EPU2 Integrated Clamp-on Ultrasonic Flowmeter
Operation Manual

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1. Reading labels

Thanks for purchasing FineTek's Product. This operation manual describes the product features, working principles, operation and maintenance methods. It makes the user fully understand how to use the product correctly, so as to prevent dangerous situations such as device damage or operator injury.

➢ Please read this operation manual completely and carefully before using the product.
➢ Please contact the company if this operation manual can't satisfy your demands.
➢ The content of the operation manual is updated based on the version upgrade, which will be uploaded to the website for the user to access.
➢ Please don't disassemble or repair the product on your own, as this will make you disqualified from availing of the warranty service. Please send the product back to the company for repair and calibration, or just contact the company.
➢ Explanation of warning signs:

Danger→ It indicates that wrong operation will cause death or major disasters.

Note→ It indicates that wrong operation will cause injury and device damage to some extent.

Electric shock→ It warns of possible electric shock.

Fire→ It warns of possible fire.

Prohibited→ It indicates the prohibited wrong behavior.

2. Product warranty

2.1 New product warranty

➢ We don't charge for the inspection, part/s and repair for the product of the company that has a defect within 12 months from the delivery date and meets the warranty terms.

➢ If the product defect is not due to human error during its transportation, user may change to a new unit from the company within 7 days from delivery date.

➢ When the product needs to be sent back to the factory for repair, please send the whole set, and don't disassemble the parts. Moreover, please be sure it is completely packed to avoid damage and causing more loss and defect during the transportation.

➢ The warranty is not available for causes that fall under the following circumstances, for which the company shall charge for the inspection, part/s and repair according to the actual condition:

● The product or its parts are beyond the warranty period.

● Fault or damage is caused by not following the instruction and use environment described on the operation manual.

● The product damage is caused by a force majeure factor (natural disasters, floods, fire, earthquakes, lightning, typhoon, etc.), human destruction (scratches, dropping, latch broken, tapping, cracks and punching), human error (using improper voltage, high-humidity, water leakage, stain, corrosion, loss, improper storage, etc.) and other abnormal factors.

● The damage is caused by the customer or the 3rd party through the installation, addition, expansion, modification and repair of parts not authorized or certified by the company.

● The volume label information is wrong or unclear, so the product serial number can't be confirmed.

2.2 Repair warranty

A **6-month** warranty service is provided for the repaired part of the product, during which the same product can be repaired free of charge in case of the same fault.

2.3 Service network

Company	Address	Telephon	Fax
Taipei Headquarters (Taiwan)	No.16, Tzuchiang St., Tucheng Industrial Park, New Taipei City 23678	+886 2-2269-6789	+886 2-2268-6682
Taichung Sales office (Taiwan)		+886 4-2465-2820	+886 4-2463-9926
Kaohsiung Sales office (Taiwan)		+886 7-333-6968	+886 7-536-8758
Fine automation Co., Ltd. (China)	No. 451, Duhui Road, Zhuanqiao Township, Minhang District, Shanghai City 201109	+86 021-64907260	+86 021-6490-7276
Aplus FineTek Sensor Inc. (America)	355 S. Lemon Ave, Suite D, Walnut, CA 91789	1 909 598 2488	1 909 598 3188
FineTek Pte Ltd. (Singapore Branch)	37 Kaki Bukit Place, Level 4 Singapore 416215	+65 6452-6340	+65 6734-1878
FineTek GmbH (Germany Branch)	Bei den Kämpen 26 21220 Seevetal-Ramelsloh, Germany	+49 (0) 4185 8083 0	+49 (0) 4185 8083 80
FineTek Co., Ltd. (Indonesia Branch)	PERGUDANGAN TUNAS BITUNG JL. Raya Serang KM. 13,8, Blok C3 No. 12&15, Bitung Cikupa, Tangerang 15710	+62 021-2958-1688	+62 021-2923-1988

3. Storage And Transport Requirements

3.1 Transport Requirements

To protect the product from damage during the transport, keep it in the package when it is transported from the factory. The place of storage shall meet the following requirements:

➢ Appropriate rainproof and damp-proof treatment must be conducted.

➢ Vibration must be reduced and collision with other objects must be prevented during its transportation.

➢ The storage temperature must be in the range of -20～60°C

➢ The humidity should be lower than 80%

➢ Outdoor storage may degrade the performance of the flow meter.

4. Product Inspection

4.1 Package Contents
➢ Transmitter of Ultrasonic Flow Meter (1 set)
➢ Probe bracket (1 set)
➢ Operation manual x 1

4.2 Safety Inspection
➢ Make sure the package is not deformed or damaged before you unpack the box. If there is any deformation or damage, take a picture and use it as proof for compensation.
➢ Make sure the contents are not deformed or damaged and there are no quality problems after you unpack the box. If there is any deformation, damage or quality problem, take a picture and use it as proof for compensation.
➢ Unpack the box and make sure the contents conform to what you ordered and the quantity is correct without delay.
➢ If there is any nonconformance, contact us within 7 days after the product arrived (with the picture). Otherwise, we are not responsible for the compensation, make-up, replacement or repair.

4.3 Handling of the product
➢ Don't drop or impact the product or impose excessive force on it. Otherwise, electric shock or damage may occur.
➢ Don't pull the cable of the probe. Otherwise, the cable may become loose or come off.

5. Product Overview

5.1 Product Features

➤ When measuring the flow of a tube, it is not needed to invade the original tube and, thus, the tube and the process fluid will not be affected.

➤ Large LCM display module, showing the instantaneous flow, total flow, empty tube warning and signal intensity.

➤ User-friendly interface: With an intuitive, hierarchical menu structure, the flow meter allows users to easily set up and adjust parameters. This allows both novice and seasoned technicians to quickly master the device, reducing learning curve and minimizing the need to refer to the operation manual.

➤ Reliable Measurement with entrained gas: With advanced signal processing, the flow meter delivers accurate readings even in fluids containing air bubbles or impurities. This ensures stability and reliability under various operating conditions, with data quality remaining unaffected by air bubbles.

➤ Isolated output: With isolated output support, the flow meter ensures the robustness of signal transmission and its immunity to noise, protecting against data errors or device damage from ground loops or electromagnetic interference (EMI). It is especially vital in applications demanding high-precise control and data integrity.

➤ Intelligent adaptive signal search: With the adaptive signal search, the flow meter automatically adjusts its ultrasonic transmission and reception parameters based on the fluid properties and the measurement environment within the tube. This ensures consistently optimal measurement performance under various fluid conditions and effectively mitigates any measurement interference caused by changes in the operating environment.

➤ The display can be switched between landscape or portrait views, enhancing visibility and ease of operation regardless of the product's installation orientation.

➤ Standard 4-20mA, pulse output, RS485 Modbus communication.

➤ Rugged design with high reliability for industrial applications.

5.2 Working Principles

The measuring principle of the transit-time clamp-on ultrasonic flowmeter is the ultrasonic pulse striking on the fluid through a transducer. When the ultrasonic wave propagates in the liquid, the flow of the liquid brings about tiny changes to the propagation time, which is in a direct proportion to the flow rate of the liquid, and the flow rate of the liquid can be acquired. As shown in the figure, a pair of ultrasonic transducers are installed onto the outer surface of the pipe whose flow is to be measured according to the relative position. There are "Z" and "V" options available for the installation. The ultrasonic pulse aroused by the electrical impulse from a transducer is propagated through the pipe wall -> fluid -> pipe wall and received by the second transducer. The propagation time of the ultrasonic pulse from the transmission to the receiving ends depending on the forward and reserve flow directions is:
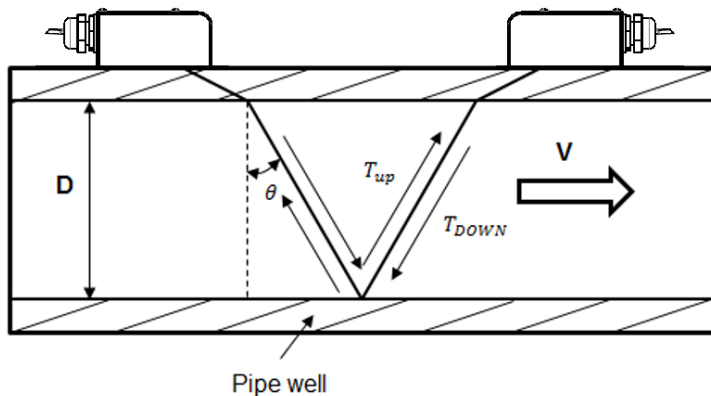
$$T_{UP} = \frac{M \times D/cos\theta}{C_0 + Vsin\theta}$$

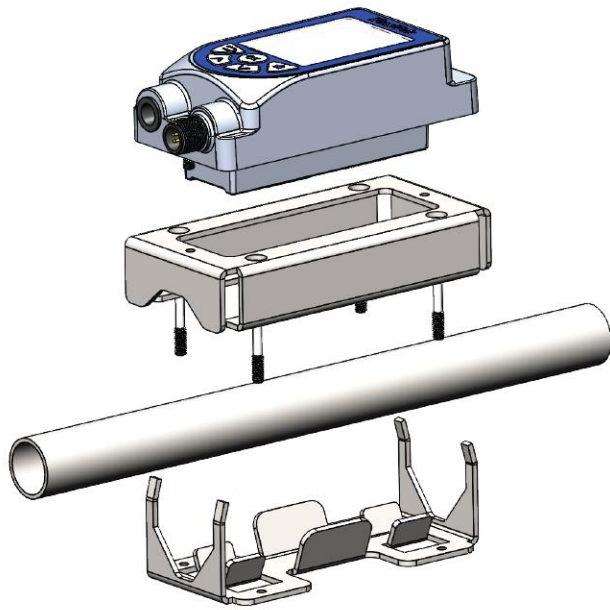$$T_{DOWN} = \frac{M \times D/cos\theta}{C_0 - Vsin\theta}$$

$$\Delta T = T_{DOWN} - T_{UP}$$

The average linear flow rate of the fluid is acquired using the formula below:

$$V = \frac{M \times D}{sin2\theta} \times \frac{\Delta T}{T_{UP} \times T_{DOWN}}$$

Pipe well

5.3 Mechanical Drawing

5.4 Product Applications

For the AI server sector, this flow meter delivers precise control of the coolant flow, ensuring optimal server temperature for extended lifespan and greater running efficiency. The clamp-on installation ensures zero system interruption, eliminates pressure loss and mechanical wear, and offers easy maintenance, minimizing losses associated with downtime.

