Edition 2026

Ultrasonic Level Meter

Installation Manual

(including echo display, historical curve and other functions)

V3.16

Contents

Welcome

Sincerely thank you for buying ultrasonic level meter of this company!

Production and operation basis of this product is JJG 971-2002 “Verification Regulation of the Liquid Level Measuring Devices”.

This manual introduces the application, feature, function, installation and setup of ultrasonic level meter, so users can know, install, use and maintain this instrument.

Application

Maximum measurement range

Range / Measurement medium	Maximum measurement range			
Liquid and fluid	5m	10m	15m	20m
High temperature, with water vapor	3m	6m	9m	12m
Solid with granule >4mm	2m	4m	6m	8m

Note: The maximum measuring distance of the ultrasonic level meter is affected by operating conditions. The data in the above table are for reference only.

Feature

- Display the sludge level, distance, echo waveform and historical curve.
- Automatic detection of on-site electrical interference, and interference suppression.
- Internal integrated temperature sensor, and real-time temperature compensation for sound velocity.
- Provide the alarm current output to prevent the sludge level from entering the Dead Band or exceeding the measuring range.
- Have 4~20mA current simulation, level simulation, RS485 communication test, and other functions.
- Use the keys to carry out on-site parameter setting; implement the remote parameter setting through RS485.
- Choose to display the content in Chinese or English; select the use of meters or feet. (HART interface is optional.)

Technical Parameters

Type / Content	Two-wire system		Four-wire system		
	Integrated		Integrated		Split
Measuring Range	0~2m,0~5m, 0~10m, 0~15m, 0~20m				
Dead Band	0.15m~0.7m (Depend on the measuring range)				
Measuring Precision	±0.3%FS* (Standard conditions*)				
Resolution	1mm				
Beam Angle	Full angle 12°				
Frequency	40Khz±2KHz				
Supply Voltage	DC12V～36V / 22mA		DC12V～36V/80mA AC100V～240V/5W		
Analog Output	4~20mA loop current output, load < 400Ω		4~20mA current output, load < 500Ω		
Digital Output	HART 5.0 (optional)		RS485 / Modbus-RTU HART 5.0 (optional)		
Relay Output	None		2ways		4 ways
			Contact power: 3A 250VAC / 5A 30VDC		
Transducer Material	ABS	Aluminum alloy	ABS	Aluminum alloy	ABS
Probe Material	ABS / ETFE / PTFE				
Electrical Interface	PG9	M20×1.5	PG9	M20×1.5	PG11
Process Interface	G2 (Customize G1 1/2)				
Environmental Temperature	-30℃ ~ +70℃*				
Process Temperature	-40℃ ~ +80℃				
Waterproofing Grade	IP65	IP67	IP65	IP67	IP65 / IP68*
Explosion-proof grade	-	Yes*	-	Yes*	-
Process pressure	0.8~2bar / below 2000 meters altitude				

*FS: full scale.

*Standard condition: temperature 20℃±5℃, humidity 45%～75%, breezeless around, 1bar air.

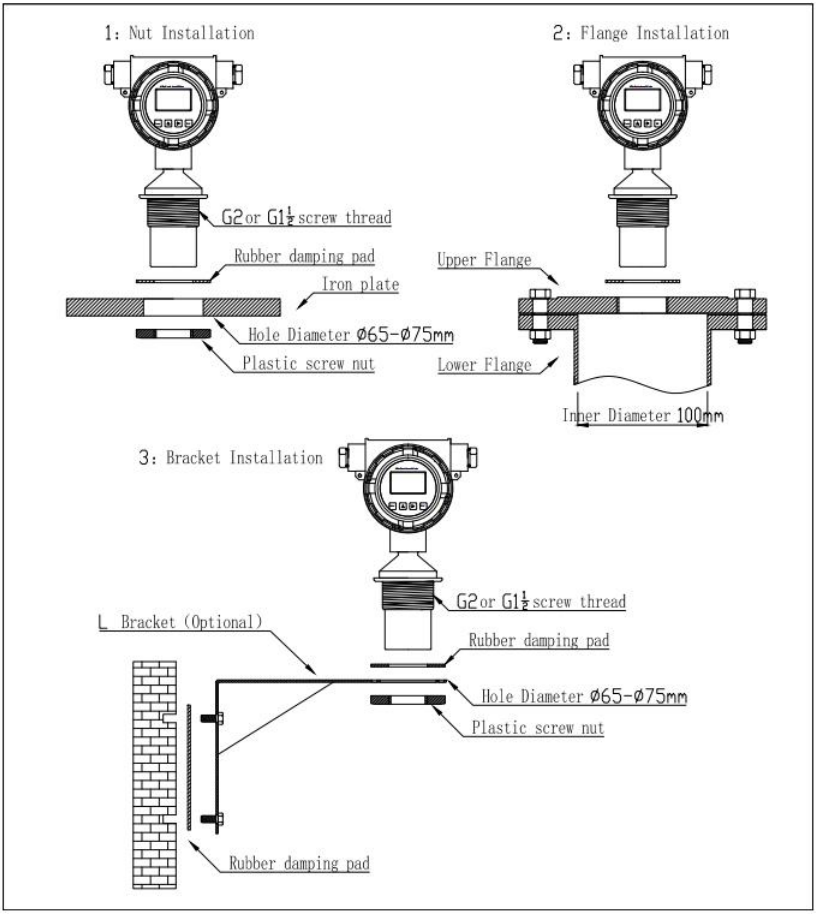
*The four-wire explosion-proof certificate is EX db ia[ia Ga] Ⅱ BT4 Gb; the two-wire explosion-proof certificate is EX db ia[ia Ga] Ⅱ BT6 Gb.

* LCD display will be restricted when the ambient temperature is lower than -20℃ or higher than 60℃. It is required to avoid direct sunlight on the LCD.

* The rear cover of the probe is filled with glue, and the waterproofing grade is IP68.

Installation Methods

The ultrasonic level meter involves three installation methods. Please reasonably select them according to the on-site conditions!

