MULR
Ultrasonic Level Sensors

MIAL® INSTRUMENTS PVT. LTD.
Measuring & Beyond

www.mialinstruments.com

MULR
Ultrasonic Level Sensors

Preface

- Thank you for purchasing our product.

- This manual is about the various functions of the product, wiring methods, setting methods, operating methods, troubleshooting methods, etc.

- Please read this manual carefully before operation, use this product correctly to avoid unnecessary losses due to incorrect operation.

- After you finish reading, please keep it in a place where it can be easily accessed at any time for reference during operation.

NOTE!

Modification of this manual's contents will not be notified as a result of some factors, such as function upgrading. We try our best to guarantee that the manual content is accurate, if you find something wrong or incorrect, please contact us. The content of this manual is strictly prohibited from reprinting or copying.

About this manual

- Please submit this manual to the operator for reading.

- Please read the operation manual carefully before applying the instrument. On the precondition of full understanding.

- This manual only describes the functions of the product. The MIAL Instruments pvt.ltd. Does not guarantee that the product will be suitable for a particular use by the user.

Warnings and symbols used

HAZARD!
If not taken with appropriate precautions, will result in serious personal injury, product damage or major property damage.

WARNING!
Pay special attention to the important information linked to product or particular part in the operation Manual

CAUTION!
Disregarding these instructions can result in damage to the device or to parts of the operator's plant.

INFORMATION!
These instructions contain important information for the handling of the device.

Table of Contents

1. INTRODUCTION

1.1 PURPOSE OF THE MANUAL

Overview:
Welcome to the user manual for the Mial MULR Ultrasonic Level Sensors. This comprehensive guide is designed to assist operators, maintenance personnel, and system integrators in understanding, installing, operating, and maintaining the Mial MULR Ultrasonic Level Sensors effectively.

Objectives:
Clarification of Functionality: This manual aims to provide a clear understanding of the principles and functionality of the Mial MULR Ultrasonic Level Sensors. Users will gain insights into its design, components, and how it precisely measures fluid flow.

Guidance for Installation:
Step-by-step instructions and considerations for proper installation are provided to ensure optimal performance. Safety precautions are emphasized to create a secure working environment.

Training and Familiarization:
Users will be guided through the features, controls, and indicators of the flow meter, facilitating efficient operation. This section aims to serve as a valuable training resource for users at various experience levels.

Maintenance and Troubleshooting Assistance:
Learn about routine maintenance procedures and effective troubleshooting techniques. This manual empowers users to address common issues and perform regular maintenance to enhance the longevity of the Mial MULR Ultrasonic Level Sensors.

Intended Audience:
This manual is intended for operators, maintenance personnel, and system integrators involved in the installation, operation, and maintenance of the Mial MULR Ultrasonic Level Sensors. It is suitable for both novice users seeking basic guidance and experienced professionals looking for specific details.

Important Notes:
Please read through the manual carefully, adhering to safety guidelines and following instructions precisely. If any uncertainties arise during the installation, operation, or maintenance processes, seek assistance from qualified personnel or our customer service / support team.

Reference to Other Documentation:
Refer to the accompanying technical specifications document for in-depth details about the Mial MULR Ultrasonic Level Sensors.. Additional resources can be found on our website.

Intended use

⚠️ *CAUTION!*
Responsibility for the use of the measuring devices with regard to suitability, intended use and corrosion resistance of the used materials against the measured fluid lies solely with the operator.

INFORMATION!
The manufacturer is not liable for any damage resulting from improper use or use for other than the intended purpose

INFORMATION!
As the product is updated constantly, there is no guarantee the product specification and installation is fully consistent with the latest products. The part change contains but not limited to the following sections

1.2 OPERATING PRINCIPLE

An ultrasonic level meter operates on the principle of sound wave reflection. It emits high-frequency ultrasonic pulses from a transducer towards the surface of the material being measured, such as a liquid or solid. These pulses travel through the air, hit the surface, and reflect back to the transducer. The device then calculates the time taken for the echo to return and, based on this time delay, determines the distance between the sensor and the material surface. By knowing the distance, the level of the material can be accurately measured.