For the PCB wet processing sector, this flow meter accurately controls the flow of chemical solutions, adapting to critical processes such as cleaning, etching, and plating. With non-contact measurement, this flow meter eliminates the risk of corrosion damage from chemical solutions, ensuring consistently stable and high-precision flow control that ultimately enhances process consistency and product quality.

6. Product Specifications

6.1 Product Specifications

Display Panel	320*240 pixel QVGA IPS, LCM 2, 4-inch
Button	5 control buttons
Comm Interface	RS-485 (Modbus)
Measured Variables	Changes in flow velocity and time
Tube dimensions	DN15, DN20, DN25, DN32, DN40
Straight Tube Section	U15/D5 minimum
Measurement Range	V = 0.1~5 m/s
Reaction Time	0.5 s, 1.0 s, 2.5 s, 5 s, 10 s, 30 s, 60 s
Repeatability (F.S.)	5S:±0.5%, 15s:±0.3%, 30s:±0.25% of F.S.@ damping time (Note 1)
Medium Temperature	0~60°C
Ambient Temperature	-20°C to 50°C (0°C to 95% R.H., non-condensing)
Analog Output	4 to 20 mA, max. load 500Ω
Digital Output	NPN output, 30Vdc/50mA
Power Supply	20 ~ 30 VDC
Power consumption	Max. 6W
I/O Connector	M12-6pin
Protection Level	IP65
Housing Material	Aluminum Alloy/SUS304/PEEK/PET/Silicone Rubber
Installation Bracket	SUS304

Note 1:
Calibration conditions: FineTek Water Actual Flow Testing Equipment
Fluid temperature: 20±10 ˚C
Ambient temperature: 20± 5
Length of straight tube section: Upstream side 15D or more; downstream side 5D or more

Note 2:

Fluid Temp.	0	10	20	30	40	50	60	60.01
Ambient temp.	50	50	50	50	50	47.5	45	0

Note 3:
Temperature resistance curve
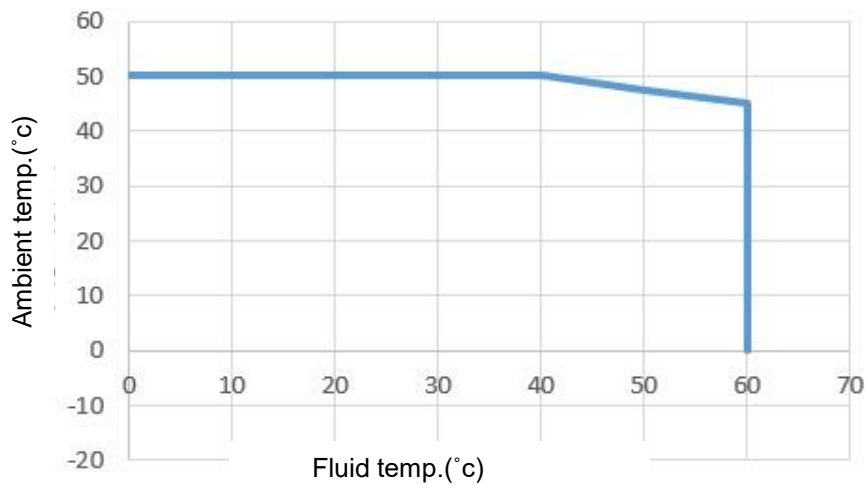
EPU2 pipe diameter flow rang

Flow Rang(LPM)				
Diameter (mm)	Flow rate 0.1m/s	Flow rate 1m/s	Flow rate 3m/s	Flow rate 5m/s
15	1.1	10.6	31.8	53
20	1.9	18.8	56.5	94
25	2.9	29.4	88.3	147
32	4.8	48.2	144.7	241
50	11.8	117.8	353.4	589