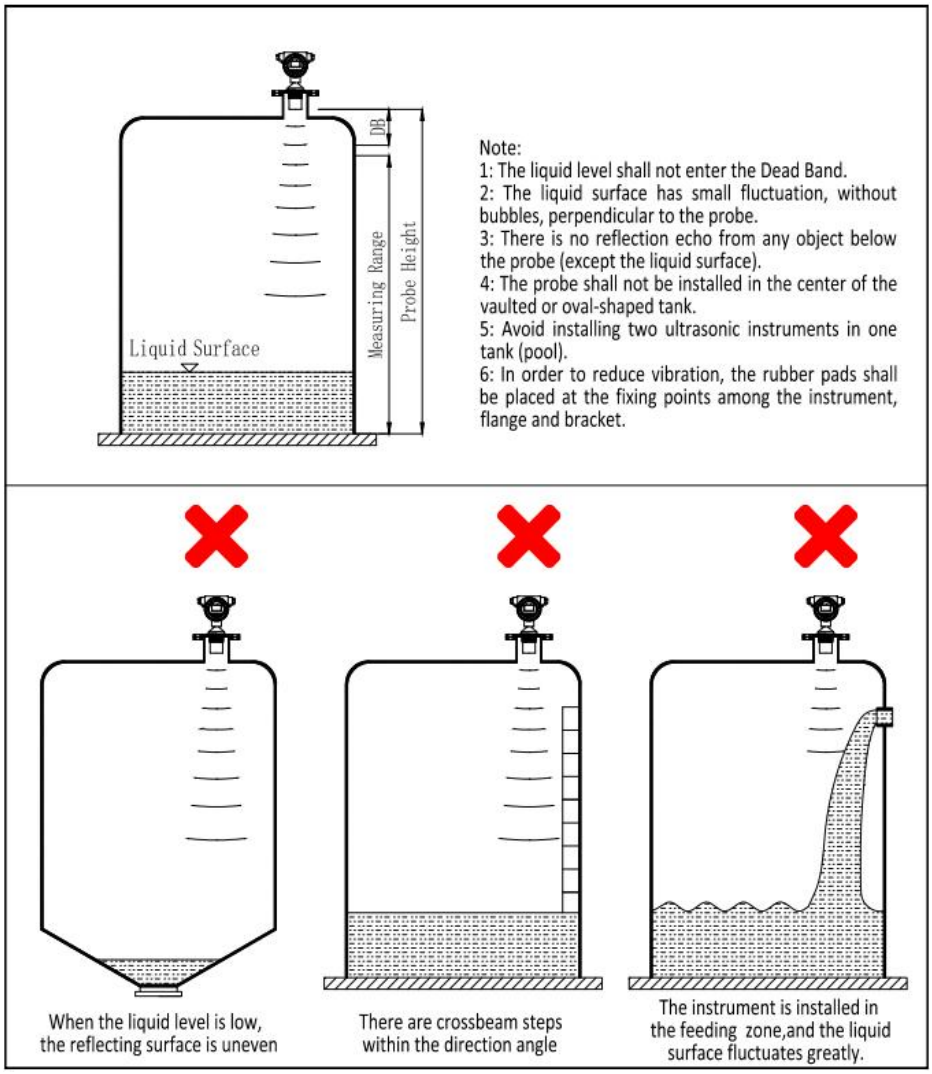


Note:

- The instrument is provided with plastic screw nuts. The flange with various specifications may be customized according to the user requirements.
- The recommended arm length of the bracket is 30~50 cm. The bracket shall be thick, and the vibration reduction measures shall be considered on the position where the bracket is fixed with the pool wall.
- The instrument and probe are in the humid environment for a long time. It is required to apply the glass cement to the line inlet & outlet of the probe, as well as the cover seam.

Installation Position

The reason why many ultrasonic level meters are not operated normally is that the installation location and operating conditions don't meet the requirements of the instrument. It is particularly important to choose the reasonable installation location for ultrasonic level meters.



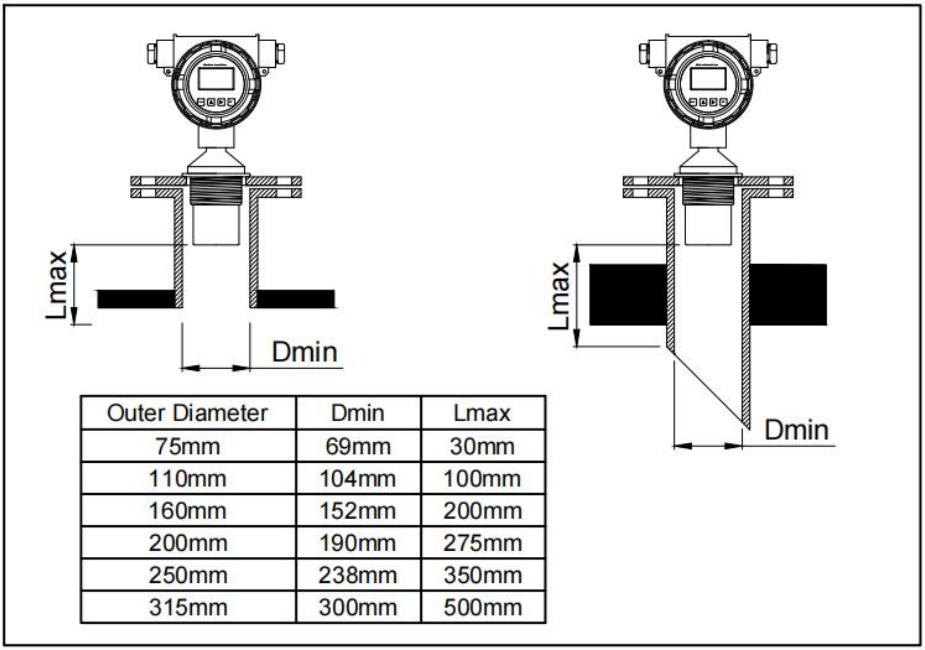
Note: The Dead Band varies with the measuring range of the instrument. The Dead Band of the instrument will be indicated on the label.

Installation Hole (Extension Tube) Requirements

The diameter and length of the installation hole shall meet the requirements in the figure below.

If the liquid level/material level can enter the Dead Band of the instrument, it is necessary to install an extension tube to raise installation height of the probe.

The diameter and length of the extension tube shall meet the requirements in the figure below.



Outer Diameter	Dmin	Lmax
75mm	69mm	30mm
110mm	104mm	100mm
160mm	152mm	200mm
200mm	190mm	275mm
250mm	238mm	350mm
315mm	300mm	500mm

Please determine the size of Lmax and Dmin according to the actual conditions.

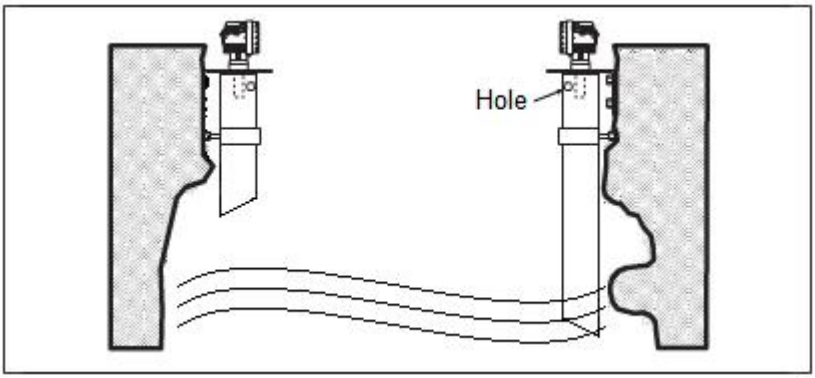
Note:

- The inner wall of the installation hole/extension tube shall be smooth (without welding seams or butt seams).
- The lower nozzle of the installation hole/extension tube shall be smooth, without burrs. It is better that the chamfering is 45°.

Waveguide Tube

When the instrument is installed under the following circumstances, it is recommended to use the PE or PVC tube with a diameter of over 100mm as the waveguide tube of ultrasound.

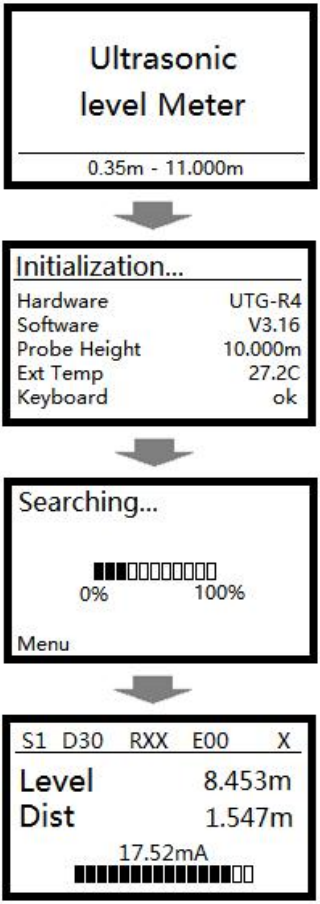
- The echo reflection of non-liquid surface appears on the site. For example, there are uneven tank walls, narrow vertical shafts, unavoidable steps, horizontal water pipes, stirring blades, etc.
- The liquid surface has weak reflecting capacity. For example, the liquid surface has a large amount of foam or floating objects, the water surface fluctuates violently, and the instrument is installed in the feeding zone.
- The transmission loss of sound wave is high. For example, there is a large amount of water vapor in the tank.



