the parameter edit method of programming methods .If the editing is finished, please press OK key to confirm, otherwise, press BK key to give up programming.

1.2 Max. Adjustment


Max. Adjustment is used to adjust the measuring range.

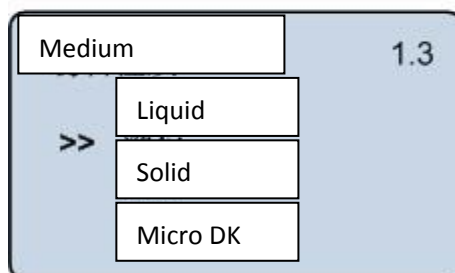
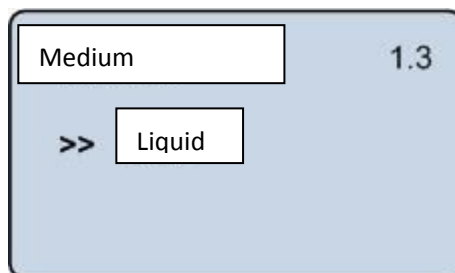
It determines the corresponding relationship of output current with Min. Adjustment .When the LCD displays 1.1, please press the  key to enter Max. Adjustment, the LCD displays as following



At this time, please press OK key to edit the Max. Adjustment.

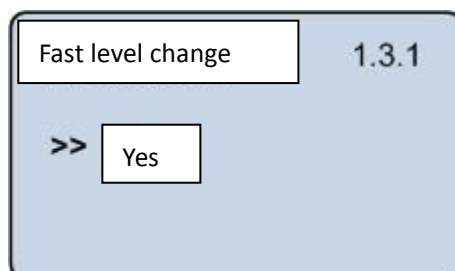
1.3 Medium

When the LCD displays 1.2, press  key to the medium programming, the LCD displays as following. Medium menu is used to choose solid, liquid or micro DK, to further determine the other material natures which can affect the measurement.

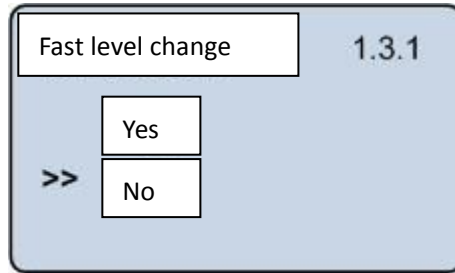


1.3.1 Fast Level Change


When choosing solid or liquid medium, press OK key to enter fast change menu, the LCD display as following

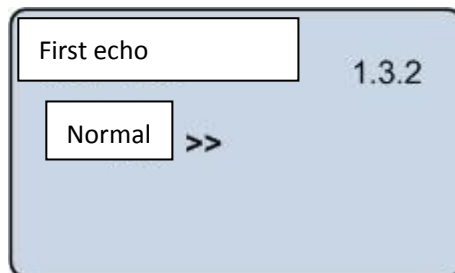


Then press OK key to enter fast change menu, the LCD display as following

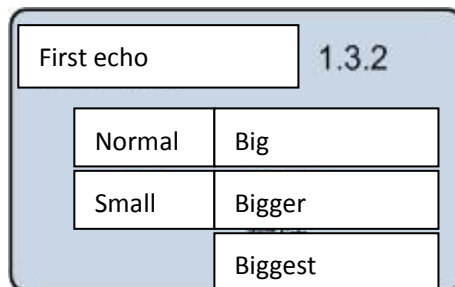



1.3.2 First Echo

When choosing solid or liquid medium, the LCD menu displays 1.3.1, press  key to choose the next menu, enter first echo selection menu, the LCD displays as following



Then press OK to enter first echo selection menu, the LCD displays as following



Press  key to choose the first echo processing with the following 5 ways:

Normal: without processing the head wave range (Default)


Small: the first echo weakens 10dB

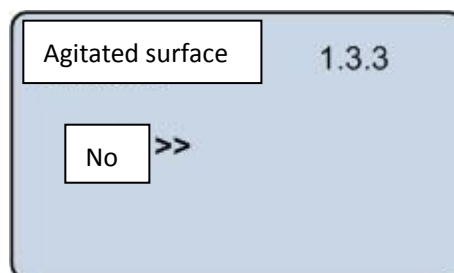
Big: the first echo range enhances 10dB

Bigger: the first echo range enhances 20dB

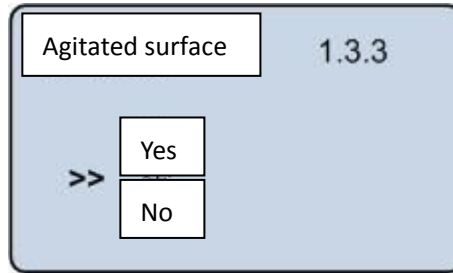
Biggest: the first echo range enhances 40dB

1.3.3 (Liquid) Agitated Surface


When the material is liquid and the LCD menu displays 1.3.2, press  key to choose the next menu, enter agitated surface menu, the LCD displays as following

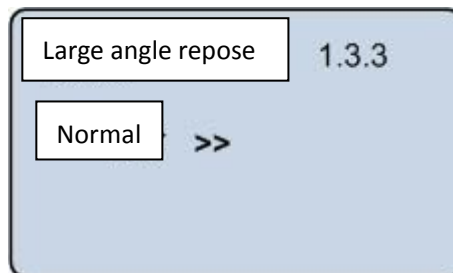


Then press OK key to enter agitated surface menu, the LCD displays as following

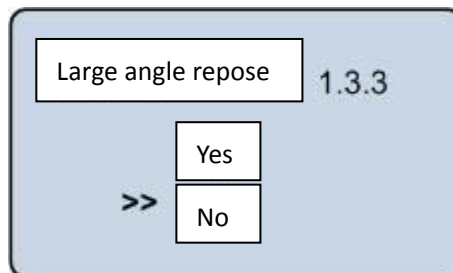


1.3.3 (Solid) Large Angle Repose


When the medium is solid and the LCD menu displays 1.3.2, press  key to choose the next menu, enter large angle repose menu, the LCD displays as following