6.2 Dimensions

DN15
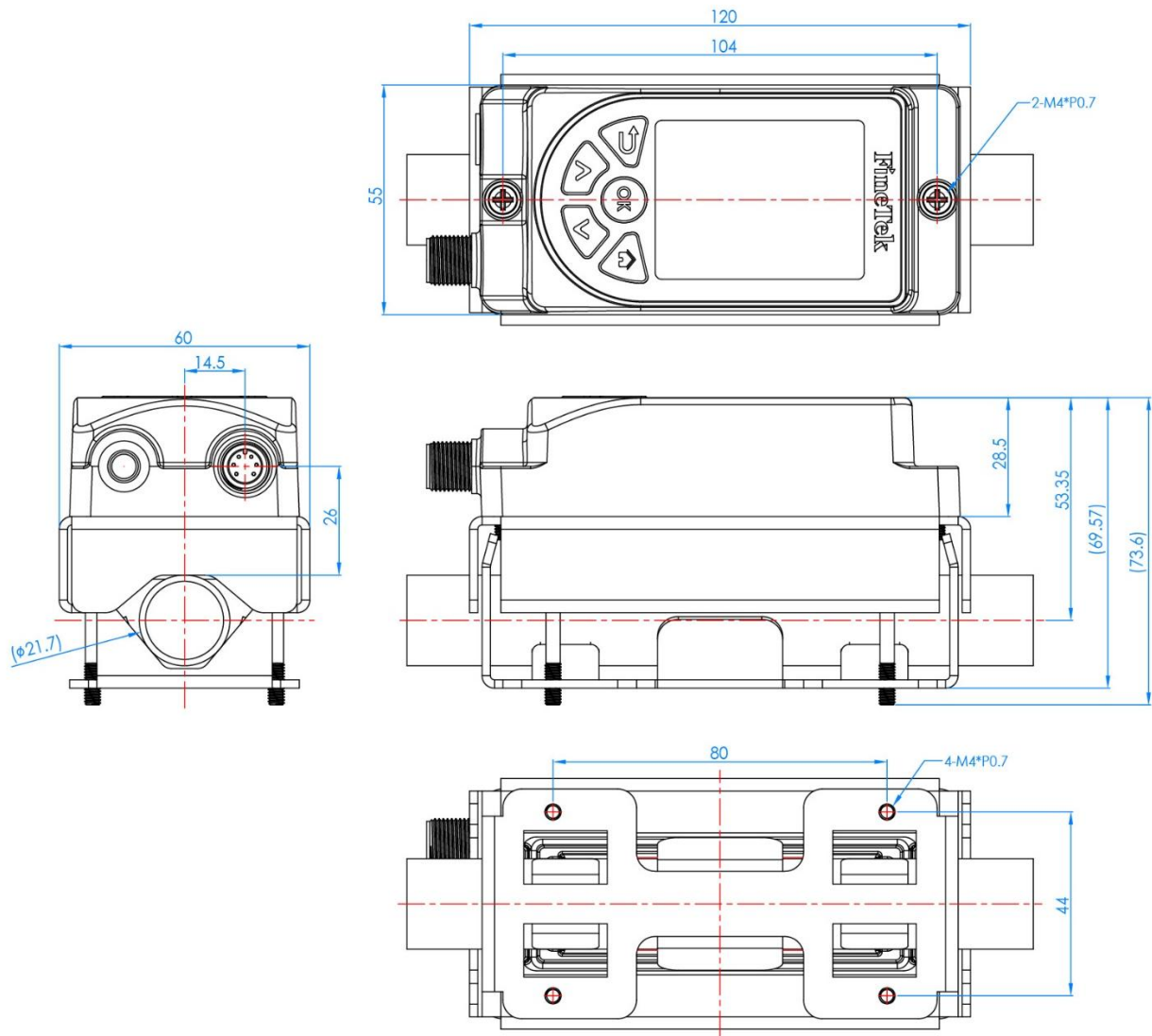
DN20
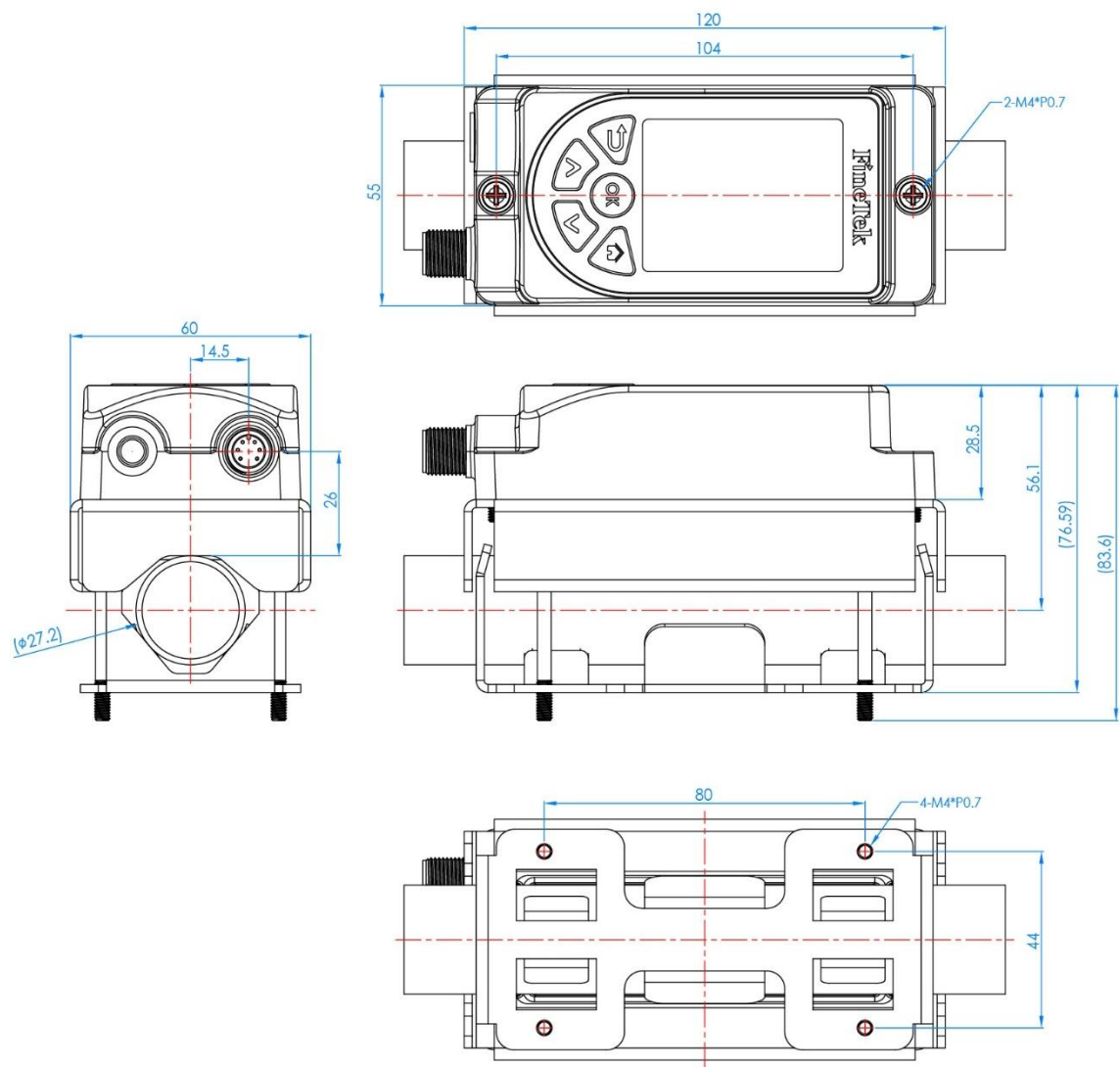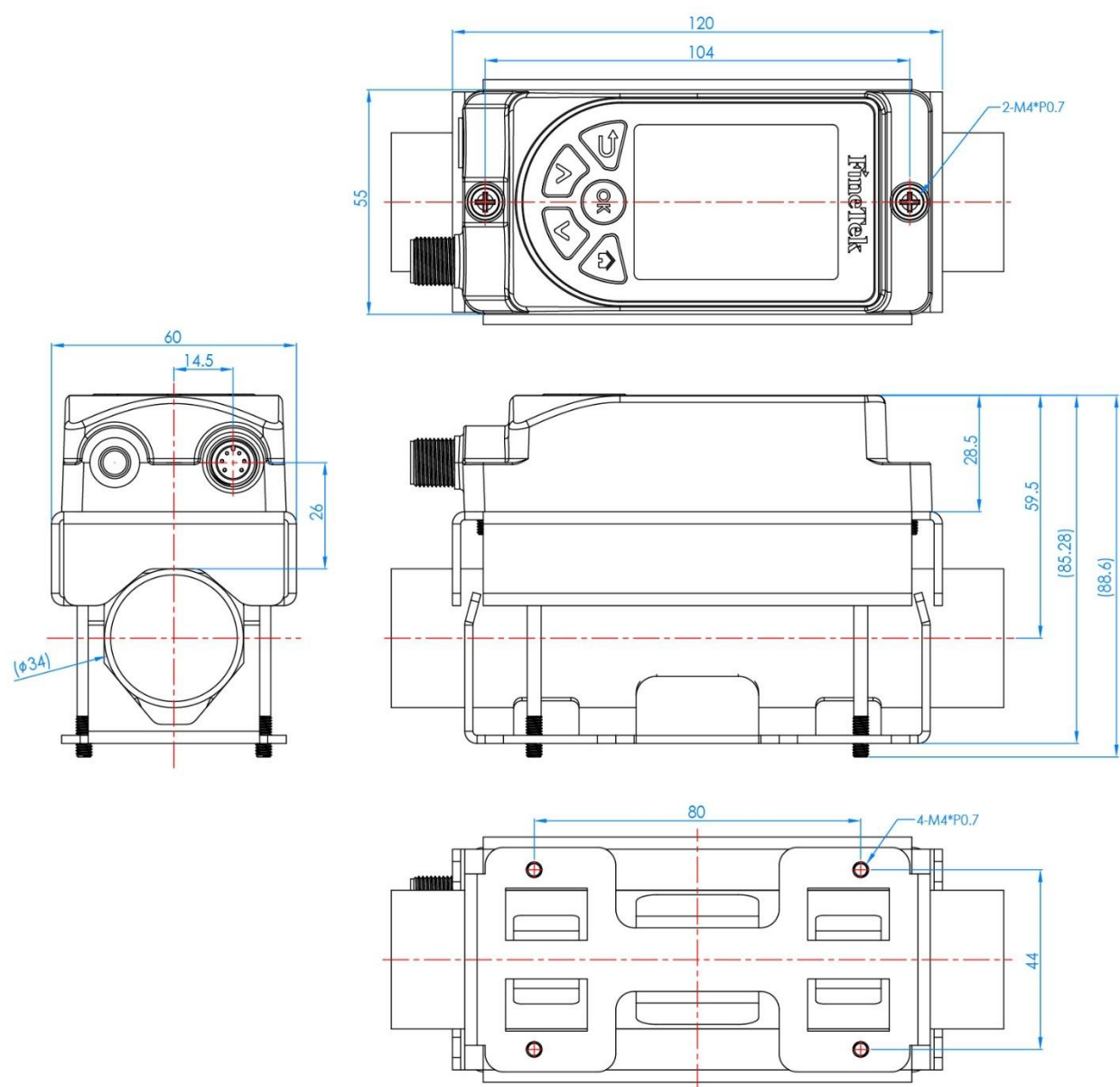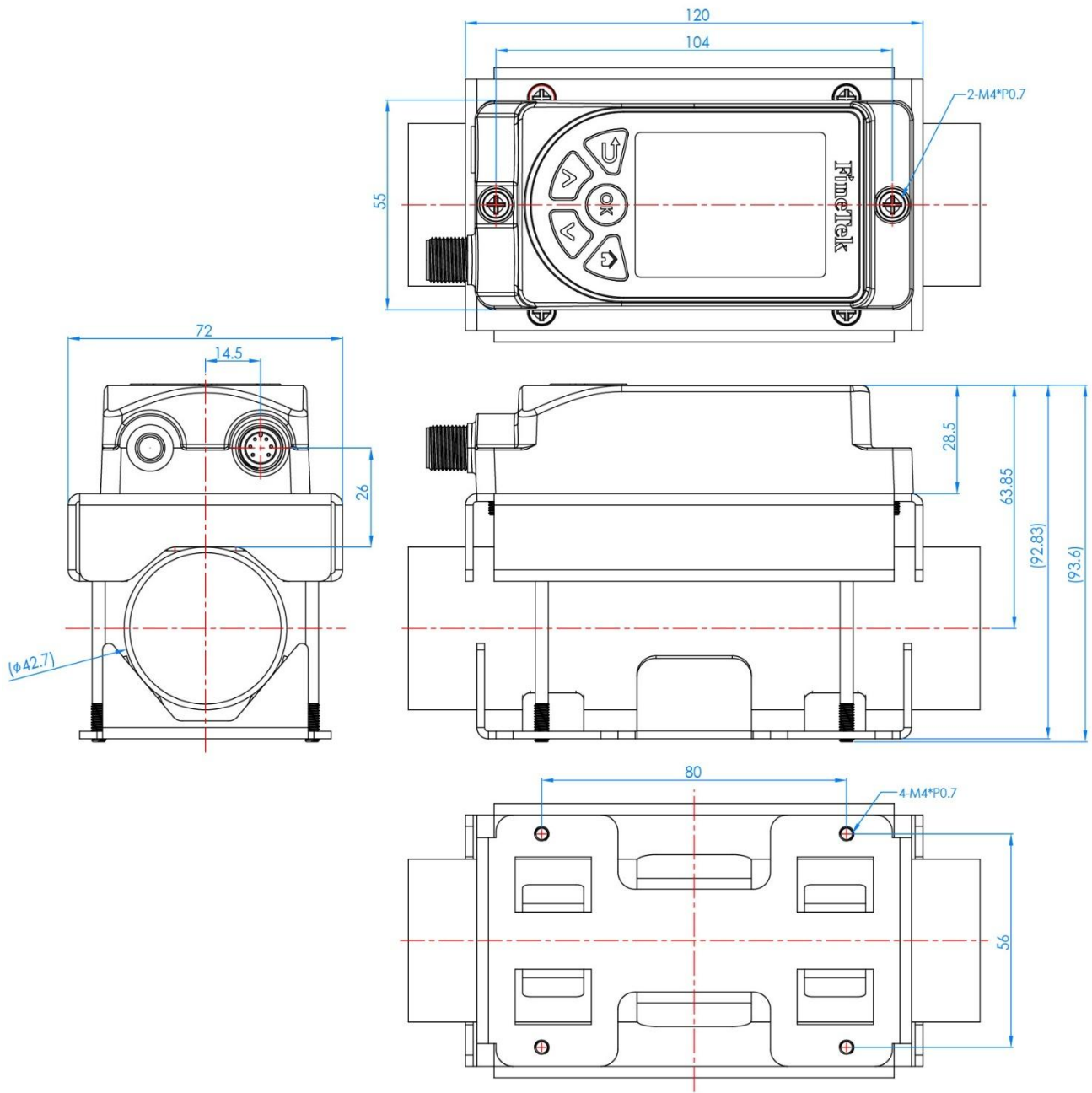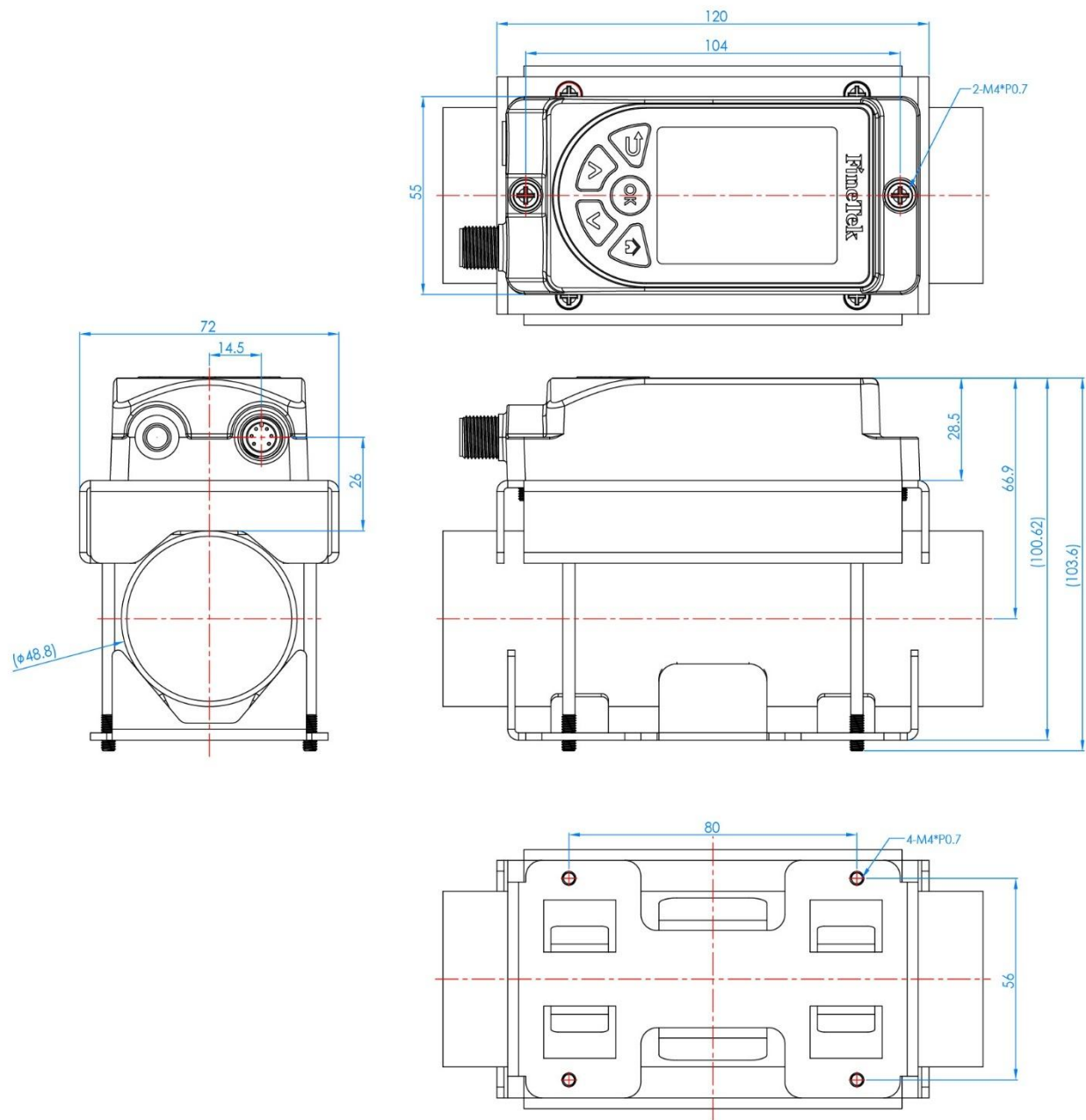
DN25