Note:

- There is a ventilation hole on the top, to ensure that the internal and external liquid levels of the tube are consistent.
- The inner wall of the waveguide tube shall be smooth (without welding seams or butt seams).
- The nozzle of the waveguide tube shall be smooth. It is better that the chamfering is 45°.
- When the waveguide tube is fixed, it is required to consider the vibration reduction measures, so as to prevent the existence of acoustic interference in the tube.
- In order to ensure that there is no material hanging on the inner wall of the waveguide tube, it is necessary to regularly clean/check the waveguide tube.
- In some rare cases, the installation of the waveguide tube may be failed. Please choose reasonably and use with caution.

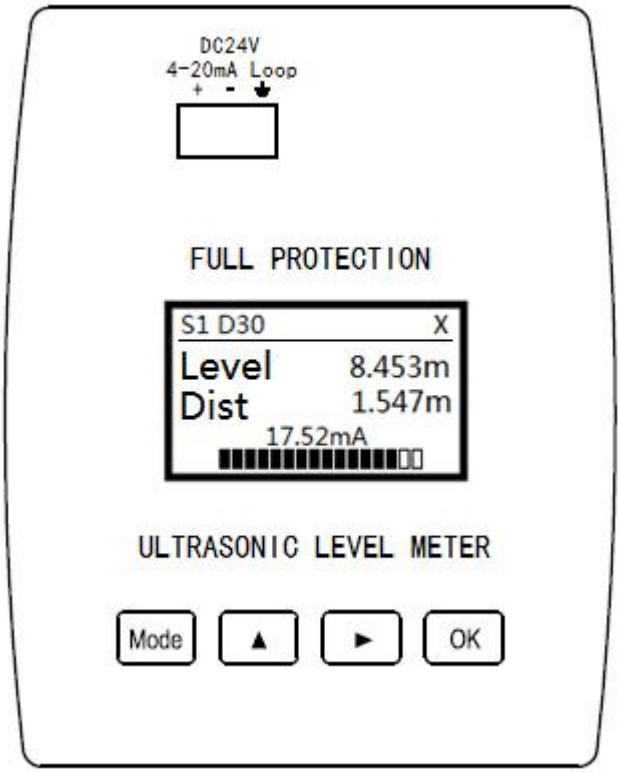
Start-up Display



Note:

- After the instrument is powered off, it shall be powered on for more than 5-10s; otherwise, the LCD display is prone to garbled characters or display inversion.
- The upper limit of the search progress bar depends on the transmit power of menu P44.
- If the keyboard is found to be error during the initialization, instrument will display which key is error. O indicates normal, x indicates errors.
- In case of keyboard error, the whole keyboard will be locked and no key responses when being pressed.

Key Description



Instrument Display/Operation Panel

[Mode] key
◇Enter the menu
◇quit the menu

[▲] key
◇Roll to the next menu
◇Modify the number at cursor/list selection
◇Under working condition, press this key for a long time, the instrument will switch display mode temporarily. 40 seconds after loosening this key, the instrument returns to previous display mode.

[OK] key
◇Enter editing
◇quit editing

[→] key
◇Move cursor
◇Roll to the previous menu
◇In echo display mode, the waveform can be enlarged.

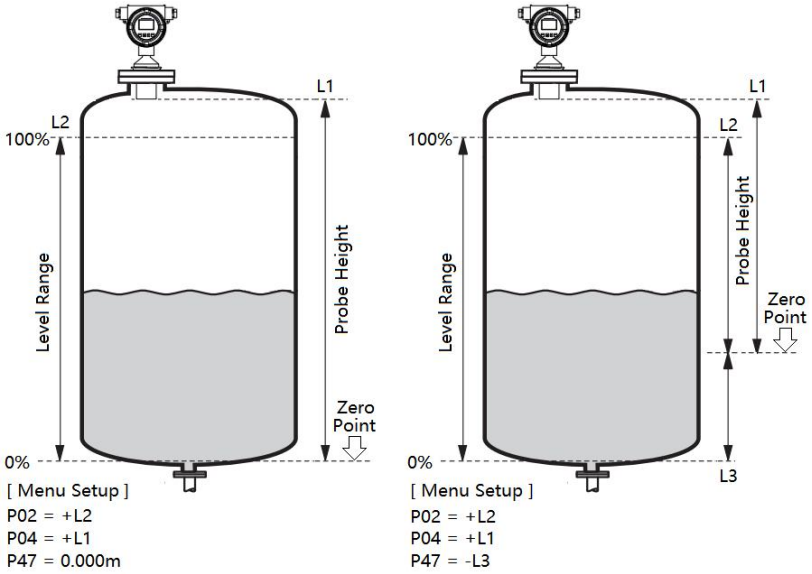
Basic parameters (the password is “1000”)

P02: 20mA setup

Menu	Input the distance between high point and zero point of measurement range	
Value	Value range	-20.000m～+20.000m
	Default value	10.000m
Relevant menu	P47, 4mA Setup	

The highest liquid level is above zero and the value is positive; The highest liquid level is below zero and the value is negative

Relation among probe height, maximum liquid level, minimum liquid level and zero point is shown in the figure below.



Note:

① The distance L1 between probe surface and zero point is the probe installation height.

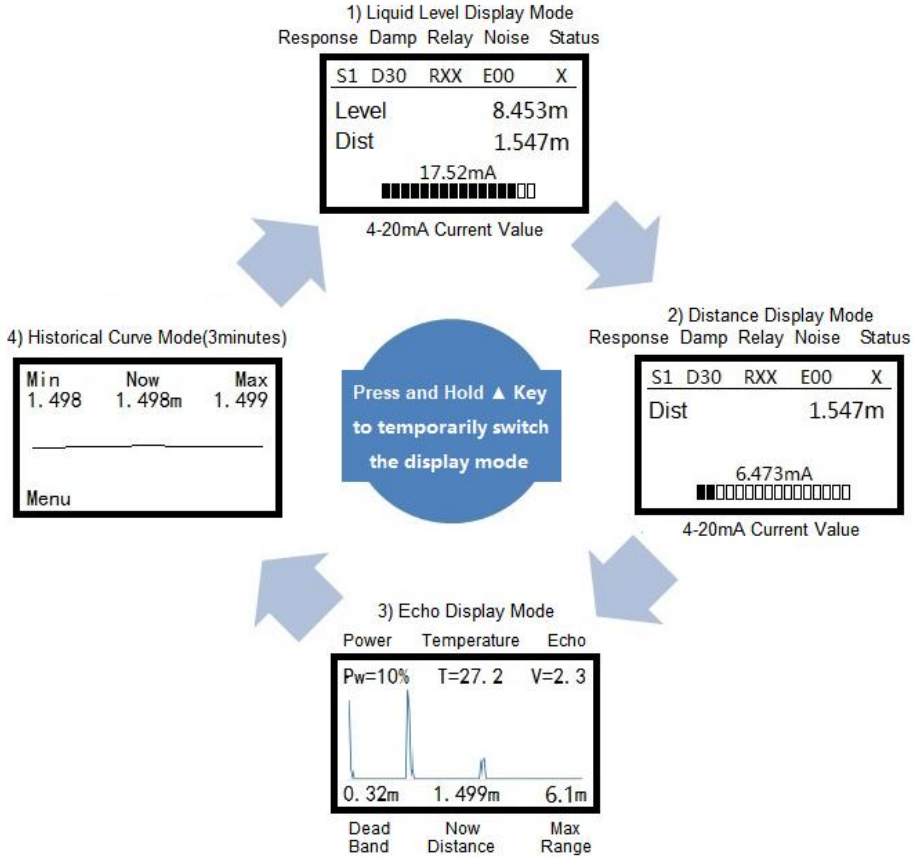
② Distance L2 between maximum liquid level and zero point;

③ Distance L3 between minimum liquid level and zero point;

④ If L1, L2 and L3 are above zero point, the values are positive; if L1, L2 and L3 are below zero point, the values are negative.