Ultrasonic level meters are widely used for non-contact measurement and are suitable for various applications, including liquids, slurries, and bulk materials.
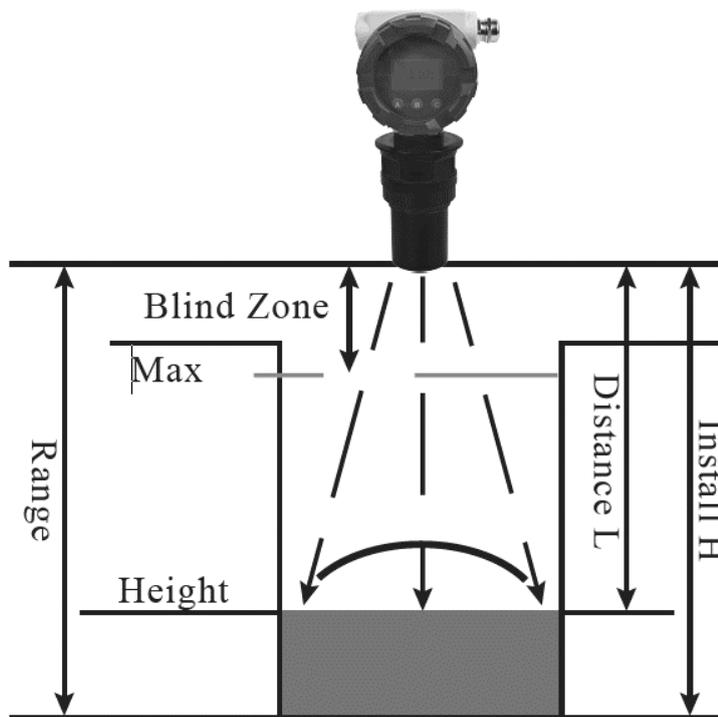
1.3 Technical specifications -AL

Operation and performance

Fluid types

Clean liquids

Level Range

0-4m,0-6m,0-8m,0-10 m

Accuracy

0.5% FS

Resolution

1mm

Measurement Parameters
Level, Temperature, Current O/P

Blind zone

40 cm

Display

LCD

Enclosures

Standard : :Aluminum

Optional :Aluminum Explosion-
proof

Power supply

24 VDC

Use 2-amp SMPS when employing AC power

Process Connection

Thread: BSP

Electrical Interface

M 20x1.5

Buttons:
3-digit Light Patch buttons

Operating Temperature

–20 – 60℃

Operating Humidity

0-95%RH

Standard output 4-20mA+RS485Modbus+2

Channel Relay

Probe Materials

Standard: ABS

Enclosure IP rating

IP65

Sensor IP rating

 IP68

*Specifications are subject to change without prior notice.

1.4 Technical **specifications** -ABS

Operation and performance

Fluid types

Clean liquids

Level Range

0-4m,0-6m,0-8m,0-10 m

Accuracy

0.5% FS

Resolution

1mm

Measurement Parameters
Level, Temperature, Current O/P

Blind zone

40 cm

Display

LCD (1.9-in)

Enclosures

ABS

Power supply

24 VDC

Use 2-amp SMPS when employing AC power

Process Connection

Thread: BSP

Electrical Interface

M16x1.5

Compliance

GB/T 38615-2020

Operating Temperature

-20 - 60°C

Operating Humidity

0-95%RH

Standard output

4-20mA+RS485 Modbus+Relay

Probe Materials

Standard: ABS

Enclosure IP rating

IP65

Sensor IP rating

IP68

*Specifications are subject to change without prior notic

2 DEVICE DESCRIPTION

2.1 SCOPE OF DELIVERY

(i) **INFORMATION!**
Do a check of the packing list to make sure that you have all the elements given in the order

(i) **INFORMATION!**
Inspect the packaging carefully for damages or signs of rough handling. Report damage to the carrier and to the local office of the manufacturer.

2.2 NAMEPLATE OF THE METER

Ultrasonic Level Meter
Model: MULR-XM
Accuracy : 0.5%
Serial No:_____
Power : 24VDC
Signal Output : 4-20mA
Measuring Range :XM
Protection Class : IP68
Explosion Proof Mark : Ex d IIC T6 Gb
MIAL INSTRUMENTS PVT LTD

Ultrasonic Level Meter
Model: MULR-XM
Accuracy : 0.5%
Serial No:_____
Power : 24VDC
Signal Output : 4-20mA
Measuring Range :XM
Protection Class : IP66
MIAL INSTRUMENTS PVT LTD

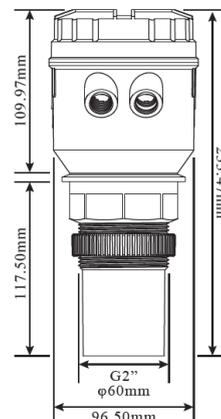**EXPLOSION PROOF**   **NON EXPLOSION PROOF**