DN32

DN40

6.3 Ordering Instructions

$$\text{EPU 2 0 0 0 0} - \square\square\square\square\square\,0$$

⑨⑩⑪ Pipe Diameter
015: DN15
020: DN20
025: DN25
032: DN32
040: DN40

⑫ Power Supply
D: 24Vdc

⑬ Output Interface
0: 4~20mA/Pulse/RS485

Optional

Part number	Specifications
PC312-22316B2M01	Single head M12, General type 180, PVC, Without lamp, 6C, 2M
PC312-22316B5M01	Single head M12, General type 180, PVC, Without lamp, 6C, 5M
Display transparent cover, material: PE	EPUAM2S-1207000001

7. Parameter Description

7.1 Panel

Date & Time

Echo signal intensity

Instantaneous flow

Flow velocity

Total flow

Scale of flow velocity span
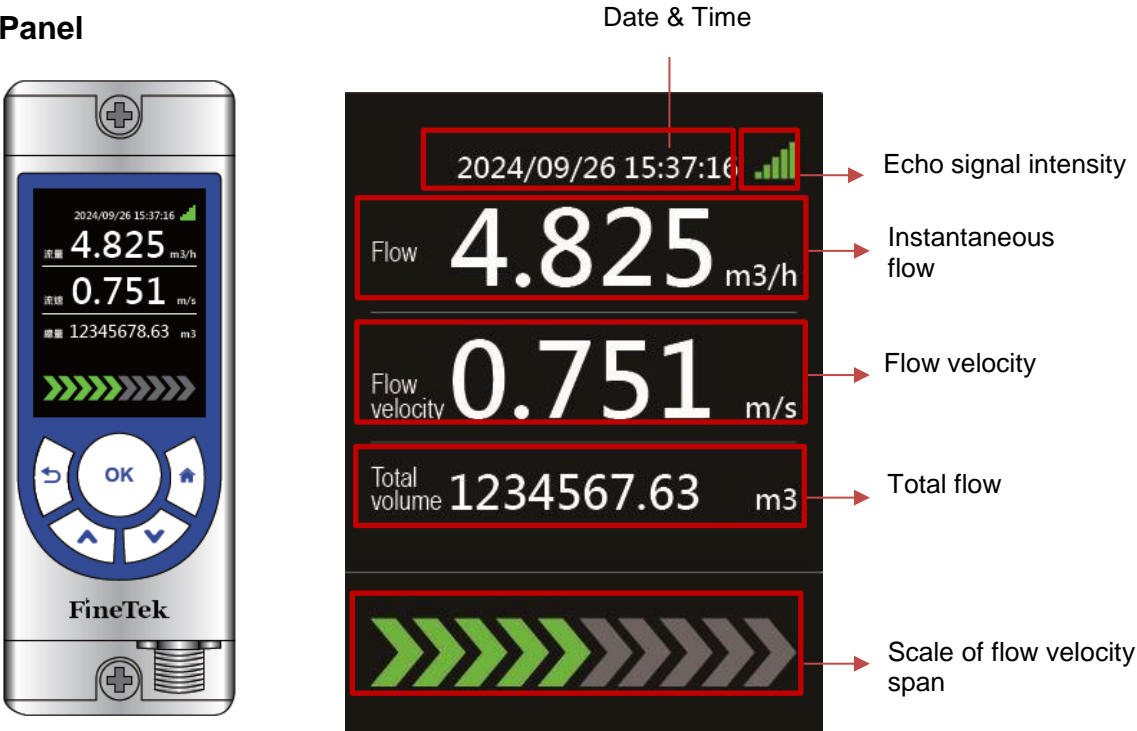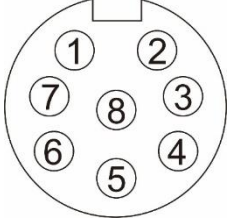
7.2 Button Function

Button	Measuring Main Page	Menu Mode	Parameter Setup Interface		
			Read Only	Numeric Edit Mode	List Edit Mode
🏠	Access the menu	Back to Main Page	Back to Main Page	Back to Main Page	Back to Main Page
↩	《Invalid key》	Return to the previous layer	Return to the previous layer	Cancel	Cancel
▲	Switch from Main Page 2→1	Sub-menu item [upper]	Option: [Upper]	Number: [+] key	Option: [Upper]
▼	Switch from Main Page 1→2	Sub-menu item [lower]	Option: [Lower]	Number: [-] key	Option: [Lower]
OK	《Invalid key》	[Access the sub-menu] or [Edit Mode]	《Invalid key》	Confirm key (long press)	Confirm key (long press)

8. Wiring Instructions

Front View	Pin	Contact point	Description
	1	Black	RS485-
	2	Red	Pulse+
	3	White	RS485+
	4	Brown	24 V+
	6	Blue	24 V-/Pulse-/mA-
	7	Green	mA+

※ No connections in Pins 5 & 8

※ Use M12-6 pin cable

9. Installation Instructions

Please refer to the following precautions and methods for use of the product.
➢ The design, test and electrification of the flowmeter are subject to their respective regulations which users must observe strictly to ensure safe and normal operation of the flowmeter.
➢ Check the parameters of the pipe and liquid prior for accurate installation of the transducers. Make sure the installation distance of the transducers is correct to ensure the accuracy.

9.1 Environmental Safety
Please observe the following requirements to ensure the safety of the personnel and equipment:
➢ Read this operation manual carefully before selecting the location and installing the flowmeter. Take the safety requirements of the environment where the flowmeter and relevant equipment will be installed into account.
➢ Only the personnel who have the knowledge of flowmeters are allowed to install, maintain 1nd repair the flowmeter.
➢ Install the flowmeter, transducer, and transmitter accurately and make sure safe and reliable sealing.
➢ Take proper measures to avoid electric shock.

9.2 Product Installation
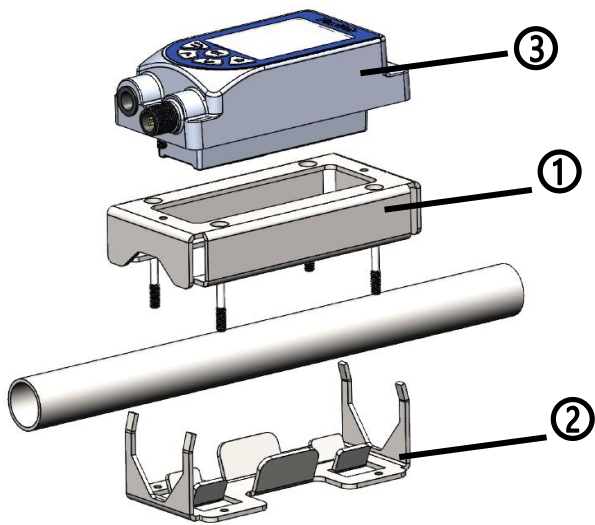
① Transducer Upper Bracket
② Transducer Lower Bracket
③ Transducer Transmitter

(1) Combine the ① upper bracket with the ② lower bracket and fasten them evenly with the four lock wires.
(2) Place the ③ transducer's transmitter on the fixed bracket and fasten it evenly.