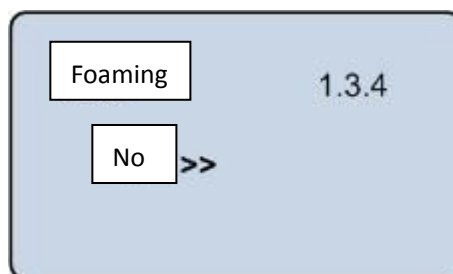


Then press OK key to enter large angle repose menu, the LCD displays as following

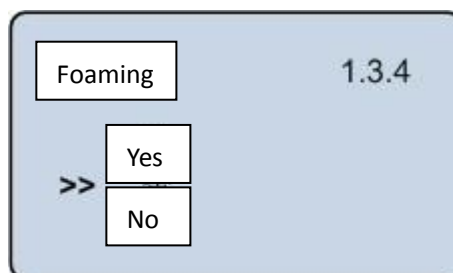


1.3.4 (Liquid) Foaming


When the LCD menu displays 1.3.3, press  key to choose the next menu, enter liquid foaming menu, the LCD displays as following

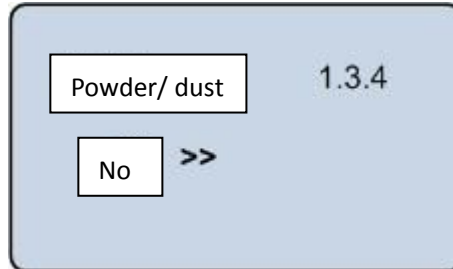


Then press OK key to enter liquid foaming menu, the LCD displays as following

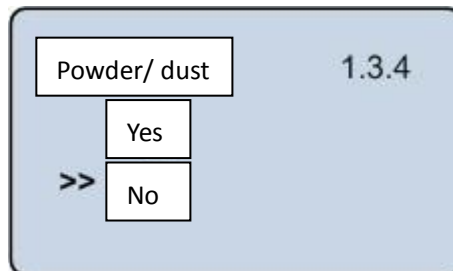


1.3.4 (Solid) Powder/ Dust

When the LCD menu displays 1.3.3, press  key to choose the next menu, enter powder/ dust selection menu, the LCD displays as following

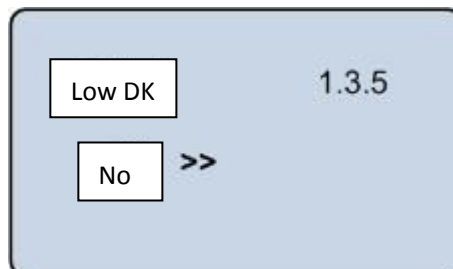


Then press OK key to enter powder/ dust selection menu, the LCD displays as following

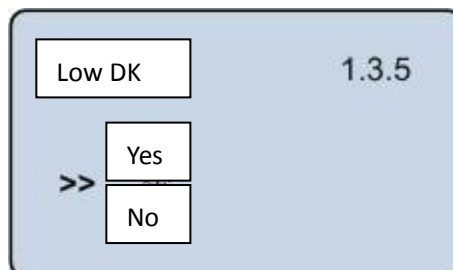



1.3.5 Low DK

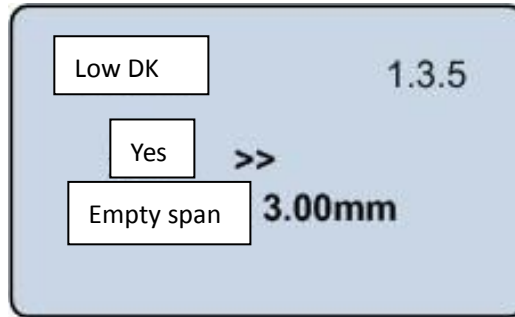
When the LCD displays 1.3.4, press OK key to enter DK value adjusting and setup menu, the LCD displays as following



Then press OK key to enter DK value adjusting and setup menu, the LCD displays as following

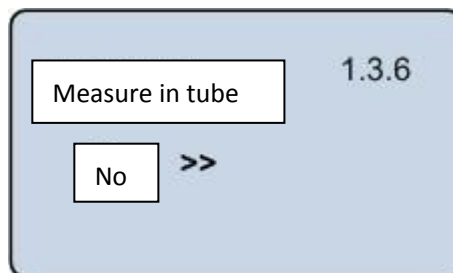


Press  key choose "Yes" used for measuring setup when the DK value is small, the LCD displays as following. To reduce the tank bottom reflection, manual is needed to input the accurate empty span values to estimate the position of tank bottom.

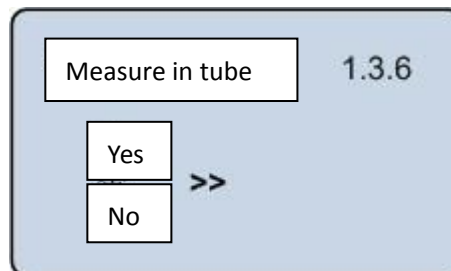



1.3.6 (Liquid) Guided Wave Tube Setting

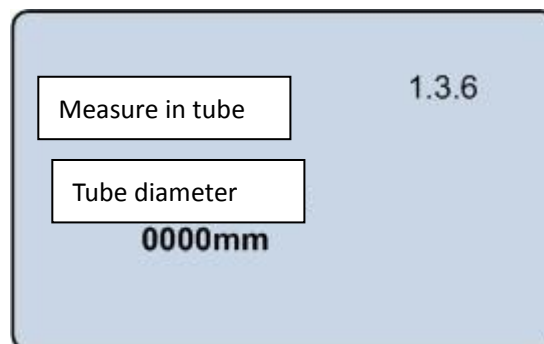
When the LCD menu displays 1.3.5, press OK key to enter guided wave tube setup menu, the LCD displays as following