2.3 DIMENSION FOR MULR LEVEL SENSOR
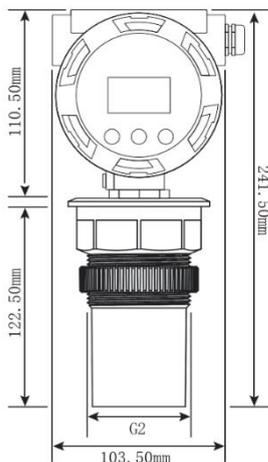
ALUMINUM MODEL   **ABS MODEL**

3. INSTALLATION

3.1 INSTALLATION & PRECAUTIONS

The probe generates ultrasonic pulse wave and detection echo simultaneously, and the ultrasonic pulse wave propagates out from the surface of the probe with a certain conical wavefront. In this area, there should not be any obstruction and away from the inlet. The probe should be mounted in a position where there are no obstructions between the transmitting surface of the probe and the medium to be measured. See Figure I.

The shape of the vessel must be taken into account when mounting the probe. If the probe is not installed correctly, a vessel of a certain shape will produce secondary echoes. This type of problem is mainly concentrated in conical shapes as well as on top of spherical tanks. This particular shape can refocus and amplify the emitted echoes to produce false readings.
This problem can be solved by choosing the correct mounting position. See Figure II.
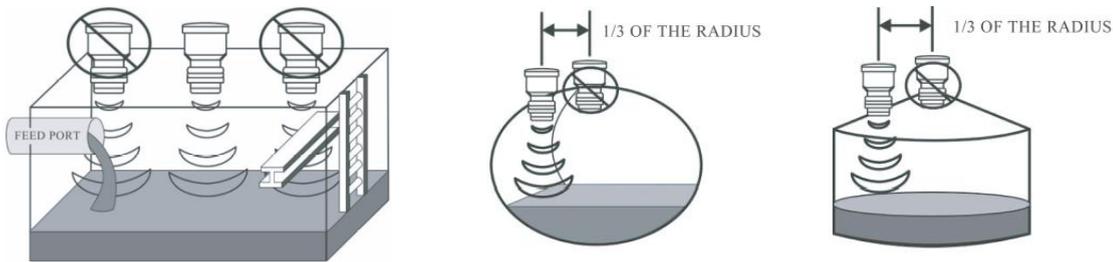
Figure I

Figure II
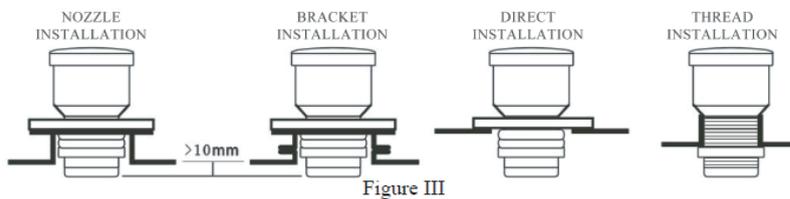
Figure III

The probe should be mounted so that its emitted acoustic channel remains within the desired area from the vessel wall as shown in Figure IV. Figure 4 shows the range and the probe installation distance from the vessel wall area, if the installation distance is less than the ideal area of the distance specified in the lower line, then the probe should be installed in the "minimum spacing" area. If the installation distance from the side wall is still below the "mini- mum distance" line, the transmitter may not be able to measure the level correctly. See Figure IV.

Figure IV

In solids measurement the probe is typically mounted 1/3 of the vessel wall from the side wall to the center inlet . A cone will be formed as the material builds up. The probe mounting positions shown in Figures V and VI will give an average level reading , which is the height of the level when the material is stacked flat. This is true for a tapered pile or a concave pile surface that occurs when the material is unloaded . The avera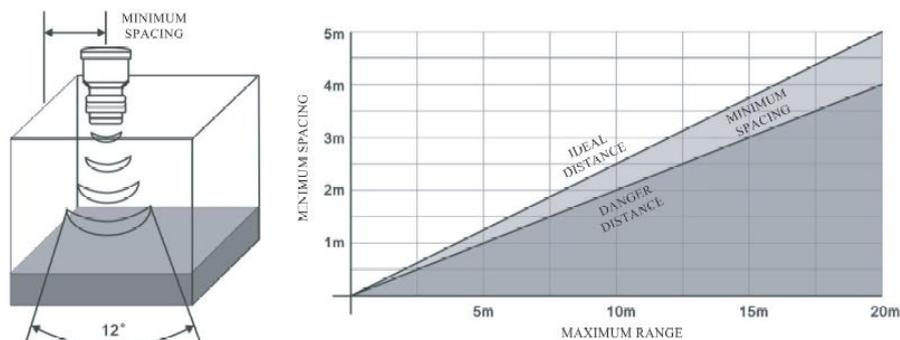ge level height measured by this installation is only correct for cylindrical vessels with the inlet at the centerline of the vessel. For other vessel shapes or where the inlet is not centered, the probe should be mounted accord- ing to the user's specifications and should comply with the preceding requirements.