P03: Display

	Menu Option	Display Content	4-20mA Output	Remark
Param	Level	Display level, Distance and current	Level	Default
	Distance	Display distance and current	Distance	
	Echo	Display echo waveform	Level	
	History	Display historical distance curve	Level	



Note:

- Press and hold ▲ key to temporarily switch the display mode.
- Release ▲ key; after 40s, return to the original display mode.
- Temporarily switch the display mode, and do not affect 4-20mA output.
- In the echo display mode, press ► key to enlarge the waveform.

Description:

- "S" is the reaction rate, followed by the values 0～3 indicating fast, normal, slow and slowest reaction rate.
- "D" is the damping time, followed by the value indicating the number of seconds.
- "R" is the relay status, X indicates disconnection, and O indicates engagement (for four-wire system only).
- "E" is the noise voltage, followed by the value indicating the voltage height. For example, "05" indicates the noise voltage of 0.5V.
- X/O is the operating status. X indicates that the waves are being emitted. O indicates that the echo is received from the liquid surface reflection.

P04: Probe Height

Menu	P04: Input the distance between probe surface and zero point	
Value	Value range	-20.000m～+20.000m
	Default value	10.000m

When the probe level is higher than zero point, the value is positive; when the probe level is lower than zero point, the value is negative.

The relationship between probe height and zero point refers to P02 20mA Setup.

P05: Response

Menu	P05: properly select the Response according to rate of the liquid level/distance change		
Param	Fast	Fastest	Default
	Normal	Normal(with level change of no more than 10cm/ sec)	
	Slow	Slow (with level change of no more than 50cm/ min)	
	Slowest	Default	

Note:

- The response rate of the instrument should be higher than the liquid level Response.
- Instrument Response and damping time affect data stability of the instrument together.
- The slower the reaction, the greater the damping, the better the stability of the data, but the corresponding data changes is slow.

P06: Dead Band

Menu	P06: Inputhere the distance from the nozzle, step, and beam to the probe surface	
Numerical value	Value range	0~10.000m
	Default value	0.000m

Dead band: the instrument suppresses the echo within this range that will affect the normal measurement. By setting the dead band, the influence of the nozzle, steps and beams of the extension pipe on the instrument measurement can be suppressed.

Reminder: When the dead band is less than the nominal bland zone of the probe, the dead band is invalid. See the label on the instrument for the nominal bland zone.

Liquid level is prohibited from entering block dist. of the instrument!
The distance between liquid level and probe surface shall not be less than block dist.!
The manufacturer isn't responsible for accidents of abnormal instrument operation since liquid level enters block dist.!

P07: Language

Menu	P07		
Parameter	English		Default
	Chinese		

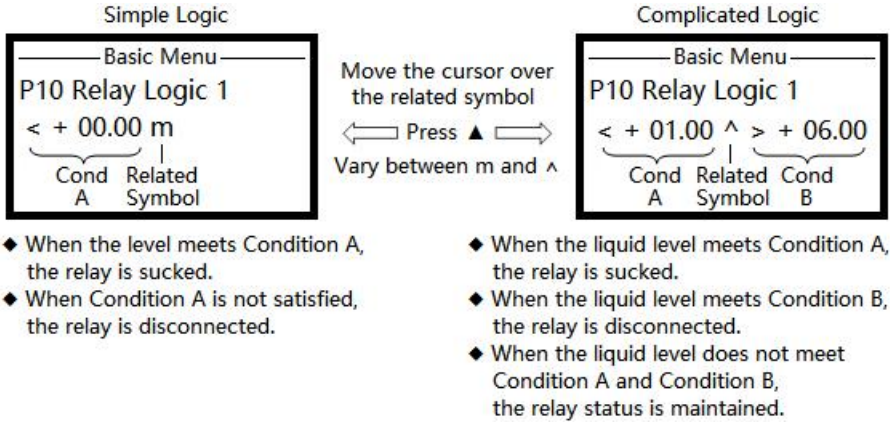
P08: Distance Unit

Menu	P08		
Parameter	Meter		Default
	Feet		

P10-P13: Relay Logic 1-4

Menu	P10-P13	
Parameter	Value range	-20.000m~+20.000m
	Default	<+0.00m
Relevant menu	P16 Relay Buffer	

The instrument has two types of relay control logics, including simple logic (one logic) and complicated logic (two logics), as shown in the figure below:



For example (It is assumed that the relay bufferP16 is 0.030m):

Example 1: "> +03.00 m" indicates that, the relay is sucked when the liquid level is more than 3.00m, and the relay is disconnected when the liquid level is less than 2.97m.

Example 2: "< +02.00 m" indicates that, the relay is sucked when the liquid level is less than 2.00m, and the relay is disconnected when the liquid level is more than 2.03m.

Example 3:"> 06.00 ^ < 01.00" liquid level is greater than six meters to open the drainage pumps, pump shut down if liquid level less than one meter.

Example 4:"< +01.00 > ^ +06.00" level was reduced to 1.00m after the relay, the liquid level rises to release relay 6.00m. Water inlet well.

P16：Relay Buffer

In order to reduce the critical level of the relay, the relay often have to wait until the level of the liquid level exceeds / below the logical value of a certain amount of action, which is the relay buffer.

menu	parameter	0.000m～1.000m
	Default	0.030m
Related menu	P10-P13 relay 1-4 logic	

Advanced Parameters

To enter advanced parameter menu, the password is "0101".

Setting of advanced parameters shall be guided by the manufacturer!

P40: Damping Time

Menu	P40	
Value	Value range	0～30s
	Default value	12s

The less the damping is, the quicker the instrument response speed becomes; the more the damping is, the more stable the data becomes. Please choose this parameter reasonably.

P41: Alarm Output

Menu	P41		
Parameter	22mA	During alarm, current output is 22mA	
	3.8mA	During alarm, current output is 3.8mA	
	Hold	No alarm	Default
Relevant menu	P02: 20mA Setup P42: Alarm Time P47: 4mA Setup P48: Safety Dist.		

- In case of fault, when the fault delay counter terminates, the instrument can report the fault to PLC/DCS through 4-20mA current.
- When the liquid level/distance exceeds the P02 set value (10cm), the instrument outputs the alarm through 4-20mA, and displays "Level/Dist higher 20mA set".
- When the liquid level/distance is lower than the P47 set value (10cm), the instrument outputs the alarm through 4-20mA, and displays "Level/Dist lower 4mA setup".
- When the liquid level enters the safe distance, the instrument outputs the alarm through 4-20mA, and displays "Level/Dist enter Safe-Dist".
- When the instrument searches for a long time, it forcibly outputs 3.8mA current to give an alarm, and displays "No Echo".
- Disabling the alarm output increases the risk of tank overflow. It is recommended to enable the alarm output.

P42: Alarm Delay

Menu	P42	
Value	Value range	0～400s
	Default value	5s
Relevant menu	*P41: Alarm Output*	

When fault delay counter terminates, the instrument will report the fault to PLC through 4~20mA current.

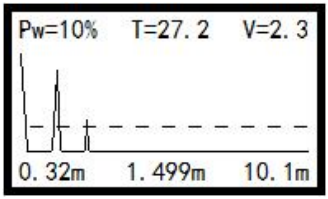
P43: Threshold Voltage

If instrument earthing cannot solve interference, set a threshold voltage to increase its immunity from interference.

Menu	P43		
Parameter	0.3v	Ignore echo below 0.3v	Default
	0.6v	Ignore echo below 0.6v	
	0.9v	Ignore echo below 0.9v	
	1.2v	Ignore echo below 1.2v	
	1.5v	Ignore echo below 1.5v	

Note:

- Dotted line in the right figure is threshold voltage.
- When threshold voltage is 0.3v, dotted line won't appear.
- Increase of threshold voltage will reduce instrument sensitivity.