Then press OK key to enter guided wave tube measure selection menu, the LCD displays as following



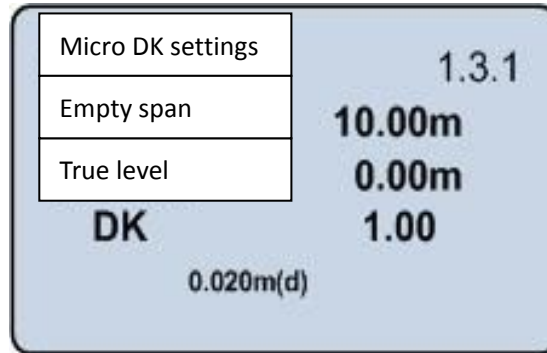
Press  key to choose "Yes", then press OK key to enter diameter of guided wave tube setup menu, the LCD displays as following



Note: guided wave tube setup is valid only if there is a guided wave tube.

1.3.1 Micro DK

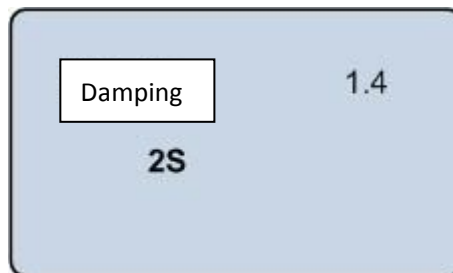
When the medium is micro DK, press OK key to enter micro DK setup menu, the LCD displays as following





Usually it used for less than 1.4 dielectric constant when the medium is micro DK, the direct echo of medium surface is very weak, or can not be measured, but the medium level can be measured by tank bottom reflection. The following two parameters need to be input: 1. Empty span, it's the empty height of empty tank or container. 2. True level or dielectric constant of the medium under measure. Input one of the two parameters is enough. The accuracy of the above parameters directly affects the precision of the measurement result. "Micro DK" needs to be selected carefully, it's inappropriate for most measurement. When "Micro DK" is selected, the system will estimate to get measuring result by directly echo way or bottom reflection way according to the echo situation.


1.4 Damping

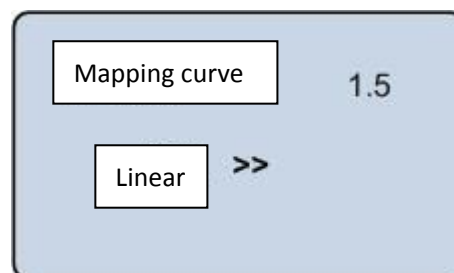
When the LCD menu displays 1.3, press  key to enter damping setup menu, the LCD displays as following




Press OK key to enter parameter editing condition, use [] key to set number, use  key to choose editing number bits, then press OK key to confirm.

1.5 Mapping Curve


Mapping curve is used in choosing non-linear output map or linear map which has set by host computer. When the LCD menu displays 1.4, press  key to enter output maps editing menu, the LCD displays as following

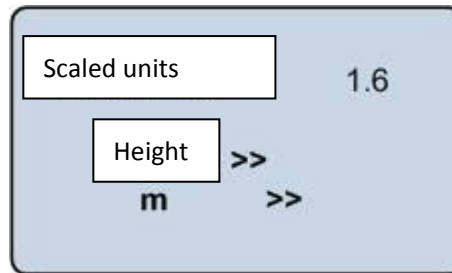



Press OK key to enter parameter editing condition, use  key to choose linear or other optional map modes, such as linear, cone. Press OK key to confirm after editing.

When choosing linear output maps, it is used to select different display unit.

1.6 Scaled Units

When the LCD menu displays 1.5, press  key to enter scaled units setting menu, the LCD displays as following

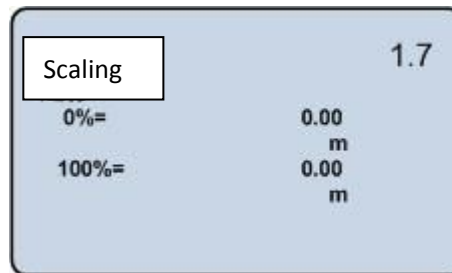





Press OK key to enter parameter editing condition, use  key to select different dimensions. Press OK key to confirm, and further select corresponding display unit, then press OK key to confirm.

When choosing linear output maps, it is used to specify the mapping relationship.


1.7 Scaling

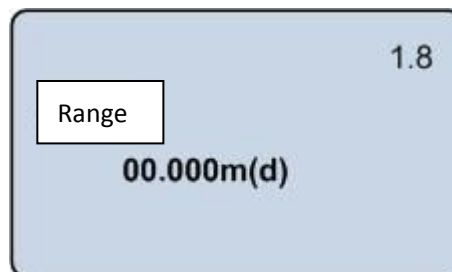
When the LCD menu displays 1.6, press  key to enter scaling setup menu, the LCD displays as following





Press OK key, parameter domain black, use [] key to set the decimal point position, then press OK key to confirm; 0% corresponding parameter domain black, use [] and  key to set parameters, then press OK key to confirm. Set the 100% corresponding value by the same way.

1.8 Range


In order to get the correct measurements, it is necessary to setup the measuring range of the instrument. When the LCD menu displays 1.7, press  key to enter measuring range setup menu, the LCD displays as following

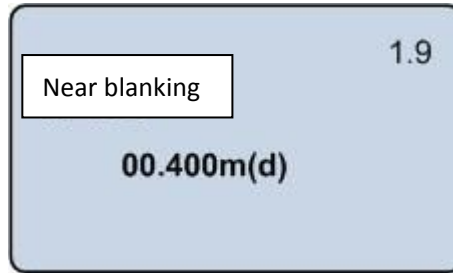



Press OK key to correspond parameters +- domain black, use [] and  key to setup parameters, and then press OK key to confirm.

1.9 Near Blanking


The near blanking setting functions can be used to avoid measurement error if some fixed obstacles exist near the sensor surface, and the highest medium level will not reach the obstacles.