10. Installation Steps of Transducers

1. Selection of the Installation Location

➢ To avoid that the measurement is affected by the bubbles in the pipe or the pipe is not full of liquid, install the transducers in the section of the pipe where full water is ensured (Figure 1).

The Pipe is Full of Liquid in the Following Cases

(Fig. 1)

Upward vertical flow   Upward flow at an angle   The lowest point in the pipe system
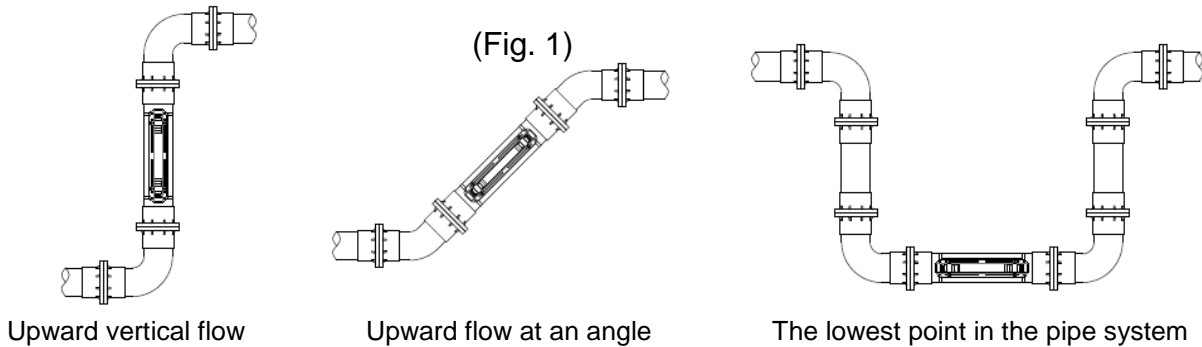
➢ Do not let air entering the pipe when using the flowmeter. The stability of the measurement will be affected if bubbles exist in the liquid (Figure 2).

Vacant space

NG

NG

The pipe may become less filled easily

Flow direction

NG

Flow direction   Open
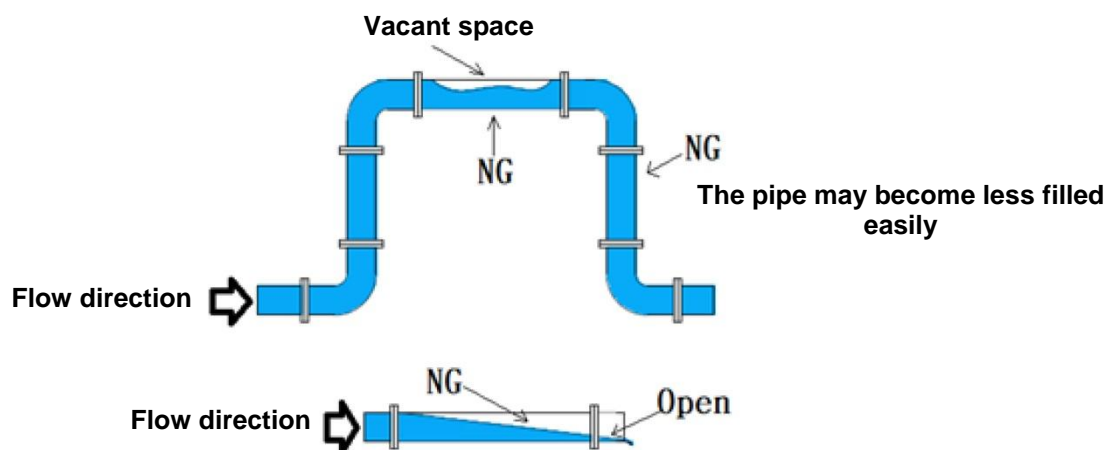
(Fig. 2)

➢ To avoid interference with the detection signal, don't install too many devices nearby.
➢ The stability of the measurement will be affected if the ultrasonic flowmeter is installed in a liquid of composite properties.

- The transducers may be deteriorated in performance more quickly if they are exposed to rain or sunshine for a longer period of time. Do not install the transducers in this environment.
- The transmitter, transducer and signal cable of the ultrasonic flowmeter are easily affected by the frequency converter, radio station, TV station, microwave communication station, GSM base station, high-voltage cable, and so on. Therefore, try to keep these facilities away from the transmitter and transducer when you select the installation location for them. The housing of the transmitter and the shielded insulation of the signal cable shall be grounded.
- Do not share the circuit with the frequency converter. An isolated power source shall be used for the transmitter.
- To improve the accuracy of the measurement, installation of the transducers in the upstream or downstream straight pipe section as shown in the following figure is recommended.
  (D = Outer diameter of the pipe)
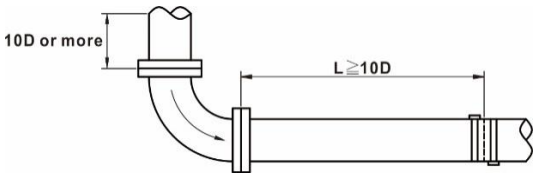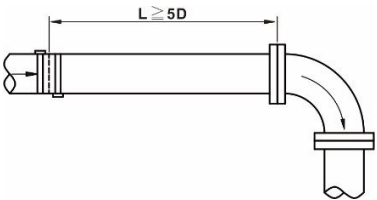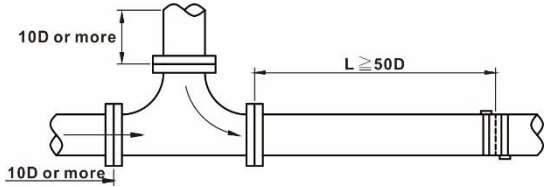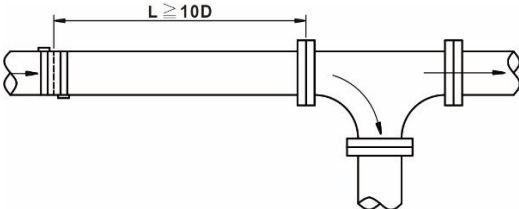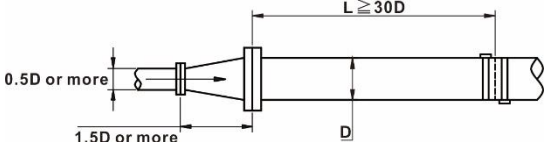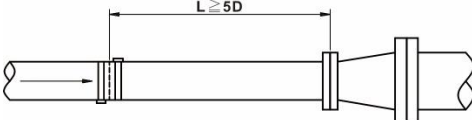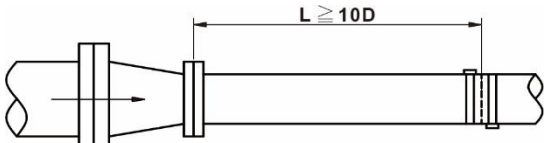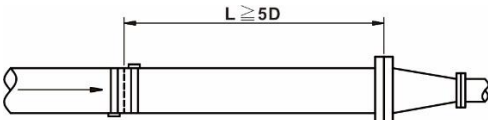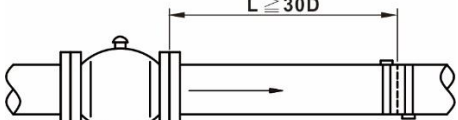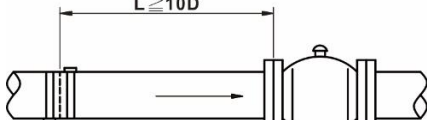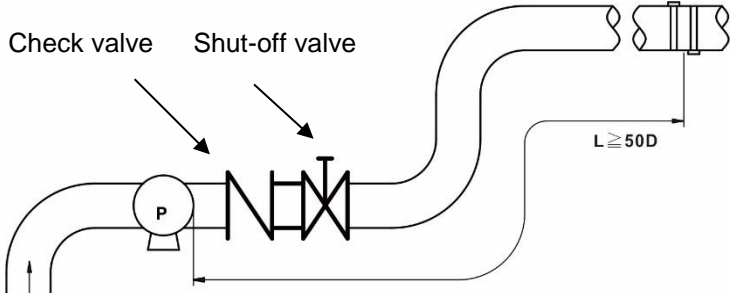
2. Inspection Before Installation
- Prior to the installation, the area of the tube for installation of the ultrasonic sensor shall be cleaned so thoroughly that the original gloss of the metal is revealed;
- The contact area between the sensor and the pipeline should be thoroughly cleaned. Ensure that the coupling pad is properly installed on the probe. Make sure there is no air gap, sand layer, or other obstruction at the contact interface between the sensor and the pipeline that could affect ultrasonic signal transmission.

3. Wiring instructions
- Use only the original M12 power cable.
- When operating under normal 24VDC power supply status, the resistance of the cable shall not be higher than 10Ω.
- All the terminal blocks shall be wired with slotted or Y-type terminals and insulated properly. The wire shall not intrude into the terminal block directly.
- The total impedance of the cable drawn from the current output terminal shall not be higher than the specified nominal value.
- The pulse or frequency output is usually NPN transistor output. It needs an external power supply.

4. Schematic Diagram of Straight Tube Sections for Various Tube Types

Type	Upstream Straight Section Length	Downstream Straight Section Length
90° bend	10D or more / L≧10D	L≧5D
T-type joint	10D or more / 10D or more / L≧50D	L≧10D
Divergent pipe	0.5D or more / 1.5D or more / L≧30D / D	L≧5D
Convergent pipe	L≧10D	L≧5D
Control valve	L≧30D — Upstream flow control	L≧10D — Downstream flow control
Pump	Check valve / Shut-off valve / P / L≧50D	

(Fig. 6)

5. Schematic Diagram of Straight Tube Sections for Various Tube Types

(1) Press and hold 🏠 for 2 seconds on the measurement screen, enter menu and select [Measurement Parameter Setting (1)].