Ultrasonic measurements are most effective when the surface of the liquid is calm and undisturbed. If the surface of the liquid has debris, bubbles or large fluctuations, the wave guide tube should be added. The waveguide tube should be larger than 120mm in diameter and have no joints. See Figure VII
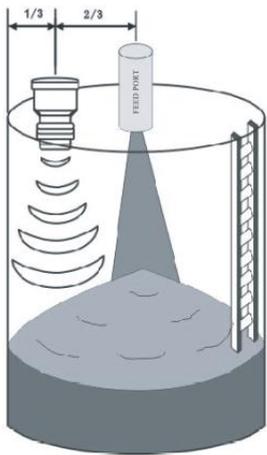
Figure V Solid Material   Figure VI Conical Discharge   Figure VII Liquid Material
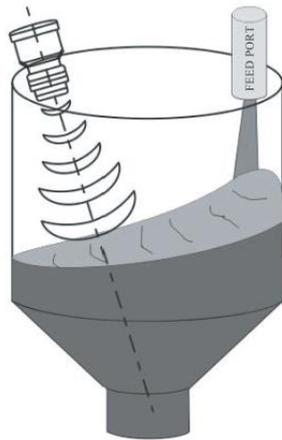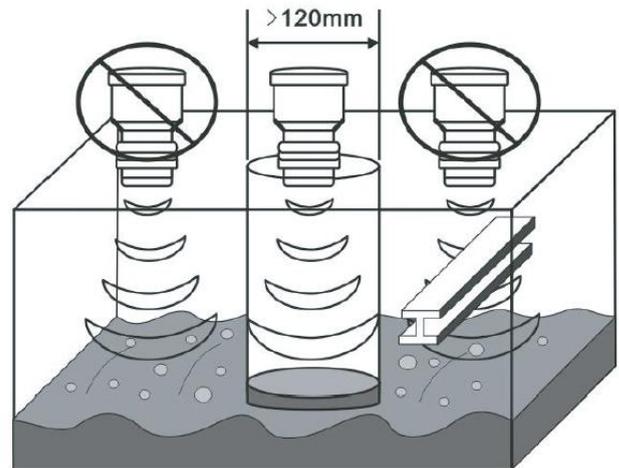
4   ELECTRICAL CONNECTIONS

4.1 SAFETY INSTRUCTIONS

DANGER!
Only when power is switched off, can we do all the work about electrical connections. Please pay all attention to the power supply on the name plate!

DANGER!
Observe the national regulations for electrical installations!

DANGER!
For devices used in hazardous areas, additional safety notes apply; please refer to the Ex documentation.

WARNING!
Observe without fail the local occupational health and safety regulations. Any work done on the electrical components of the measuring device may only be carried out by properly trained specialists.

INFORMATION!
Look at the device nameplate to ensure that the device is delivered according to your order. Check for the correct supply voltage printed on the nameplate.

INFORMATION!
Connect the cable on connector with similar numeral marking

4.2 WIRING

4.2.1 OUTPUT ACTIVE
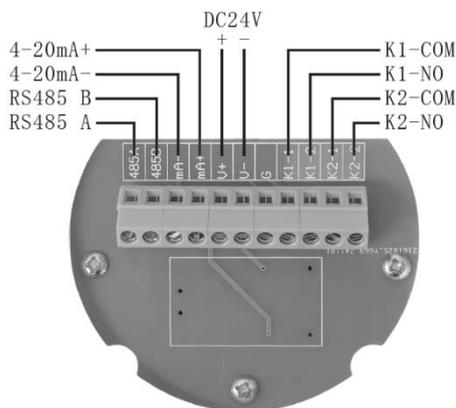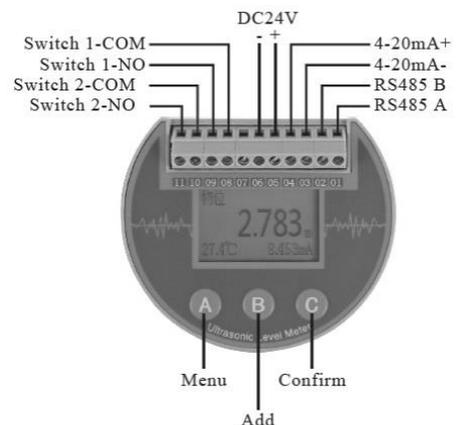
ALUMINUM MODEL   **ABS MODEL**