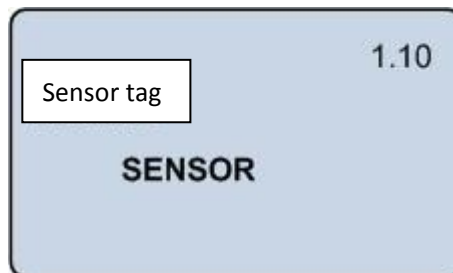
When the LCD menu displays 1.8, press  key to enter near blanking setup menu, the LCD displays as following



Press  key to setup parameters, and then press OK key to confirm after edit.

1.10 Sensor Tag

When the LCD menu displays 1.9, press  key to remove the menu to sensor tag display item, the LCD displays as following




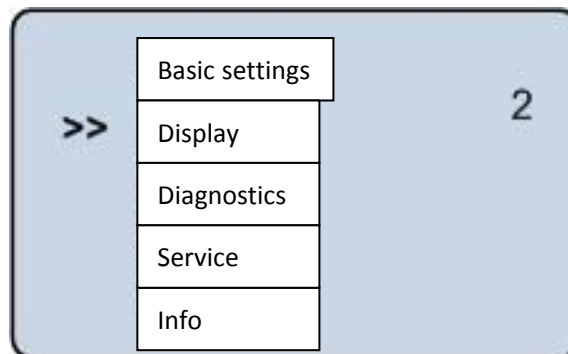
Press OK key to enter parameter editing condition, then press OK to confirm after edit.

The content of the basic setup menu is over here.

2. Display

This function is used for display programming.

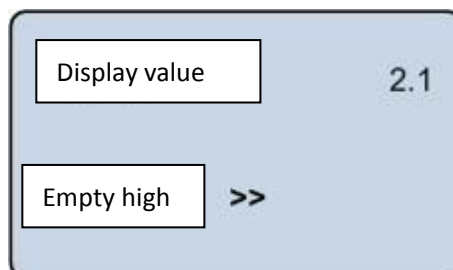
When the LCD displays the main menu, press  key and move the arrow to display items, the LCD displays as following



Press OK key to enter display mode programming.

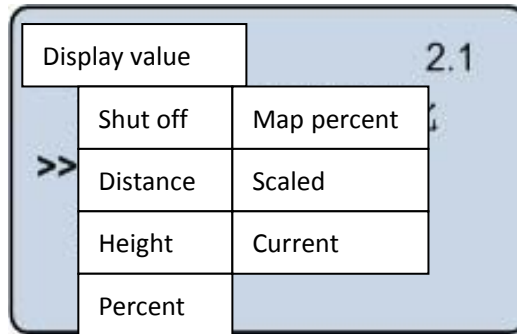
2.1 Display Value


Enter the display mode programming, the LCD displays as following




Said that the parameter of current display value is empty span, which is the measured empty span

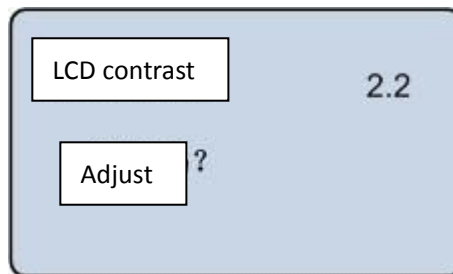
value the instrument shows. Press OK key to enter editing condition, the LCD displays as following



Move  key to required parameter, press OK to confirm. Press BK key to exit and return to previous menu after edit.

2.2 LCD Contrast

When the LCD menu displays 2.1, press  key to enter LCD contrast adjustment, it displays as following

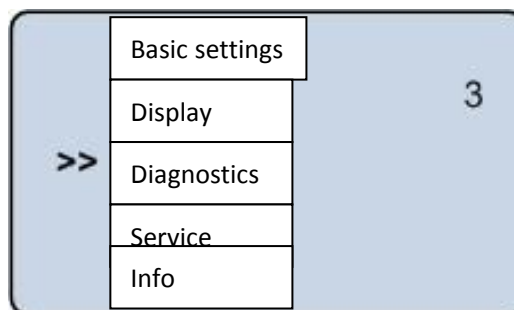


Press OK key to enter adjustment condition

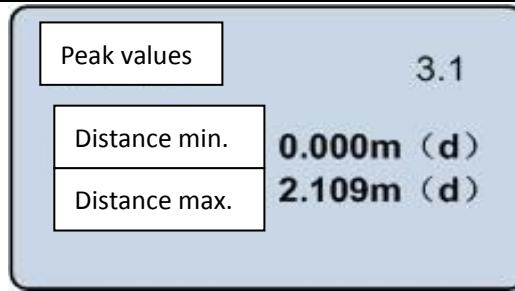


Use [] and  key to increase or decrease the contrast, then press OK key to confirm and save the result.


3. Diagnostics




Diagnostic function is used in test and system debugging the working status of the instrument and its components. Press OK key to enter diagnostic function, the LCD displays as following

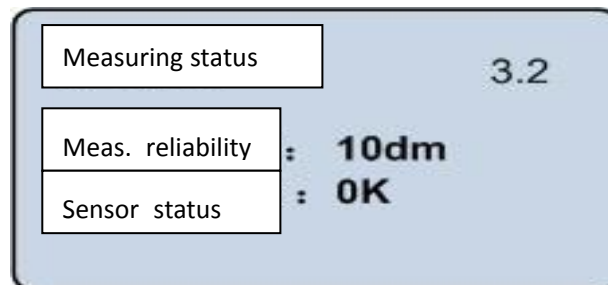


3.1 Peak Value Measurement


Peak value is shown as empty height peak value in the process of measurement; this parameter can be eliminated by 4.4 reset item of the service menu. When the LCD displays the main menu, then press  key to move the arrow to diagnostic item, the LCD displays