> Measurement parameter settings (1)
> Basic Set (2)
> Advanced Setting (3)
> I/O Signal Setting (4)
> Alarm Set (5)
> System Set (6)
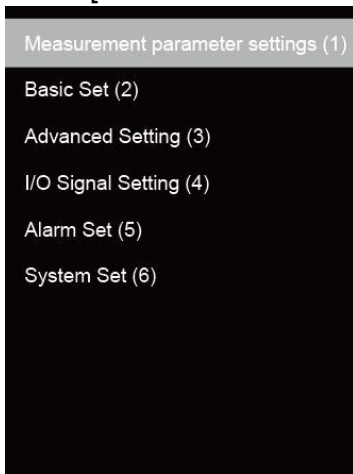
(2) Press **OK** to enter the Sub-menu.Select [Fluid Type], press the **OK** and ⌄ keys in order to select the correct fluid, then press the **OK** key to complete the setting and return the previous level automatically.

> Fluid Type (1.1)
> Outer diameter of the tube (1.2)
> Tube Thickness (1.3)
> Tube Material (1.4)
> Fluid Sound Speed (1.5)
> Tube Sound Speed (1.6)

> Fluid Type (1.1)
> 0 Water
> 1 Oil
> 2 Custom
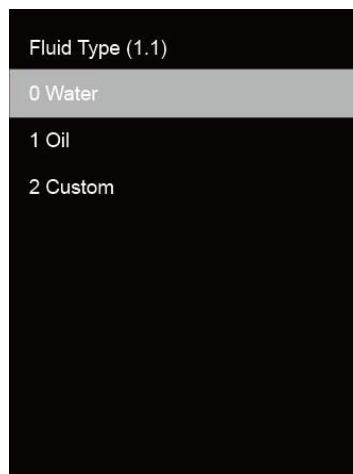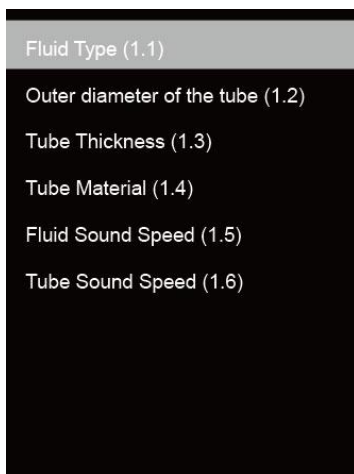
(3) Press ⌄ key to select [Outer Diameter of the Tube], press the **OK** and ⌄⌃ keys in order to select the correct one, then press the **OK** key to complete the setting and return the previous level automatically.

> Fluid Type (1.1)
> Outer diameter of the tube (1.2)
> Tube Thickness (1.3)
> Tube Material (1.4)
> Fluid Sound Speed (1.5)
> Tube Sound Speed (1.6)

> Outer diameter of the tube (1.2)
>
> 22
>
> mm
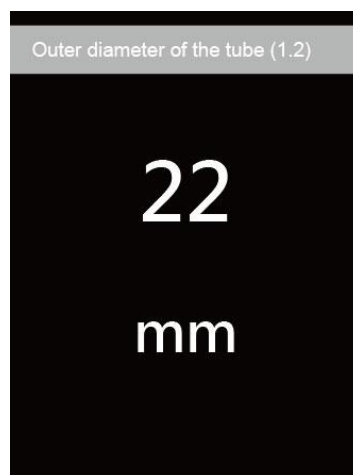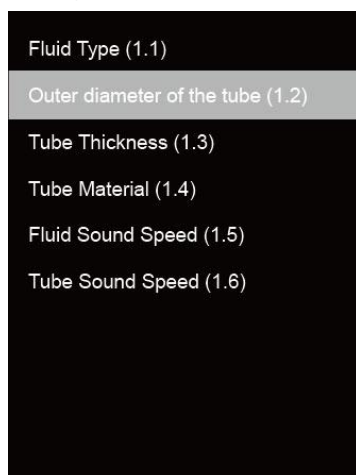
(4) Press ⌄ key to select [Tube Thickness], press the **OK** and ⌄⌃ keys in order to select the correct outer diameter of the tube, then press the **OK** key to complete the setting and return the previous level automatically.

Fluid Type (1.1)		Tube Thickness (1.3)
Outer diameter of the tube (1.2)		
Tube Thickness (1.3)		**01**
Tube Material (1.4)		
Fluid Sound Speed (1.5)		**mm**
Tube Sound Speed (1.6)		
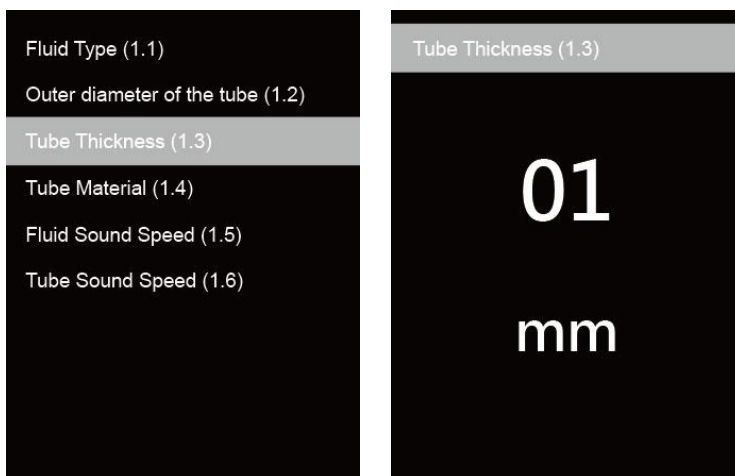
(5) Press ⌄ key to select [Tube Material], press the **OK** and ⌄⌃ keys in order to select the correct outer diameter of the tube, then press the **OK** key to complete the setting and return the previous level automatically.

※ If [Customize] is selected in the [Fluid Type], follow the setting stated in 1.5 [Fluid Sound Speed]; if [Customize] is selected in [Tube Material], follow the setting stated in 1.6 [Tube Sound Speed].

Fluid Type (1.1)		Tube Material (1.4)
Outer diameter of the tube (1.2)		0 Stainless steel
Tube Thickness (1.3)		1 Carbon steel
Tube Material (1.4)		2 Polyurethane
Fluid Sound Speed (1.5)		2 Custom
Tube Sound Speed (1.6)		
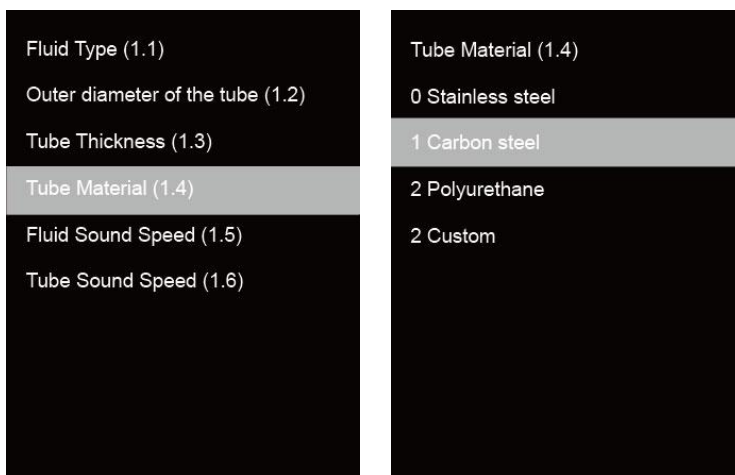
11. Error Message and Troubleshooting

Abnormality	Cause of Failure	Solution
The instantaneous flow is unstable.	The tube is not completely full.	1. Ensure the tube is completely full of liquid. 2. The damping time is prolonged.
	High level of gas entrainment in the tube.	1. Avoid installing the meter near the pump outlet. 2. Install a degassing device.
	Incomplete fluid mixing.	Install the flow meter where the fluids are fully mixed.
Instantaneous flow is shown as zero.	The flow rate is present but yet lower than the setting of the low-flow masking value.	1. Increase the normal operating flow rate or use the tube with smaller diameter. 2. Try to decrease the low-flow masking value.
	No signal shown on the signal strength indicator	1. Ensure that there is liquid in the tube. 2. Ensure that the clamped tube has a smooth surface and be free of inner lining or severe build-up of dirt/scale.

12. Reference Sound Speed Table

12.1 Sound Velocity in Liquid

Liquid	Sound velocity (m/s)
Water (25°C)	1497
Methyl alcohol	1121
Ethanol	1168
Acetone	1190
Toluene	1170
Ethylbenzene	1340
Chlorobenzene	1289

12.2 Sound Velocity in Tube Material

Tube material	Sound velocity (m/s)
Carbon steel	3200
Stainless Steel	3120
PVC	2280
Copper	2270
Cast iron	2500
Polycarbonate (PC)	2300

13. Parameter Settings and Functions

13.1 Menu Setting Process

Menu 1	Menu 2	Menu 3	Unit	Default Value	Set value scope	Description of function
Parameter Configuration (1) (Measuring Setting)	Fluid Type (1.1)	N/A	-	0	0: Water 1: Oil 3: Customize	Set the [Fluid Type]. If [Customize] is selected, set the [Fluid Sound Speed] additionally (1.5)
	Outer diameter of the tube (1.2) (Tube OD.)	N/A	mm	32	0.0~1000	Set the target outer diameter of the tube
	Tube Thickness (1.3)	N/A	mm	2	0.0~100	Set the target thickness of the tube
	Tube Material (1.4)	N/A	-	0	0. Stainless Steel 1. Carbone Steel 2. PVC 3. Customize	Set the [Tube Material]. If [Customize] is selected, set the [Tube Sound Speed] additionally (1.6)
	Fluid Sound Speed (1.5)	N/A	m/s	1497	0~9999	Set the [Fluid Sound Speed] when the [Customize] is set in [Fluid Type].
	Tube Sound Speed (1.6)	N/A	m/s	3120	0~9999	Set the [Tube Sound Speed] when the [Customize] is set in [Tube Material].