4.2.2 MULR ULTRASONIC LEVEL METER WIRING DIAGRAM (ALUMINUM MODEL)
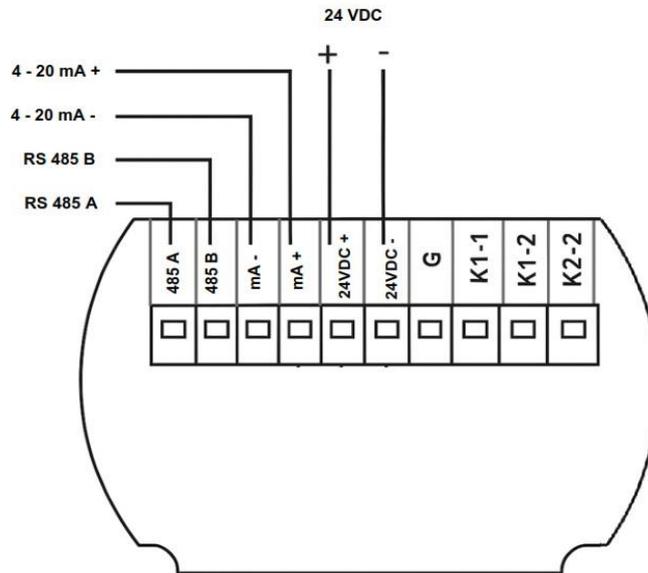
4.2.3 MULR MODBUS CONFIGURATION DETAILS OF LEVEL METER TO BMS

Function Code	Details	Register Address	Modbus Register	Register Type
03: Holding Register	Measured Value	01	40001	Swapped Floating Point

```
Parity         : None
Word Length : 8
Stop Bit        1
```

Note: If your BMS register address starts from '0', please decrement '1' value from every register. Example: Flow rate register is 40000 then it should be configured as 40001.

4.2.4 MULR ULTRASONIC LEVEL METER WIRING DIAGRAM (ABS MODEL)
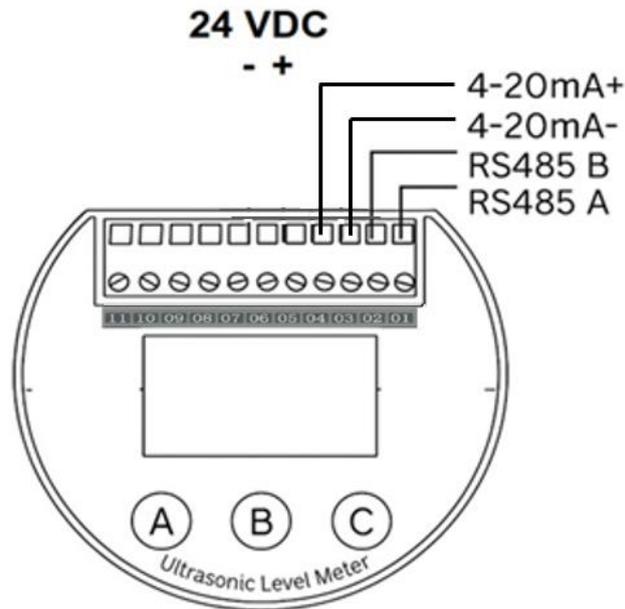
4.2.5 MULR MODBUS CONFIGURATION DETAILS OF LEVEL METER TO BMS

Function Code	Details	Register Address	Modbus Register	Register Type
03: Holding Register	Measured Value	01	40001	Swapped Floating Point

```
Parity        : None
Word Length : 8
Stop Bit        1
```

Note: If your BMS register address starts from '0', please decrement '1' value from every register. Example: Flow rate register is 40000 then it should be configured as 40001.

5. OPERATIONS

5.1 FUNCTIONS

The factory default password is 00000, please keep it in mind if you change it.

MOUNTING	MountHeight	Distance from the bottom plane of the probe to the bottom of the water, unit m.	
	LevelVal	After the probe is fixed, input the actual liquid level height in m.	
	Environment	OPEN/CLOSE	
OUTPUT	MODBUS SET	MODBUS ADDRESS	default 1
		BaudRate	default 9600
		Check	default N/8/1
	RELAY SET	Channel 1 On/Open	
		Channel 1 Off/Close	
		Channel 2 On/Open	
		Channel 2 Off/Close	
	CURRENT TEST	4-20mA TEST	
	CURRENT RANGE	OUT LOW	To 4mA[default 00.000]
		OUT HIGH	To 20mA[default 10.000]
DISPLAY	Uint	null/m/cm/mm/yard/feet/inch[Default m]	
	Point	0/0.0/0.00/0.000/0.0000[Default 0.000]	
	Convert	Displays the magnification factor[Default 1]	
	Contrast	Display screen contrast ratio[Default 40]	
	Backlight Delay	Backlight on-screen time in s[Default 0]	
PROBE	Filtering	NONE/Rapidly/Fast/Nomal/Stable/Steam/Foam/Stir	
SYSTEM	User set	Modify menu password[Default 00000]	
	Language	English	