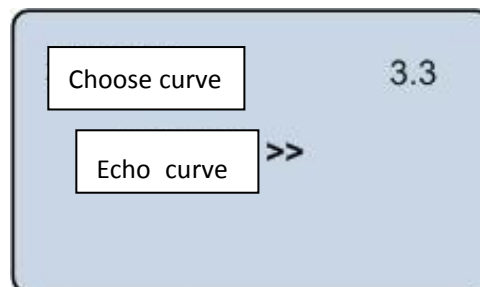
3.2 Measuring Status

When the LCD menu displays 3.1, press  key to enter next diagnostic measuring status, the sensor working status displays

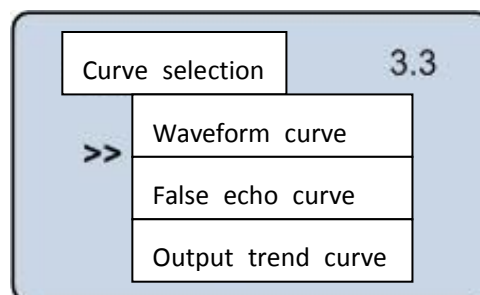



3.3 Choose Curve

When the LCD menu displays 3.2, press  key to enter echo curve display function, the LCD displays as following



If other curve is needed, press OK key to enter curve selection menu, the LCD displays as following



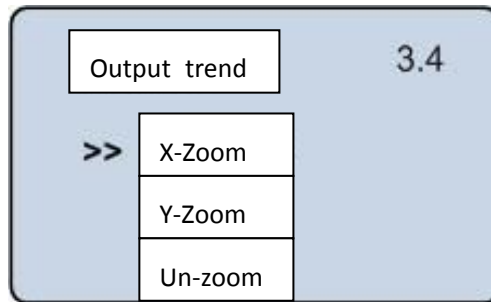
Use  key to move the arrow to the curve needed, then press OK key to confirm.


3.4 Output Trend

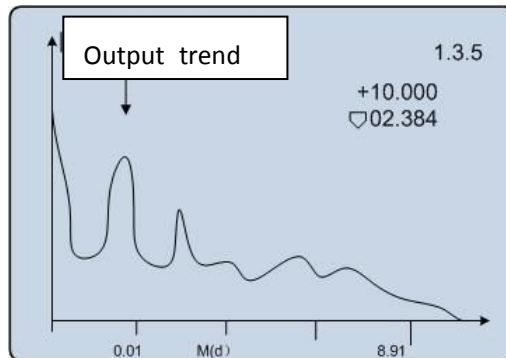
When the LCD menu displays 3.3, press  key, the LCD displays the selected curve.


Output trend function is used for magnify curve on time line and range to observe more clearly.

When the LCD displays curve, press OK key to enter output trend editing menu, the LCD displays as following




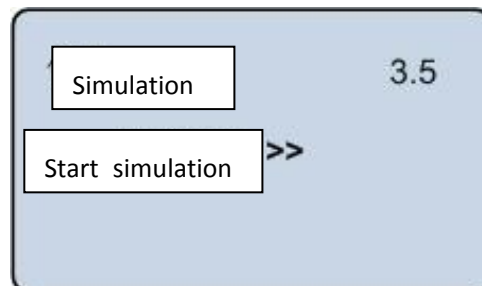
Press  key to choose zoom direction or without zoom, then press OK key to confirm, the LCD displays as following



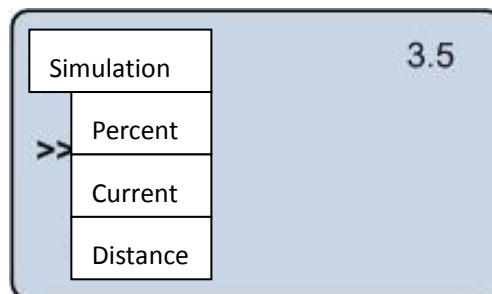
When choosing X-zoom, press [] key to move to the desired position, then press OK key to confirm; At this time, the selected curve is amplified to full screen, then press BK key to exit curve display.


3.5 Simulation

Simulation function is simulation data of 4...20mA current, it's used to inspect the current output function of the instrument is normal or not. It's also used in system debugging. When the LCD menu displays 3.4, press  key to enter simulation condition, the LCD displays as following



Press OK key to confirm emulation function, the LCD displays as following



Press  key to choose the mapping way if current output, then press OK key to confirm. Enter the corresponding Settings menu, press OK key to confirm after numerical value setting. At this time, the setting of the corresponding output current of the current value.


Note: description of three alternative menu items

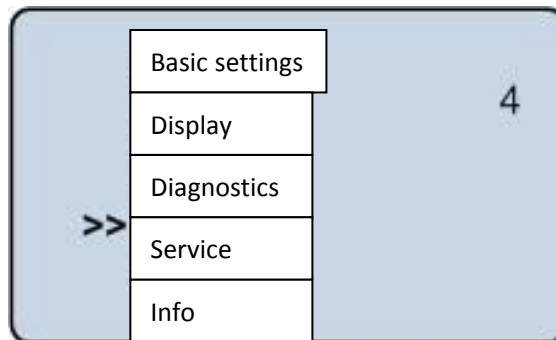
Percent: output current according to the specified percent. For instance, 100% corresponds 20mA output, 0% corresponds 4mA output.

Current: output current according to the specified current. For instance, 16.6mA corresponds 16.6mA output.