P44: Output Power

Menu	P44		
Parameter	0～30%	Output power changes between 0～30%	
	0～60%	Output power changes between 0～60%	
	0～100%	Output power changes between 0～100%	Default
	100%	Output power is always 100%	

The less output power is, the smaller the block dist. and measurement range become. The more output power is, the more larger the block dist. and measurement range become.

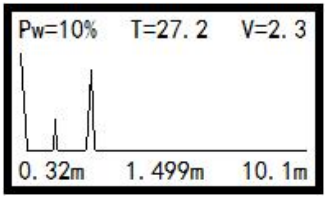
P45: First Echo Coefficient

Value	Value range	0.0～5.0 times
	Default value	×1.0 time

Ultrasonic level meter shall not be installed in the center of dome roof tank. If it is unavoidable, use this menu; try to make the instrument work normally.

There are 2 echoes as shown in the right figure.

If it is confirmed that the first echo is liquid reflection echo, rather than orifice echo, try to increase first wave coefficient,



P46: Velocity

When the instrument is used in places where gasoline, alcohol and acetone are volatile, since transmission speed of ultrasonic wave is not 331m/s in these gas, it is necessary to modify velocity, in order to measure the distance and material level accurately.

Menu	P47	
Value	Value range	200～400m/s
	Default value	331m/s

velocity of ordinary gas:

Gas name	velocity m/s	Gas name	velocity m/s	Gas name	velocity m/s
Air	331	Helium	384	Alcohol	300*
Carbon dioxide	286	Gasoline	260*	Ammonia gas	290*
Nitrogen	345	Crude oil	220*	Diesel oil	325*

*Note: concentration, air pressure and temperature affect velocity. velocity in the above form is only for your reference.

P47: 4mA Setup

Menu	P47: Input the distance between low point and zero point of measurement range	
Value	Value range	-20.000m～+20.000m
	Default value	0.000m

The value is positive value when low point is higher than zero point, and it is negative value when low point is lower than zero point.

Note:

- In most cases, the minimum liquid level is the tank bottom/pool bottom/zero point, so the default value is 0.000m.
- The relationship between minimum liquid level and zero point refers to P02 20mA Setup.

P48: Safety Distance

In order to prevent the liquid level from entering the dead band of the instrument, a safe distance is specially set outside the dead band.

Menu	P48	
Numerical value	Value range	0.000~5.000m
	Default value	0.000m

When the liquid level reaches the safety distance, the instrument gives an alarm through 4~20mA current. Please refer to P41 Alarm Output.

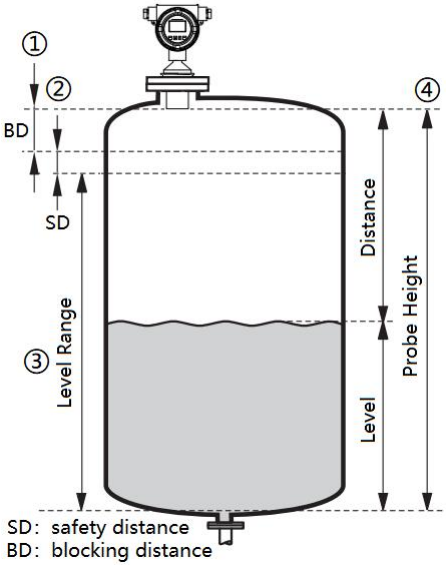
The right figure shows relative relation among Dead Band, safety distance and measurement range of liquid level.

① Blocking distance

② Safety distance

③ Measurement range of liquid level

④ Probe height



P49: Altitude

Menu	P49: Input the altitude of zero point	
Value	Value range	0～3000m
	Default value	0m

This parameter is only used for liquid level display, and doesn't affect distance and current output. It is unnecessary to consider this parameter during 4mA and 20mA setup.

P50: ID

Menu	P50	
Numerical value	Value range	HART：0 ~ 15# / RS485：1 ~ 99#
	Default value	HART：0# / RS485：1#

Note: According to the requirements of HART communication, when the address of the instrument is not equal to 0, the instrument fixedly outputs 4.000mA current, which is independent of the instrument's liquid level/distance.

P51: Baud

Parameters	1200Bd	Baud Rate of 1200Bd	
	2400Bd	Baud Rate of 2400Bd	
	4800Bd	Baud Rate of 4800Bd	Default
	9600Bd	Baud Rate of 9600Bd	
	19200Bd	Baud Rate of 19200Bd	

P52: Protocol

Menu	P52		
Parameters	ModBus-RTU	Meet ModBus standard RTU protocol	Default
	Reserved		

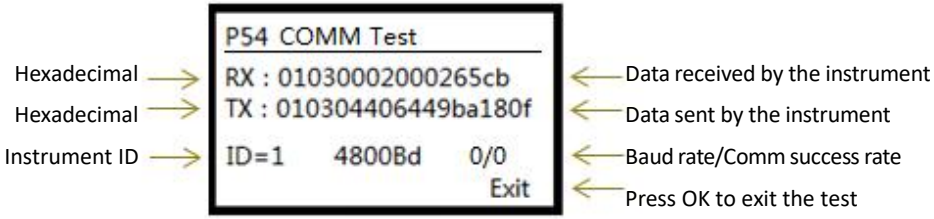
P53: Floating Order

Menu	Sequence of Floating-point Numbers		
Param	1234	The sequence of 4-byte floating-point numbers is 1234	Default
	4321	The sequence of 4-byte floating-point numbers is 4321	
	3412	The sequence of 4-byte floating-point numbers is 3412	
	2143	The sequence of 4-byte floating-point numbers is 2143	

Note the requirement of DCS / PLC for the sequence of 4-byte floating point numbers. The sequence of floating point numbers of the instrument and DCS / PLC should be the same.

P54: COMM Test (Four-wire System Only)

The menu displays the received upper computer data, as well as the data sent by the instrument, to assist the upper computer programmers in debugging communication.



Note: When RX data are not correct, the instrument does not upload the data, and it shows the error message at TX.

P60: Sim. Current

Menu	P60	
Parameter	4.000mA	Force the instrument to output 4.000mA current
	12.000mA	Force the instrument to output 12.000mA current
	20.000mA	Force the instrument to output 20.000mA current

Through this menu and ampere meter, inspect whether instrument current output is normal.

P61: Sim. Level

Parameter	0.000m	Sim. Level 0.000m	
	2.000m	Sim. Level 2.000m	
	4.000m	Sim. Level 4.000m	
	6.000m	Sim. Level 6.000m	
	8.000m	Sim. Level 8.000m	
	10.000m	Sim. Level 10.000m	

Through sim. level (current is output according to 4mA and 20mA setup), check whether 4mA and 20mA setup on data display instrument and PLC are consistent with the instrument.

P66：Temp Delay

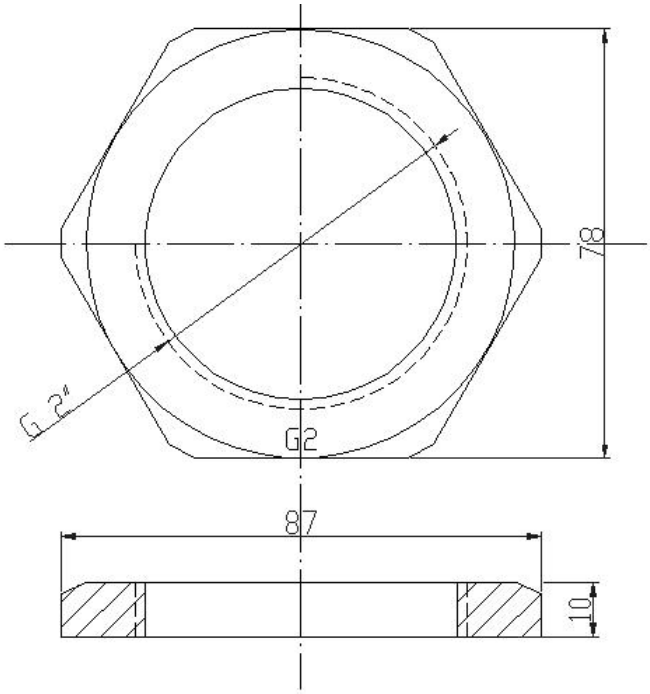
Parameter	12us	Probe cable less than 30 meters	Default
	18us	Probe cable less than30～60meters	
	24us	Probe cable less than60～100meters	
	30us	Probe cable less than100～150meters	

Cable length, wire diameter, temperature will affect the signal transmission delay time, the delay / cable length of the table is for reference only.