5.2 MOUNTING MENU FUNCTIONS

The Mounting Menu allows the user to configure the installation parameters of the ultrasonic level sensor.
It contains three sub-menus:

Mounting Height

Level Value

Environment

5.2.1 MOUNTING HEIGHT

Description:
Set the distance between the bottom surface of the probe and the tank bottom.
Unit: meters (m)

Operation:

Press A to move the cursor to the digit you want to adjust.
Press B to change the value.
Press C to confirm the Mounting Height.

Save & Exit:
When prompted, press C for Yes to save settings.
Press A for No to return without saving.

5.2.2 LEVEL VALUE

Description:
Enter the actual liquid level height (in meters) after the sensor has been physically installed.
Unit: meters (m)

Operation:
Press A to shift the cursor from left to right.
Press B to modify the numerical value.
Press C to confirm the Level Value.

Save & Exit:
Press C for Yes to save.
Press A for No to cancel.

5.2.3 ENVIRONMENT

Description:
Select the installation environment type of the sensor.
OPEN → Open tank / open area with no obstruction
CLOSE → Closed tank environment

Operation:
Press B to toggle between OPEN and CLOSE.
Press C to confirm the selection.
Save & Exit:
Press C for Yes to save.

Press A for No to exit without saving.

5.3 MODBUS SET

The **Modbus Set** menu allows the user to configure communication parameters for RS-485 Modbus communication. These settings ensure proper integration with SCADA, PLC, BMS, or any Modbus RTU master device.

❖ MODBUS ADDRESS

Description:
Sets the device slave address on the Modbus RTU network.
Default: 1

Operation:
Scroll with B to select Modbus Address.
Press C to enter.
Use the cursor and value adjustment options (A & B) to set the desired address.
Press C to confirm.

❖ BAUD RATE

Description:
Sets the communication speed for Modbus RTU over RS-485.
Default: 9600 bps

Operation:
Use B to highlight BaudRate.
Press C to enter.
Scroll through available baud rates using B (e.g., 4800 / 9600 / 19200 / 38400).
Press C to confirm the selection.

❖ CHECK (DATA FORMAT)

Description:
Defines the Modbus RTU communication frame format.
Default: N/8/1
N = No Parity
8 = 8 Data Bits
1   = 1 Stop Bit

Operation:
Scroll to Check with B.
Press C to enter.
Use B to choose available formats (e.g., N/8/1, E/8/1, O/8/1).
Press C to confirm.

SAVE & EXIT

After any parameter change, the system will display:
Save & Exit?
Press C → Yes, save settings
Press A → No, exit without saving

5.4 RELAY SET MENU

The Relay Set Menu allows the user to configure the switching points for Relay Channel 1 (CH1) and Relay Channel 2 (CH2). These settings define when each relay will turn ON and OFF based on the measured level.

5.4.1 Relay Channel 1 (CH1)

CH1 ON
Description:
Set the level value at which Relay 1 will turn ON.

Operation:
Use B to select CH1 ON.
Press C to enter the setting.
Adjust the value as required (method same as other numeric inputs).
Press C to confirm.

CH1 OFF
Description:
Set the level value at which Relay 1 will turn OFF.

Operation:
Use B to scroll to CH1 OFF.
Press C to enter.
Modify the numeric value.
Press C to confirm.

5.4.2 Relay Channel 2 (CH2)

CH2 ON
Description:
Define the level at which Relay 2 will turn ON.

Operation:
Use B to select CH2 ON.
Press C to open the parameter.
Set the value as needed.
Press C to confirm.

CH2 OFF
Description:
Define the level at which Relay 2 will turn OFF.

Operation:
Use B to scroll to CH2 OFF.
Press C to enter.
Change the value.
Press C to confirm.
Save & Exit

After adjusting any relay parameter, the device will display the Save & Exit prompt.
Press C → Yes, save all changes
Press A → No, exit without saving

5.5 CURRENT TEST

The Current Test menu allows the user to manually output a fixed 4–20 mA signal for calibration and verification purposes.

5.5.1 4–20 MA TEST

Description:
Manually set the analog output to any value within the 4–20 mA range. This is typically used for commissioning, troubleshooting, and calibration.