Menu 1	Menu 2	Menu 3	Unit	Default Value	Set value scope	Description of function
Basic Setting (2)	Tag Number (2.1)	N/A	-	00001	00001~65535	Tag number for customer-end factory management
	Tube Size (2.2)	N/A	DN	25	15, 20, 25, 32, 40	
	Flow Rate Unit (2.3)	N/A	-	L/m	"L/s", "L/m", "L/h", "m3/s", "m3 /m", "m3/h", "gal/s", "gal/m", "gal/h"	The system will display the corresponding setting unit for the instantaneous flow automatically.
	Flow Span (2.4)	N/A	Display Value	1000	0.0~9999.0	This directly corresponds to the 4-20mA output and the frequency output
	Flow Direction (2.5)	N/A	-	Forward	Forward, Reverse	Flow direction setting: When the [Reverse] is set, the originally displayed negative flow will be converted to a positive flow.
	Flow Direction (2.6)	N/A	-	Disable	Disable, Enable	Negative flow measurement: if [Disable] is set, any negative flow will be displayed as 0
	Total Unit (2.7)	N/A	Actual	Liter	Liter, m³, gal	The total flow is set automatically with this unit
	Total Mode (2.8)	N/A	None	Forward	Forward, Reverse, Bi-direction	Σ+ forward flow measurement, Σ- reverse flow measurement, Σ△ bi-direction measurement (△= forward – reverse)
	Total Reset (2.9)	N/A	None	Cancel	Cancel, Accept	The current displayed total flow will be reset.

Menu 1	Menu 2	Menu 3	Unit	Default Value	Set value scope	Description of function
Advanced Setting (3)	Zero Calculate (3.1)	N/A	m/s	Actual	-0.5000~+0.5000	The compensation at the zero point when the tube is full and there is no flow rate
	K-Factor (3.2)	N/A	None	1.000	0.000~3.000	Characteristic parameters of the flow transducer; actual value = measured value*k
	Low Flow Cutoff (3.3)	N/A	%	1	0.00~100.00	If a slight flow or vibration occurs in the tube line, seek for the low flow display shielding (the system will display and accumulate the value if the flow rate is higher than such value).
	Forward Total Initial Value (3.4)	N/A	=Total Unit	0	0~9999999999	Initialize the current total forward flow
	Reversed Total Initial Value (3.5)	N/A	=Total Unit	0	0~9999999999	Initialize the current total reverse flow

Menu 1	Menu 2	Menu 3	Unit	Default Value	Set value scope	Description of function
I/O Signal Setting (4)	Damping Time (4.1)	N/A	Second (s)	6	0~50	Calculate the average value of the actual flow
	Display Reflash Rate (4.2)	N/A	Second (s)	0.5	0.25, 0.5, 1, 2.5, 5, 10, 30, 60	Display the reflash rate of readings
	Measuring Mode (4.3)			Standard	Normal, Anti Bubble	Different modes correspond to dedicated numerical processing methods
	Digital Out Mode (4.4)	N/A	None	Pulse NO	Pulse N.O., Pulse N.C., Frequency, Alarm N.O., Alarm N.C.	Function assignment for output contact: The pulse output is used for total flow per unit time, frequency is used for flow rate (if frequency is selected, it represents the flow rate), and alarm corresponds to the alarm output function.
	Pulse Out Unit (4.5)	N/A	Unit/pulse	0.1 L	0.001~100(L, m³) L/pulse, m3/pulse	The flow represented by each pulse can be set.
	Max. Frequency (4.6)	N/A	Hz	2000	0~2000	The maximum output frequency value under the set flow span.
	Curr. Mode (4.7)	N/A	None	4-20	4-20, 20-4	Select the current output mode
	4mA Fine-Tune (4.8)	N/A	DAC Count	0	-5000~5000	Adjust the reference value for 4mA output

	20mA Fine-Tune (4.9)	N/A	DAC Count	0	-5000~5000	Adjust the reference value for 20mA output
	Filter Variation (4.10)	N/A	m/s	1	00.000~10.000	Settings for reducing the variation level in flow surge
	Filter Weight (4.11)	N/A	%	10	0~100	Reduce the variation in flow surge
	Median Filter (4.12)	N/A	-	Enable	Disable, Enable	Reduce the impact of noise during flow measurement

Menu 1	Menu 2	Menu 3	Unit	Default Value	Set value scope	Description of function
Alarm Setting (5)	Alarm Flow Rate (5.1)	N/A	Display Value	0	0.0~9999.0	Set alarm flow rate
	Alarm Hysteresis (5.2)	N/A	%	10	0~100	Set the reset percentage of alarm flow rate
	Alarm reset time (5.3)		sec	3	0~100	Set the reset time of alarm flow rate
	Empty Tube Set (5.4)	N/A	N/A	Enable	Disable, Enable	No echo on the measurement signal triggers the empty tube status
	Alarm Func. (5.5)	N/A	N/A	Min Flow Rate Alarm	None, Max. Flow Rate Alarm, Min. Flow Rate Alarm, Empty Tube Alarm	Select the conditions for triggering the alarms

Menu 1	Menu 2	Menu 3	Unit	Default Value	Set value scope	Description of function
System Setting (6)	System Language (6.1)	N/A	N/A	English	English, Traditional Chinese, Simplified Chinese	System display language
	ModBus Comm. (6.2)	Modbus ID	N/A	1	1~255	Basic communication setting
		BaudRate	BPS	9600	9600, 19200, 38400, 57600	
		Data bit	N/A	8	8	
		Parity	N/A	None	None, odd, even	
		Stop bit	N/A	1	1, 2	
	System Info. (6.3)	[PAGE 1] Flow Velocity: xx.xxx m/s Fluid Temp: xxx ℃		Actual	N/A	Measurement information
		[PAGE 2] Flow Velocity: xx.xxx m/s Signal Q: Tup Time: xxx us Tdn Time: xxx us Delta Time: xxx ns Singal Max. level: Singal Gain:		Actual	N/A	Measurement Engineering Information
	LCM flow display digit count (6.4) (LCM Decimal)	N/A	NA	2	1~3	Number of decimal places in the flow rate display
	Set Factory Default (6.5)	N/A	N/A	Cancel	Cancel, Accept	Restore factory default settings
	Set the rotation angle of display (6.6)	N/A	N/A	0	0 (default), 90, 180270	Display Angle Setting

Menu 1	Menu 2	Menu 3	Unit	Default Value	Set value scope	Description of function
Data History (7)	Current Time (7.1)	N/A	N/A	Actual	Year/ Month/ Day/ Hour/ Minute/ Second	Current Time
	Time Setting (7.2)	N/A	N/A	Actual	Year/ Month/ Day/ Hour/ Minute/ Second	Set time
	Contract Time (7.3) (hour)	N/A	hour	0	0~23: 0~59	Set the hour and minute for the Contract Time
	Daily Run (4)		=Total Unit	Actual	0~9999999999	Display the daily run for the entire previous day, calculated based on the Contract Time point
	Delete Log (7.5)	N/A	N/A	Cancel	Cancel, Accept	Clear all records

Menu 1	Menu 2	Menu 3	Unit	Default Value	Set value scope	Description of function
Simulation (8) (Return to the normal mode upon leaving the menu)	Flow Rate (8.1)	N/A	Display value	0	0.0~9999	Simulate the flow to have the system react correspondingly. (Return timing is not available on the menu.)
	Output Curr. (8.2)	N/A	mA	4mA	3.6~22	Only the current output port reacts. (Return timing is not available on the menu.)
	Output 1 Status (8.3)	N/A	N/A	OPEN	OPEN / CLOSED	Test the functionality of the DO output contact. (Return timing is not available on the menu.)

Menu 1	Menu 2	Menu 3	Unit	Default Value	Set value scope	Description of function
Product Info (9) (Information)	F.W. Version (9.1)	N/A	-	Actual		