P99: Load Param

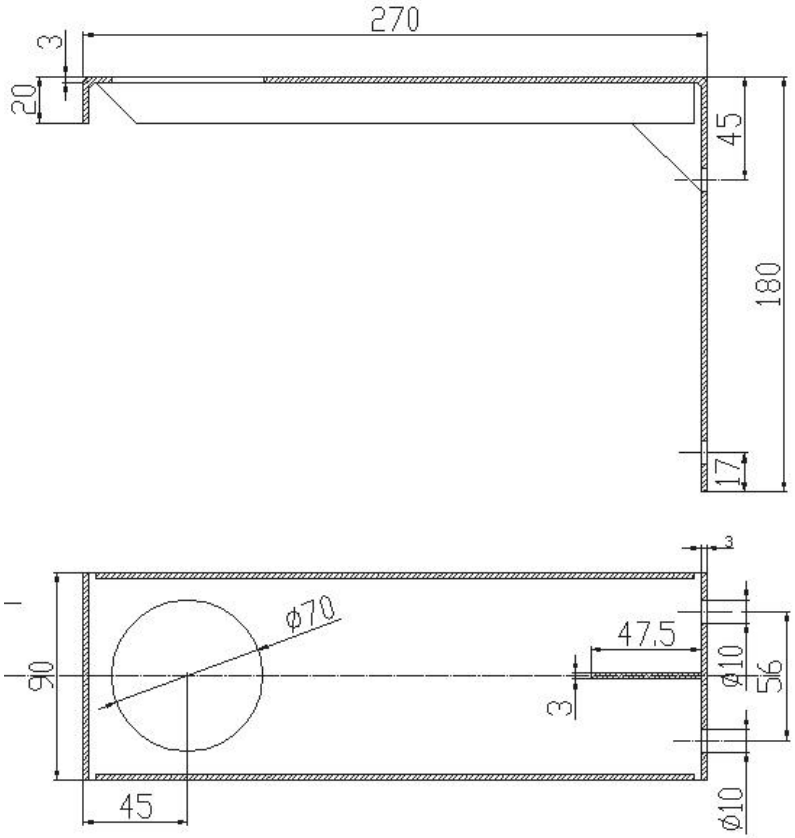
Parameter	No	Don’t restore	Default
	Yes	Restore factory defaults	

Appendix 1： Size of Plastic Screw Nut



Note: The screw nut is a standard accessory made of the same material as the probe.

Appendix 2： Size of Bracket



This bracket is an optional accessory and needs to be purchased separately.

Appendix 3：HART Order

This type of ultrasonic level meter supports the following HART5.0 agreement and orders:

Command 0	Read identification code
Command 1	Read main variable
Command 2	Read main variable current and percentage
Command 3	Read dynamic variable and main variable current
Command 6	Write HART ID
Command 11	Read labeled identification code
Command 12	Read information
Command 13	Read label, descriptor and date
Command 14	Read sensor information of main variable
Command 15	Read equipment information
Command 16	Read the final assembly number
Command 17	Write information
Command 18	Write label, descriptor and date
Command 19	Write the final assembly number
Command 33	Read transmitter variable
Command 34	Write damping value of main variable
Command 35	Write the upper limit and lower limit of measurement range of main variable
Command 36	Present value of main variable is set at the upper limit of measurement range of main variable
Command 37	Present value of main variable is set at the lower limit of measurement range of main variable
Command 40	Enter/quit fixed main variable current mode
Command 43	Present main variable of the equipment is set at zero point
Command 44	Define main variable unit
Command 45	Adjust DAC zero point of main variable current
Command 46	Adjust DAC gain of main variable current
Command 49	Write serial number of main variable sensor

Appendix 4: Modbus-RTU Communication Protocol

The register address of the instrument is shown in the following table. The liquid level, distance, temperature and electric current data respectively occupy 2 registers (4 bytes). The data adopts the IEEE754 floating-point number format.

The default setting of RS485 serial port: Baud Rate: 4,800, Stop Bit: 1, Parity Bit: N/A, ID No.: 01.

Set ID, baud and sequence of floating point number through the menu Provide the comm test menu, and display the data that are received/sent.

Register Address				
Addres	content	format		Uni
0000H	Relay Status			
0001H	hold			
0002H	Level	Float IEEE754	high 16bit	m
0003H			Low 16bit	
0004H	Distance	Float IEEE754	high 16bit	m
0005H			Low 16bit	
0006H	temperature	Float IEEE754	high 16bit	℃
0007H			Low 16bit	

E.g.: Get liquid level data from instrument ID=1.

The query data frames are

01H	03H	00H	02H	00H	02H	65H	CBH

No.1 level meter **Level value in Address 0002H** **Read 2 registers** **CRC16**

The response data frames are

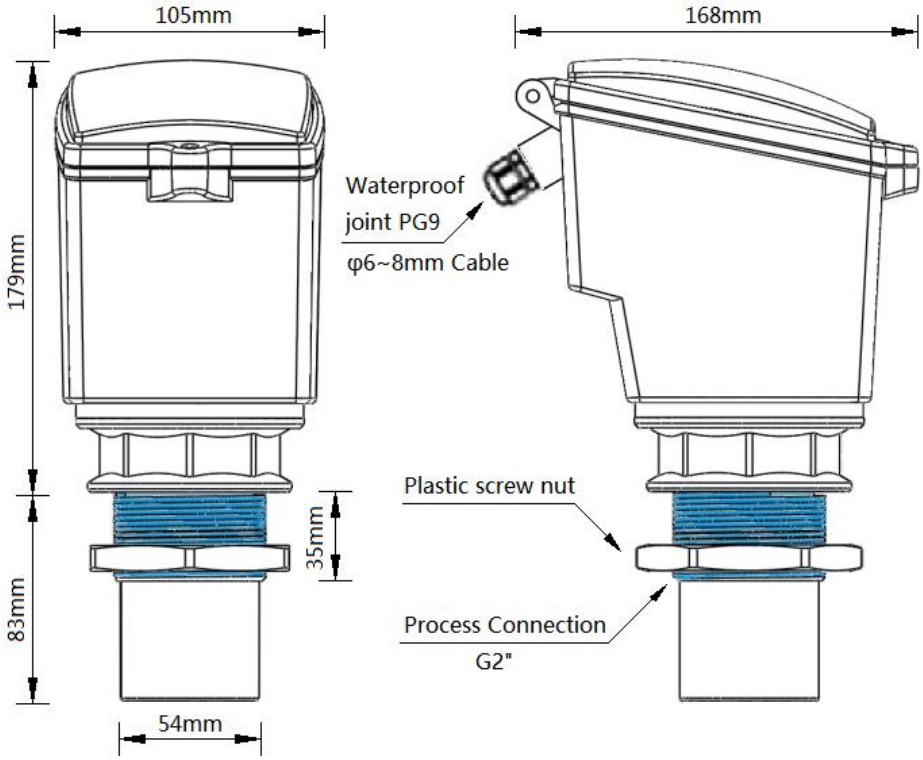
01H	03H	04H	40H	64H	49H	BAH	18H	0FH

No.1 level meter **4-byte liquid level data** **IEEE754 floating point number format of liquid level data** **CRC16**