Operation :
From the Output Menu, use B to scroll to Current Test.
Press C to enter.
The current output value will be displayed with a cursor under one digit.
Press A to move the cursor from left to right.
Press B to change the selected digit/value.
Press C to confirm the output value.
The device will immediately output the selected mA value.

SAVE & EXIT

After confirming the test value, the system will display:
Save & Exit?
Press C → Yes, save and exit
Press A → No, return without saving

5.5.2 CURRENT RANGE

The Current Range menu allows the user to set the minimum and maximum limits of the analog output signal. These limits define how the measured level is mapped to the 4–20 mA output.

5.5.3 OUT LOW

Description:
Sets the measurement value that corresponds to 4 mA.
Default Value: 00.000

Operation:
Use B to scroll to OUT LOW.
Press C to enter this setting.
Press A to move the cursor across the digits.
Press B to change the selected digit/value.
Press C to confirm.

5.3.4 OUT HIGH

Description:
Sets the measurement value that corresponds to 20 mA.
Default Value: 10.000

Operation:
Use B to select OUT HIGH from the list.
Press C to open the parameter.
Press A to move the cursor from left to right.
Press B to adjust the numeric value.
Press C to confirm.

SAVE & EXIT

After setting either OUT LOW or OUT HIGH, the device will show:
Save & Exit?
Press C → Yes, save the settings and exit
Press A → No, exit without saving

5.6 DISPLAY MENU

The **Display Menu** allows the user to adjust all visual settings related to the LCD screen and measurement presentation. This includes units, decimal precision, conversion factor, screen contrast, and backlight timing.

5.6.1 UNIT

Description:
Select the measurement unit to be displayed on the screen.
Available Units:
null / m / cm / mm / yard / feet / inch
Default: m

Operation:
Use **B** to highlight **Unit**.
Press **C** to enter.
Press **B** to scroll through the unit list.
Press **C** to confirm the selected unit.

SAVE & EXIT

After any change, the system will prompt:

SAVE & EXIT?

- C → Yes, save settings
- A → No, exit without saving

5.6.2 POINT (DECIMAL PRECISION)

Description:
Sets the number of decimal places displayed in the level reading.
Options: 0 / 0.0 / 0.00 / 0.000 / 0.0000
Default: 0.000

Operation:
Select Point using **B**, then press **C**.
Scroll through decimal formats using **B**.
Press **C** to confirm.

SAVE & EXIT

After any change, the system will prompt:
Save & Exit?
C → Yes, save settings
A → No, exit without saving

5.7 CONVERT (MAGNIFICATION FACTOR)

Description:
Displays and adjusts the measurement magnification factor.
Used when an external scaling or conversion ratio is required.
Default: *1*

Operation:
Use B to select Convert.
Press C to enter.
Press A to move cursor; use B to change values.
Press C to confirm.

SAVE & EXIT

After any change, the system will prompt:

Save & Exit?

C → Yes, save settings
A → No, exit without saving

5.8 CONTRAST

Description:
Adjusts the display screen contrast level for better visibility.

- **Default:** *40*

Operation:

1. Select **Contrast** using **B**.
2. Press **C** to enter.
3. Use **B** to set the desired contrast value.
4. Press **C** to confirm.

SAVE & EXIT

After any change, the system will prompt:

SAVE & EXIT?

C → Yes, save settings

A → No, exit without saving

5.9 BACKLIGHT DELAY

Description:
Sets the duration (in seconds) for how long the display backlight remains ON.

Default: *0* **(always ON)**

Operation:

Scroll to Backlight Delay with **B**.
Press **C** to open the setting.
Use **B** to adjust the value.
Press **C** to confirm.

SAVE & EXIT

After any change, the system will prompt:

Save & Exit?

C → Yes, save settings

A → No, exit without saving

5.10 PROBE MENU

The Probe Menu provides settings that optimize the ultrasonic sensor's performance based on the environmental and process conditions. This helps improve measurement stability and accuracy in different tank applications.

5.10.1 FILTERING

Description:
The Filtering function adjusts the internal signal processing behavior of the probe. Use this setting based on tank conditions such as turbulence, foam, steam, and response speed requirements.

Operation:

Select Filtering using B.
Press C to enter the filtering options.
Use B to scroll through the list of filtering modes.
Press C to confirm your selection.

SAVE & EXIT

After choosing a filtering mode, the system displays:

Save & Exit?

- Press **C** → Yes, save settings
- Press **A** → No, exit without saving

5.11 SYSTEM MENU

The **System Menu** contains settings related to user access and language selection. These options help customize the device interface and protect configuration menus using a password if required.