Distance: output current according to the specified empty height. (The corresponding relation of the value and current value is determined by 1.1 low position setting, 1.2 high position setting and 1.5 output mapping)

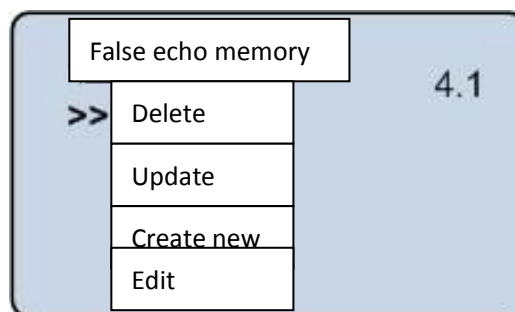
4. Service


Service menu contains more professional functions, for the use of trained personnel. Mainly contain false echoes study, time-varying gain control, reset and save the instrument parameters, etc. When the LCD displays main menu, press  key to move the arrow to service item, it displays as following

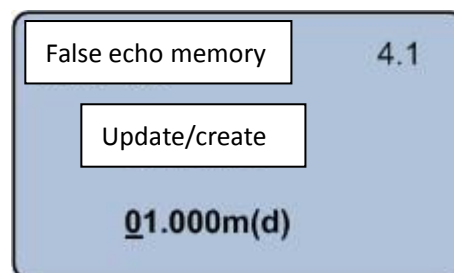


4.1 False Echo Memory

When some fixed obstacles exist in the measuring range, the function of learning false echo memory is used to overcome the influence. When the LCD displays main menu 4, press OK to enter service item, it displays as following




If update/create false echo curve is needed, press  key to move the arrow to desired item, then press OK key to confirm, the LCD displays as following

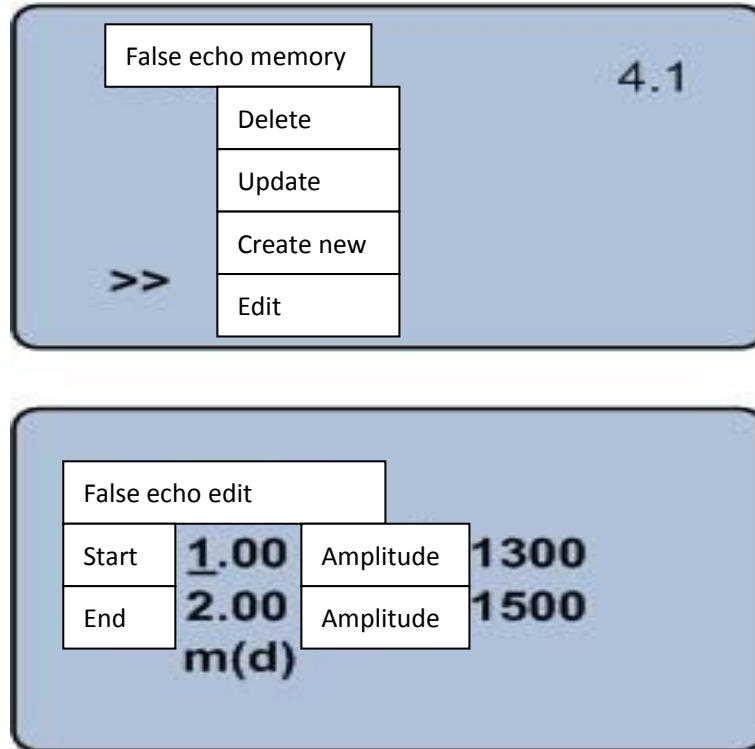


Input the real echo distance value as prompted, then press OK key to confirm. The LCD displays "please wait", the instruments start false echo learning, and then return to false echo learning menu.

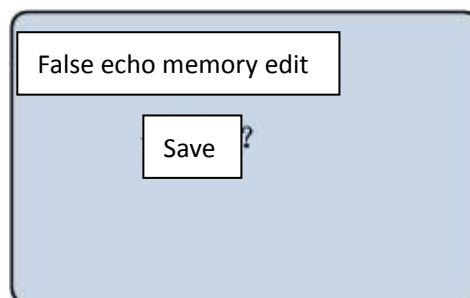
Note: the distinction of update and create new false echo is: the false echo curve will be reset

after the real echo when create; but it remains after the real echo when update.

If the false echo curve editing is needed, press  key to move the arrow to desired item, and press OK key to confirm. This function can edit or modify the established false echo to meet the requirements of special conditions. The LCD displays as following after entering false echo editing (note: this menu needs to be operated by professional personnel)




Curve editing take two points, initial point and end point as position coordinate of the desired editing curve each time. Followed by the corresponding amplitude value is to be modified (note: When the distance coordinate input or modified, followed by the corresponding amplitude will automatically update according to the current saved data, as reference of the amplitude modifying); after finished the two coordinate modifying, press OK key to confirm the change; the instrument will automatically together the two input points into a straight line and generate a new false echo curve, to replace the original curve. After press OK key to confirm, the interface will display the modified false echo curve for reference, then press BK key can return to the above editing interface to continue editing. When confirm the false echo editing meets the working condition requirements, press BK key again to quit the false echo the edit menu. The LCD displays as following

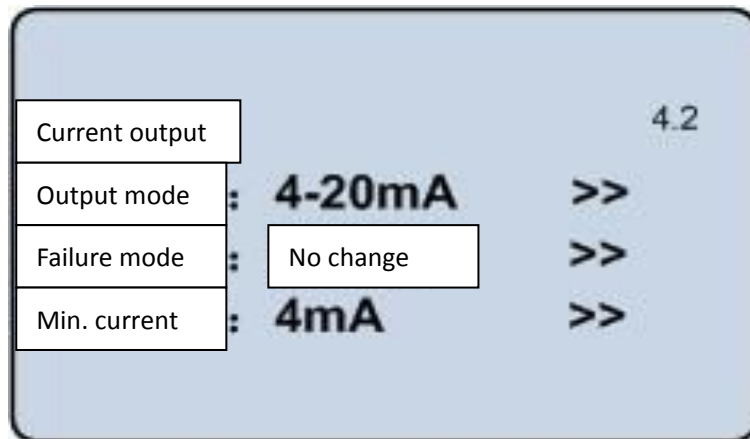


Press OK key to save the above modification, press BK key to quit.

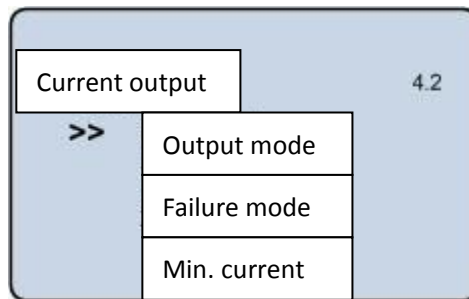
4.2 Current Output

This setup is used to set the current output mode.