Note:

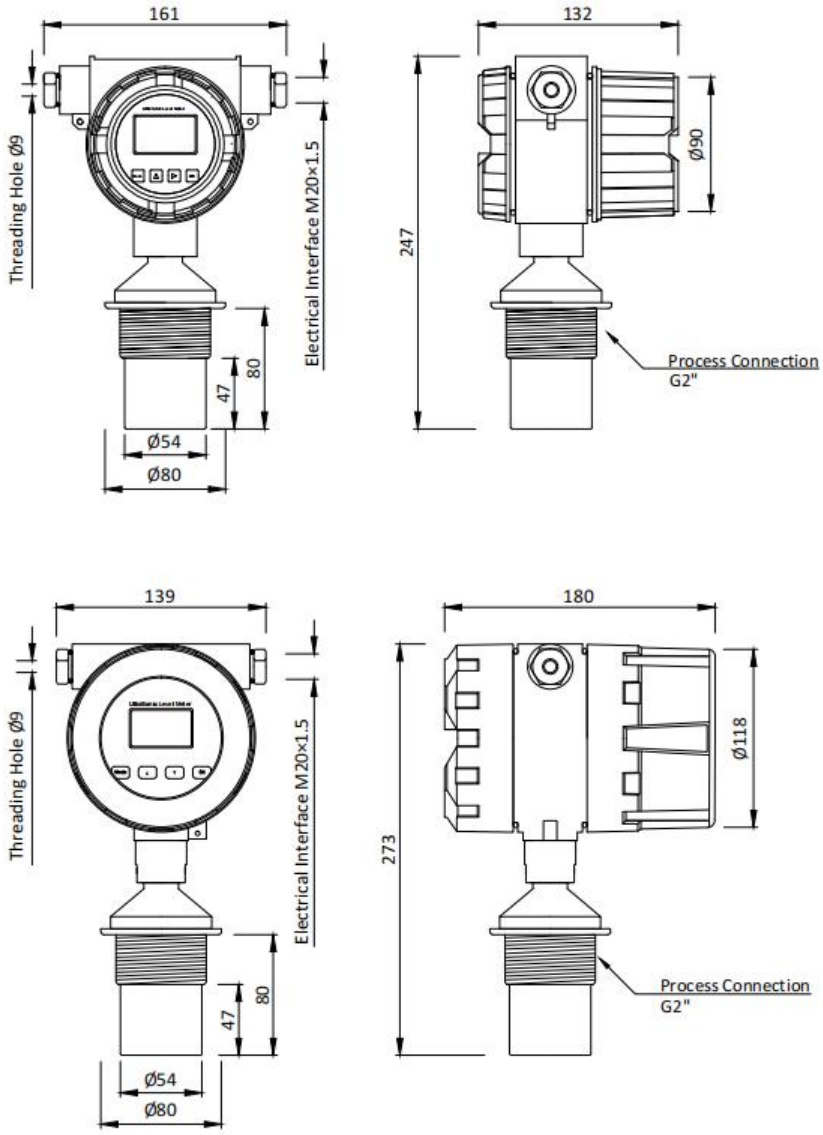
- 0x406449BA is the floating point number of liquid level of 3.567m. For adjustment of sequence, see the advanced parameter P53.
- The transmission frequency of the query data frame is more than 3s! This instrument has the function of remote parameter setting!

Appendix 5: Integrated Instrument Dimension Diagram



Note:

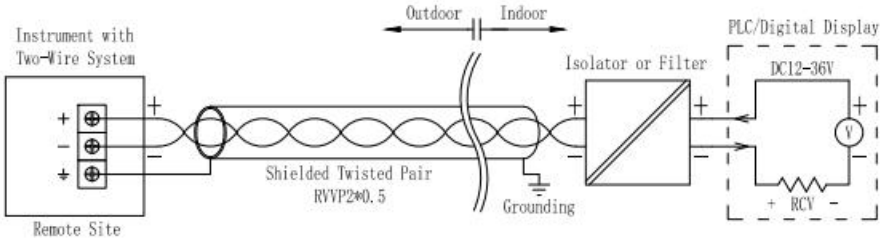
- The transducer is made of ABS engineering plastics. The recommended cable diameter is 6-8mm. If the diameter is insufficient, please wrap with the raw material belt, and tighten the waterproof connector. Unused cable inlets shall be sealed.
- The instrument is in the humid environment all the year round. It is recommended to apply the glass cement to the cable inlet and instrument cover seam.



Note:

- The transducer is made of die casting aluminum alloy. The recommended cable diameter is 6-8mm. If the diameter is insufficient, please wrap with the raw material belt, and tighten the waterproof connector. Unused cable inlets shall be sealed.
- The instrument is in the humid environment all the year round. It is recommended to apply the glass cement to the cable inlet and instrument cover seam.

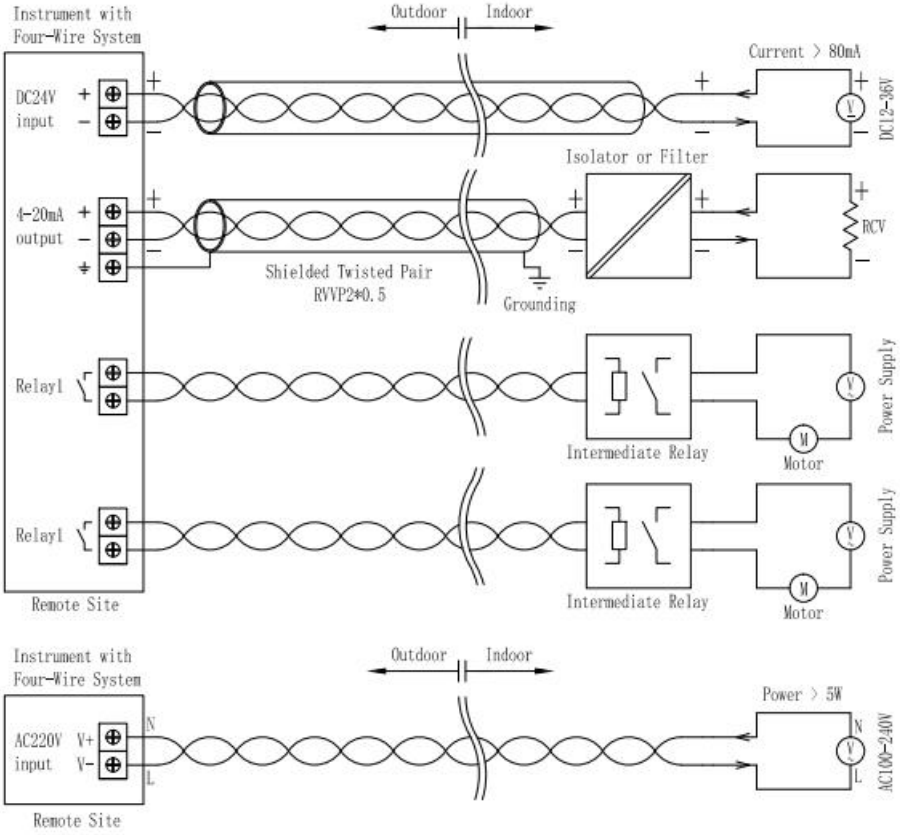
Appendix 6: Integrated Instrument Wiring Diagram (Two-wire System)



Note:

- The ultrasonic liquid meter belongs to the instrument with weak current, having high magnification, so instrument grounding is very important.
- The wire shall adopt RVVP 2×0.5 shielded cable, the control room side of the shielding layer should be grounded, and shall not run parallel to the power cable.
- The PLC analog input module connected to the two-wire system instrument should be kept away from frequency converters and motors, and shall not use the same power supply as the frequency converter.
- The instrument is in the humid environment all the year round. It is recommended to apply the glass cement to the cable inlet and instrument cover seam. Unused cable inlets should be sealed.