5.11.1 USER SET

Description:

Allows the user to modify the Menu Password, preventing unauthorized access to configuration settings.
Menu Password
Default: 00000
Can be set to any 5-digit value.

Operation:

Use B to select User Set.
Press C to enter.
The password digits will appear with a cursor beneath one digit.
Press A to move the cursor from left to right.
Press B to change the highlighted digit (0–9).
Press C to confirm the new password.

SAVE & EXIT

After confirming:
Press **C** → Yes, save settings
Press **A** → No, exit without saving

5.11.2 LANGUAGE

Description:
Changes the display language of the device interface.

Operation:

Use B to scroll to Language.
Press C to enter the language selection menu.
Press B to scroll through available languages.
Press C to confirm the selected language.

SAVE & EXIT

After selecting:
Press C → Yes, save settings
Press A → No, exit without saving

APPENDIX 1 : SOUND VELOCITY IN WATER (1 ATM) AT DIFFERENT TEMPERATURES

MODBUS RTU REGISTER ADDRESS

Add	Type	Name	Description	Address
0000, 0001	Float	Measured Value		40001
0004, 0005	Float	Supply Voltage		40005
0010, 0011	Float	Mounting Height		40011
0014, 0015	Float	Environmental Settings	1-Open/2-Close	40015
0016, 0017	Float	Output Start Point	0.000	40017
0018, 0019	Float	Output End Point	10.000	40019
0020, 0021	Float	Address		40021
0022, 0023	Float	Baud Rate		40023
0024, 0025	Float	Calibration Method	0-N81/1-081/2-E81	40025
0028, 0029	Float	Channel 1 On/Open		40029
0030, 0031	Float	Channel 1 Off/Close		40031
0032, 0033	Float	Channel 2 On/Open		40033
0034, 0035	Float	Channel 2 Off/Close		40035
0044, 0045	Float	Display Unit	1-m	40045
0046, 0047	Float	Reserved Decimal	3-0.000	40047
0048, 0049	Float	Display Conversion	1	40049
0050, 0051	Float	Contrast	40	40051
0052, 0053	Float	Backlight Delay	0	40053
0070, 0071	Float	Filtering	3-Normal	40071
0084, 0085	Float	Modify Password		40085
0094, 0095	Float	Language	English	40095

APPENDIX 2 : RELAY SETTING & COMMUNICATION

❖ RELAY SETTING

There are two relay outputs in this machine, when using it, you need to set the switch control logic points, i.e. D value and H value. D value is the switch start point and H value is the switch stop point. The operating mode is shown below (assuming the display value is X):

When the set D value is less than the H value:

X is less than D value switch start	D	D < X < H	H	X greater than H value switch off

When the set D value is greater than the H value:

X is greater than D value switch activated	D	D > X > H	H	X less than H value switch off

❖ COMMUNICATION

RTU COMMUNICATION MODE

The instrument adopts RS485 master-slave half-duplex communication, in which the host calls the slave address and the slave answers.

Default communication address 1, baud rate 9600, parity bit N, data bit 8, stop bit 1.

FUNCTION CODE 03H, READ REGISTERS HOST SENDS:

1	2	3	4	5	6	7	8
ADR	03H	Start register H	Start register L	Number of registers H	Number of registers L	CRC L	CRC H

Slave return:

1	2	3	4/5	6/7		M−1/M	M+1	M+2
ADR	03H	Total number of bytes	Register Data 1	Register Data 2	• •	Register Data M	CRC L	CRC H

Receive error, slave return:

1	2	3	4	5
ADR	90H	Error code	CRC L	CRC H

FUNCTION CODE 10H, WRITE MULTIPLE REGISTERS HOST SENDS:

1	2	3	4	5	6	7	8/9	10/11	N/N+1	N+2	N+3
ADR	10H	Start register H	Start register L	Number of registers H	Number of registers L	Total number of bytes	Register Data 1	Register Data 2	Register Data M	CRC L	CRC H

Slave return:

1	2	3	4	5	6	7	8
ADR	10H	Start register H	Start register L	Number of registers H	Number of registers L	CRC L	CRC H

Receive error, slave return:

1	2	3	4	5
ADR	90H	Error code	CRC L	CRC H

Examples
Read the liquid level value:

Read display value	01 03 00 00 00 02 C4 0B

Modify parameters:

Setting installation height 3 meters	01 10 00 0A 00 02 04 40 40 00 00 67 C4
Set the starting point of output as 0	01 10 00 10 00 02 04 00 00 00 00 F2 A3
Set the output end point as 5	01 10 00 12 00 02 04 40 A0 00 00 66 98

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