When the LCD displays main menu 4.1, press  key, the LCD displays as following

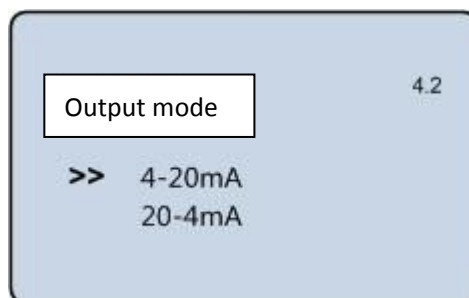


Press OK key




Output mode

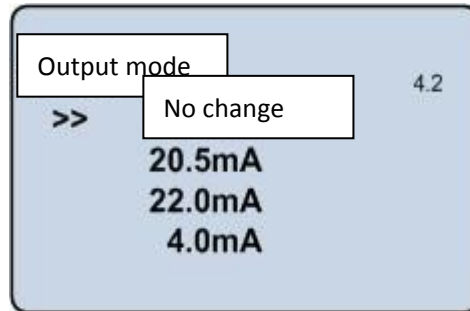
Output mode is used to select 4-20mA or 20-4mA mode. 4-20mA indicates that the low material level corresponds 4mA, high material level corresponds 20mA; 20-4mA indicates that the low material level corresponds 20mA, high material level corresponds 4mA。When the LCD displays current output selection menu 4.2, press  key to move the arrow to the output mode and press OK key to confirm. The LCD displays as following




Failure mode


Press  key to choose the desired setup and press OK key to confirm.

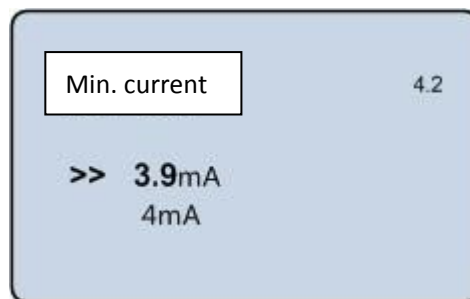
Fault mode is used to select when a fault alarm, output current is not changed, output 20.5mA, 22mA or <3.8mA. When the LCD displays current output selection menu 4.2, press  key to move the arrow to the fault mode and press OK key to confirm. The LCD displays as following




Press  key to choose the desired setup and press OK key to confirm.


Minimum current

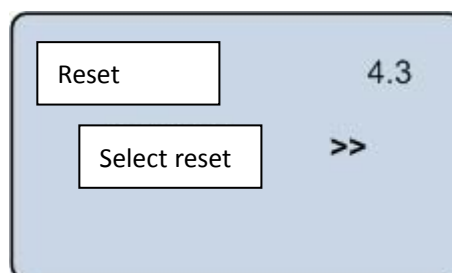
Minimum current is used to select output minimum electric injection as 4mA or 3.8mA. When the LCD displays current output selection menu 4.2, press  key to move the arrow to the minimum current and press OK key to confirm. The LCD displays as following



Press  key to choose the desired setup, and press OK key to confirm.


4.3 Reset

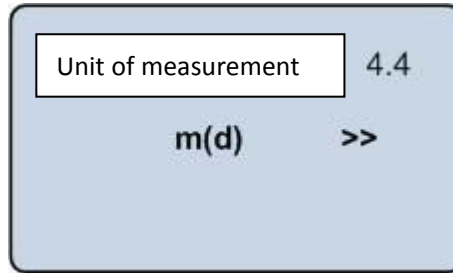
Reset function is used to reset the instrument parameters. There are four reset functions: basic setup, factory setup, measured peak value and cumulative flow. Basic setup is a basic set of the instrument parameters restore to factory default Setup; the measured peak value reset is to reset the diagnosing measured peak value; cumulative flow reset is to reset the cumulative flow when the instrument is used for open-channel meter. When the LCD displays current output (menu 4.2), press  key to enter reset function, it displays as following



Press OK key to enter reset selection menu to select the corresponding reset function.


4.4 Unit of Measurement

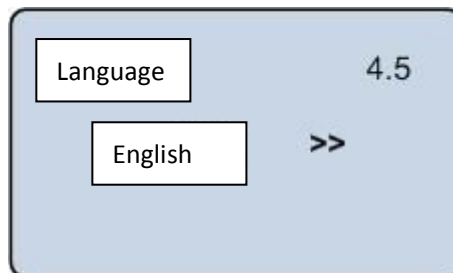
Measurement unit provide user metric or inch. When the LCD displays reset menu (menu 4.3), press  key to enter measurement unit setup menu, it displays as following



Press OK key to enter measurement unit selection menu to choose the corresponding unit.


4.5 Language

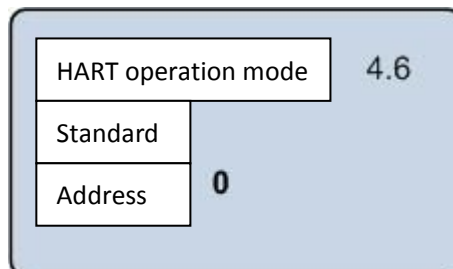
There are four languages selection function for user, as Chinese, English, French and Italian. When the LCD displays measurement unit (menu 4.5), press  key to enter language setup function, it displays as following



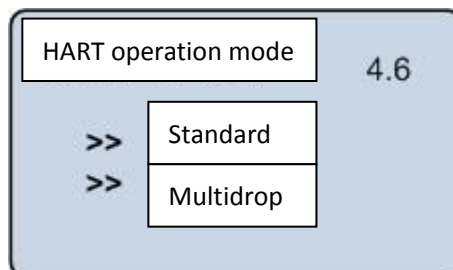
Press OK key to enter language selection menu to choose the desired language.