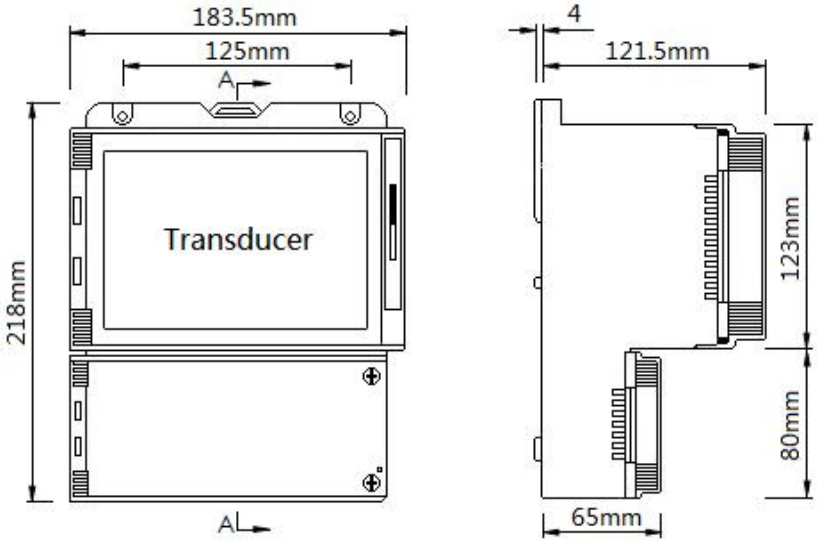
Appendix 7: Integrated Instrument Wiring Diagram (Four-wire System)



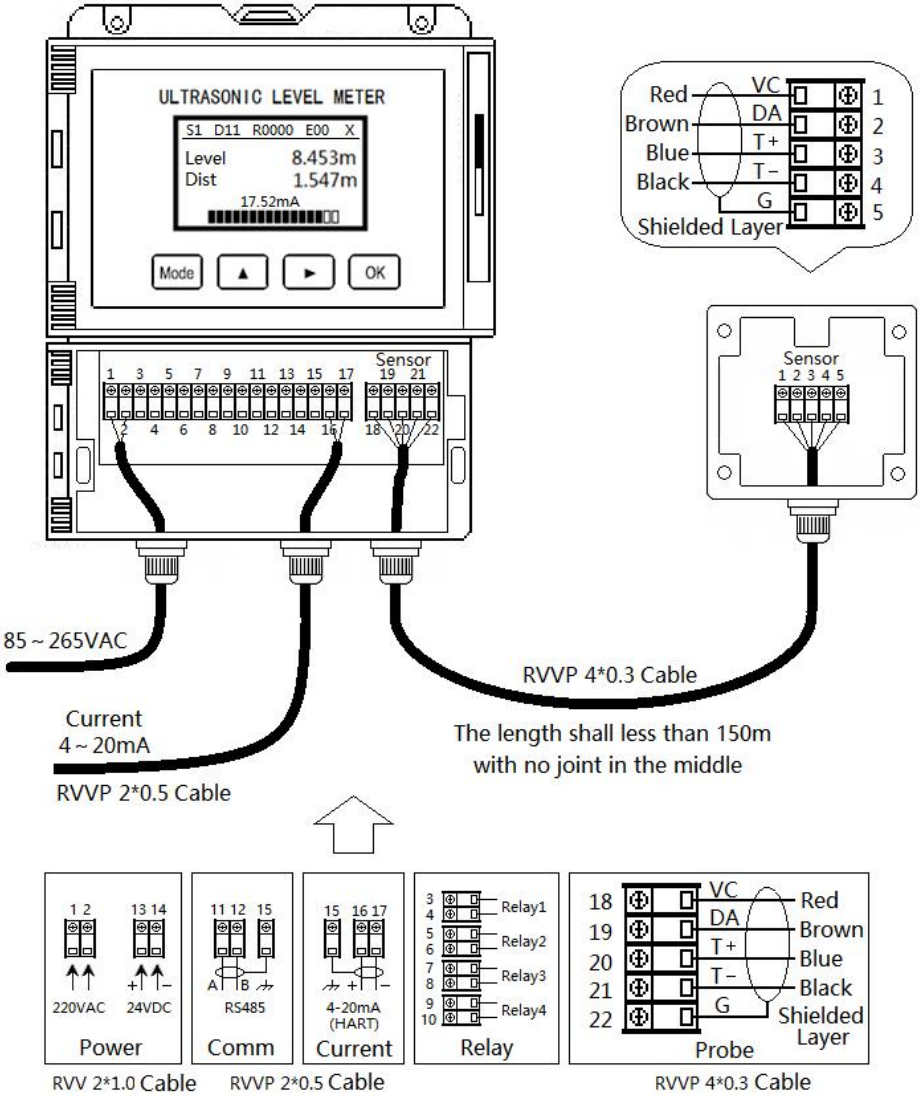
Note:

- The ultrasonic liquid meter belongs to the instrument with weak current, having high magnification, so instrument grounding is very important.
- 4-20mA wire and RS485 communication wire shall adopt RVVP 2×0.5 shielded cable, and shall not run parallel to the power cable. 4-20mA wire shall adopt RVVP 2×0.5 shielded cable, and shall not run parallel to the power cable.
- The probe wire shall adopt RVVP 4×0.3 shielded cable, without joints in the middle, and shall not run parallel to the power cable.
- The instrument is in the humid environment all the year round. It is recommended to apply the glass cement to the cable inlet and instrument cover seam. Unused cable inlets should be sealed.

Appendix 8: Split Instrument Dimension Diagram



Appendix 9: Split Instrument Wiring Diagram



Note:

- The probe wire shall adopt RVVP 4×0.3 shielded cable, without joints in the middle, and shall not run parallel to the power cable.
- The user can replace the probe cable. It is recommended to consult the manufacturer or purchase it in advance.
- The user can select HART or RS485 interface.

Packing List

No.	Name of equipment or accessory	Unit	Quantity	Note
1	Ultrasonic level meter	Set	1	
2	Plastic screw nut (default) DN32 flange or bracket (optional)	Piece	1	
3	Operation Instruction	Book	1	
4	Product qualification certificate	Piece	1	

Points for attention

- Don't shake or collide the equipment intensively during use and transportation.
- During transportation and storage of the instrument, environment temperature shall not be lower than -40 ℃ or higher than +70℃; relative humidity shall not exceed 85%; there shall be no corrosive gas or intense electromagnetic field around; original packing box shall be used during transportation.

Warranty Card Receipt

User name			
Contact address			
Contact person		**Contact telephone**	
Product type		**Product number**	
Delivery date		**Person responsible for installation**	

……

Description of Warranty Card

Product type		**Product number**	
Delivery date		**Person responsible for installation**	

Warranty policy:

- The user shall show Warranty Card during maintenance. With Warranty Card, faults arising from normal use during warranty period can be repaired for free as stipulated.
- Warranty period: warranty period of our products is 24 months from delivery date. This company provides paid extension of warranty period.

The following cases are beyond free warranty scope:

- The product or its components exceed free warranty period.
- Hardware faults result from operating environment which doesn't conforms to product operating requirements.
- Bad power supply environment or foreign matters entering the equipment lead to faults or damages.
- Faults are caused because the user doesn't operate according to use methods and points for attention in operation manual.
- Faults are caused by force majeure, such as thunder, lightning, flood and fire. Arbitrary disassembly of the equipment, modification beyond authority or abuse of the equipment leads to faults or damages.

Limitations

- Please keep Warranty Card as maintenance voucher. It won't be supplemented if it is lost.
- Right to interpret this Warranty Card belongs to this company. This company is entitled to revise its contents without notice in advance.