4.6 HART Operation Mode

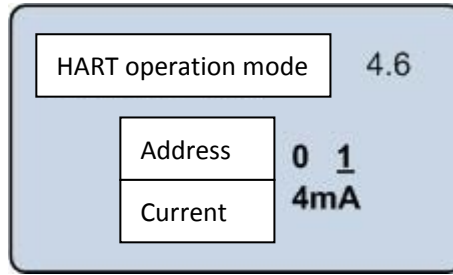
When two or more instruments are connected to upper computer by HART communication interface, this function is needed to set the instruments to multidrop working mode. When the LCD displays measurement unit (menu 4.5), press  key to enter HART operation mode, it displays as following



Press OK key to enter HART operation mode setup menu, the LCD displays as following




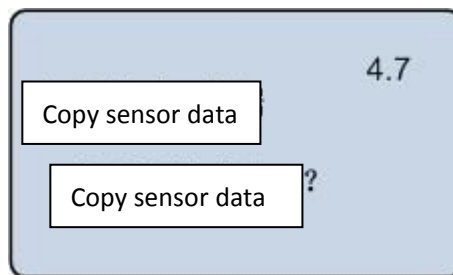
Press  key to choose standard or multidrop working mode. Then computer address is specified as 0 when choosing standard working mode. When choosing HART working mode as multidrop, it displays as following



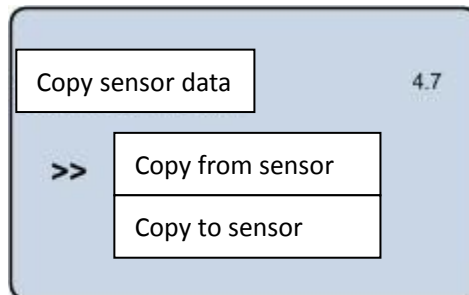
The address can be changed to 1~15; working current 4mA and 8mA optional, press OK key to confirm.

4.7 Copy Sensor Data

Copy sensor data contains two sub-menus, copy from the sensor and copy to the sensor. This function is used to protect the instrument parameters. When the instrument parameters are set according to the working conditions, copy from sensor function can be used to protect the set parameters. Copy to sensor function can be used to recover the parameters if they were changed unexpectedly. When the LCD displays HART working mode menu (menu 4.6), press  key to enter sensor data copying function, it displays as following




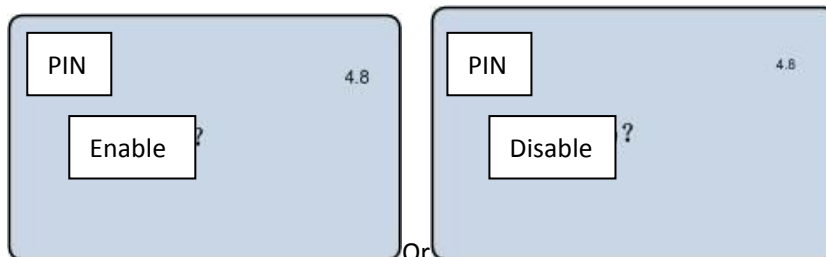
Press OK key



Press  key to choose the menu, press OK key to confirm and perform the functions.

4.8 PIN


The PIN is used to protect instrument parameters. After the start of PIN function, the PIN needs to be input when change any instrument parameters. When the LCD displays copying the sensor data menu, press  key to enter the PIN function, it displays as following

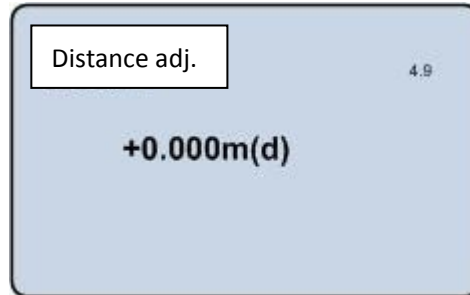


Press OK key to start PIN function to set PIN or cancel the PIN function.

4.9 Distance Adjustment

Distance adjustment setting is used to modify the error measurement value of instrument to the difference of

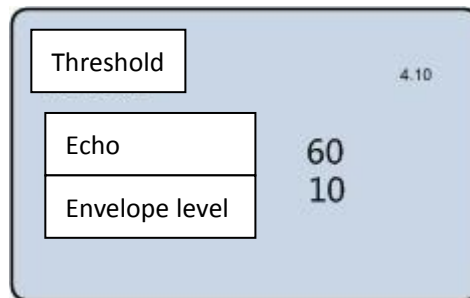
the actual distance and display. When the LCD displays the menu number as 4.8, press  key to enter distance adjustment setting menu, it displays as following




(Note: this menu needs to be operated by professional personnel)

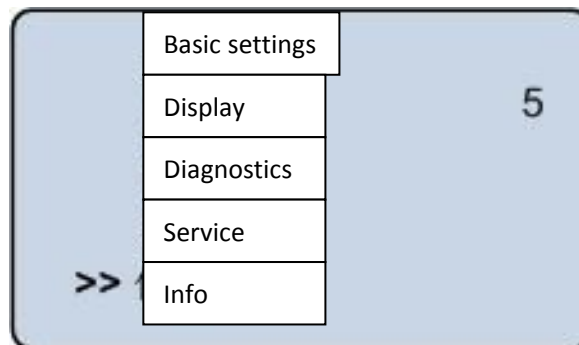
4.10 Threshold Setting

Threshold setting can setup the threshold magnitude of effective echo. The greater of the threshold setup, stronger of the effective echo amplitude on site is required, and then it's more beneficial to eliminate small signal noise interference. But must pay attention to: if the modified threshold is greater than the effective echo amplitude, it will cause the result of misunderstanding wave. This menu contains echo threshold and envelope level, the default range of echo threshold is 60mV, and the default range of envelope level is 10mV.



5. Info

Info menu contains all the basic information of the instrument production, such as Serial NO., production date, software version, etc. When the LCD displays main menu, press  key to move the arrow to information item, the LCD displays as following



Press OK key to choose information display function.