14. MODBUS Communication Protocol

Address (Hex)	Address (Dec)	Variable Name	Data Type	Unit	Default	Range	Definition	Authority
0x1000	Header-Read-Only Area							
0x1000	4096	gt modbus slave fine tek id[0]	UINT16	N/A			"FI"	Read only(Header)
0x1001	4097	gt_modbus_slave_fine_tek_id[2]	UINT16	N/A			"NE"	Read only(Header)
0x1002	4098	gt_modbus_slave_fine_tek_id[4]	UINT16	N/A			"-T"	Read only(Header)
0x1003	4099	gt_modbus_slave_fine_tek_id[6]	UINT16	N/A			"EK"	Read only(Header)
0x1004	4100	PFC_PRODUCT_TYPE	UINT16	N/A			"FM"	Read only(Header)
0x1005	4101	PFC_PRODUCT_NUMBER	UINT16	N/A			0x0001	Read only(Header)
0x1006	4102	PFC_PRODUCT_VERSION	UINT16	N/A			0x0001	Read only(Header)
0x1010		Measuring status-Read-Only Area						
0x1010	4112	PFC PRODUCT VERSION	UINT16	N/A	N/A		FW Version (Master) (9.1)	Read only
0x1011	4113	PFC_SIGNAL_QUALITY	UINT16	%	N/A	0～100	Signal Q: Signal Quality (6.3)	Read only
0x1012	4114	PFC_YEAR	UINT16	Year		00-99:2000~2099	Current Time: Year (7.1)	Read only
0x1013	4115	PFC_MONTH	UINT16	Month	0	1~12	Current Time: Month (7.1)	Read only
0x1014	4116	PFC_DAY	UINT16	Day	0	1~31	Current Time: Day (7.1)	Read only
0x1015	4117	PFC_HOUR	UINT16	Hour	0	1~23	Current Time: Hour (7.1)	Read only
0x1016	4118	PFC_MIN	UINT16	Minute	00	00-59	Current Time: Minute (7.1)	Read only
0x1017	4119	PFC_SEC	UINT16	Second	00	00-59	Current Time: Second (7.1)	Read only
0x1024	4132							Read only
0x1025	4133	PFC_FLOWTOTAL_FWD_VAL_FLOAT64	FLOAT64	Total Unit	Act.	0.0-9999999.9	Forward accumulated flow	Read only
0x1026	4134							Read only
0x1027	4135							Read only
0x1028	4136							Read only
0x1029	4137	PFC_FLOWTOTAL_REV_VAL_FLOAT64	FLOAT64	Total Unit	Act.	0.0-9999999.9	Backward accumulated flow	Read only
0x102A	4138							Read only
0x102B	4139							Read only
0x102C	4140							Read only
0x102D	4141	PFC_FLOWTOTAL_BI_VAL_FLOAT64	FLOAT64	Total Unit	Act.	0.0-9999999.9	Two-way accumulated flow	Read only
0x102E	4142							Read only
0x102F	4143							Read only
0x1030	4144	PFC_FLOWTOTAL_FWD_VAL	FLOAT32	Total Unit	Act.	0.0-9999999.9	Forward accumulated flow capacity less than 10 million	Read only
0x1031	4145							Read only
0x1032	4146	PFC_FLOWTOTAL_FWD_ROLL_OVER_VAL	FLOAT32	Total Unit	Act.	0~9999999	Forward accumulated flow roll-over times. 1 = 10 million	Read only
0x1033	4147							Read only
0x1034	4148	PFC_FLOWTOTAL_REV_VAL	FLOAT32	Total Unit	Act.	0.0-9999999.9	Backward accumulated flow capacity less than 10 million	Read only
0x1035	4149							Read only
0x1036	4150	PFC_FLOWTOTAL_REV_ROLL_OVER_VAL	FLOAT32	Total Unit	Act.	0~9999999	Backward accumulated flow roll-over times. 1 = 10 million	Read only
0x1037	4151							Read only
0x1038	4152	PFC_FLOWTOTAL_BI_VAL	FLOAT32	Total Unit	Act.	0.0-9999999.9	Two-way accumulated flow capacity less than 10 million	Read only
0x1039	4153							Read only
0x103A	4154	PFC_FLOWTOTAL_BI_ROLL_OVER_VAL	FLOAT32	Total Unit	Act.	0~9999999	Two-way accumulated flow roll-over times. 1 = 10 million	Read only
0x103B	4155							Read only
0x103C	4156	PFC_REFLASH_FLOW_RATE_VAL	FLOAT32	Rate Unit	Act.		Instant flow rate value	Read only
0x103D	4157							Read only
0x103E	4158	PFC_REFLASH_FLOW_VELOCITY_VAL	FLOAT32	m/s	N/A		\System Settings\System Info.\Current Flow Velocity (Actual flow rate, matching with the flow) Flow Velocity (6.3)	Read only
0x103F	4159							Read only
0x1042	4162	PFC_CURRENT_OUT_VAL	FLOAT32	mA	Act.		Current output current	Read only
0x1043	4163							Read only
0x1044	4164	PFC_FLOW_HOUR24_FWD_VAL	FLOAT32	Total Unit	Act.		Forward accumulated flow form contract time to current time	Read only
0x1045	4165							Read only
0x1046	4166	PFC_FLOW_HOUR24_REV_VAL	FLOAT32	Total Unit	Act.		Backward accumulated flow form contract time to current time	Read only
0x1047	4167							Read only
0x1048	4168	PFC_FLOW_HOUR48_FWD_VAL	FLOAT32	Total Unit	Act.		Forward accumulated flow of last day	Read only
0x1049	4169							Read only
0x104A	4170	PFC_FLOW_HOUR48_REV_VAL	FLOAT32	Total Unit	Act.			Read only

Address (Hex)	Address (Dec)	Variable Name	Data Type	Unit	Default	Range	Definition	Authority
0x104B	4171						Backward accumulated flow of last day	Read only
0x104C	4172	PFC_FLOWTOTAL_HOUR24_FWD_VAL	FLOAT32	Total Unit	Act.		Forward accumulated flow until yesterday	Read only
0x104D	4173							Read only
0x104E	4174	PFC_FLOWTOTAL_HOUR24_REV_VAL	FLOAT32	Total Unit	Act.		Backward accumulated flow until yesterday	Read only
0x104F	4175							Read only
0x1050	4176	PFC_FLOWTOTAL_HOUR48_FWD_VAL	FLOAT32	Total Unit	Act.		Forward accumulated flow until two day ago	Read only
0x1051	4177							Read only
0x1052	4178	PFC_FLOWTOTAL_HOUR48_REV_VAL	FLOAT32	Total Unit	Act.		Backward accumulated flow until two day ago	Read only
0x1053	4179							Read only

Address (Hex)	Address (Dec)	Variable Name	Data Type	Unit	Default	Range	Definition	Authority
0x1090		Parameter set – The field allowed for reading and writing.						
0x1090	4240	PFC PRODUCTION YEAR	UINT16	Year			Product production year Ex 2022 (BCD)	Read /Write
0x1091	4241	PFC_PRODUCTION_MONTHDAY	UINT16	Month & Day			Product production month and day Ex 0130 (BCD)	Read /Write
0x1092	4242		UINT16				"BE"	Read /Write
0x1093	4243		UINT16				"-1"	Read /Write
0x1094	4244		UINT16				"12"	Read /Write
0x1095	4245	PFC_PRODUCTION_SERIAL_NUMBER	UINT16	Production Serial Number	Actual Value	Ex. EB1-210801960001	"80"	Read /Write
0x1096	4246		UINT16				"10"	Read /Write
0x1097	4247		UINT16				"69"	Read /Write
0x1098	4248		UINT16				"00"	Read /Write
0x1099	4249		UINT16				"10"	Read /Write
0x109A	4250	PFC_MATERIAL	UINT16	-	0	0: Water 1: Oil 2: Customize	Fluid Type (1.1): Set the [Fluid Type]. If [Customize] is selected, set the [Fluid Sound Speed] additionally (1.5)	Read /Write
0x109B	4251	PFC_BASIC_SET_PIPE_DIAMETER	UINT16	mm	32	0.0~1000	Outer diameter of the tube (1.2): Set the target outer diameter of the tube	Read /Write
0x109C	4252	PFC_BASIC_SET_PIPE_THICKNESS	UINT16	mm	2	0.0~100	Tube Thickness (1.3): Set the target thickness of the tube	Read /Write
0x109D	4253	PFC_BASIC_SET_PIPE_MATERIAL	UINT16	-	0	0. Stainless Steel 1. Carbon Steel . PVC . Customize	Tube Material (1.4): Set the [Tube Material]. If [Customize] is selected, set the [Tube Sound Speed] additionally (1.6)	Read /Write
0x109E	4254	PFC_FLUID_SOUND_SPEED	UINT16	m/s	1497	0-9999	Sound Velocity in Fluid (1.5): Set the [Fluid Sound Speed] when the [Customize] is set in [Fluid Type] (1.1).	Read /Write
0x109F	4255	PFC_PIPE_SOUND_SPEED	UINT16	m/s	3120	0-9999	Sound Velocity in Tube (1.6): Set the [Tube Sound Speed] when the [Customize] is set in [Tube Material] (1.4).	Read /Write
0x10A0	4256	PFC_TAG_NUM	UINT16	-	00001	00001~65535	Tag Number: For customer-end factory management (2.1)	Read /Write
0x10A1	4257	PFC_BASIC SET TUBE SIZE	UINT16	DN	25	15,20,25,32,40	Tube Size: Set the applicable diameter of the product (default) (2.2)	Read /Write
0x10A2	4258	PFC_BASIC_SET_FLOW_TOTAL_UNIT	UINT16	Actual	Liter	0: Liter m3 (cubic meter) gal	Total Unit: The total flow is set automatically with this unit (2.7)	Read /Write
0x10A3	4259	PFC_BASIC_SET_TOTAL_MODE	UINT16	None	Forward	0: Forward 1: Reverse 2: Bi-direction	Total Mode: Σ+forward flow measurement, Σ-reverse flow measurement, Σ△ bi-direction measurement (△= forward – reverse) (2.8)	Read /Write
0x10A4	4260	PFC_BASIC_SET_TOTAL_RESET	UINT16	None	Cancel	0: Cancel 1: Accept	Total Reset: The current displayed total flow will be reset. (2.9)	Read /Write

Address (Hex)	Address (Dec)	Variable Name	Data Type	Unit	Default	Range	Definition	Authority
0x10A5	4261	PFC_BASIC_SET_FLOW_RATE_UNIT	UINT16	-	L/m	0: L/s L/m L/h m3/s m3/m m3/h gal/s gal/m gal/h	Flow Rate Unit: The system will display the corresponding setting unit for the instantaneous flow automatically (2.3)	Read /Write
0x10A6	4262	PFC_BASIC_SET_FLOW_DIR	UINT16	-	Forward	0: Forward 1: Reverse	Flow Direction: Flow direction setting: When the [Reverse] is set, the originally displayed negative flow will be converted to a positive flow. (2.5)	Read /Write
0x10A7	4263	PFC_NEGATIVE_FLOW_MEASURE	UINT16	-	Forward	0: Disable 1: Enable	Flow Direction: Negative flow measurement: if [Disable] is set, any negative flow will be displayed as 0(2.6)	Read /Write
0x10A8	4264	PFC_MEDIAN_FILTER	UINT16	-	Enable	0: Disable 1: Enable	Median Filter: Reduce the impact of noise during flow measurement (4.12)	Read /Write
0x10A9	4265	PFC_MOVING_AVG_SEC	UINT16	second (s)	6	0~50	Damping Time: Calculate the average value of the actual flow (4.1)	Read /Write
0x10AA	4266	PFC_DISPLAY_REFLASH_RATE	UINT16	second (s)	0.5	0: 0.25 0.5 1 2.5 5 10 30 60	Display Reflash Rate: Display the reflash rate of readings (4.2)	Read /Write
0x10AB	4267	PFC_MEASURING_MODE	UINT16	0	Standard	0: Normal 1: Anti Bubble	Measuring Mode: Different modes correspond to dedicated numerical processing methods (4.3)	Read /Write
0x10AC	4268	PFC_Max_Freq	UINT16	Hz	2000	0~2000	Max Frequency: The maximum output frequency value under the set flow span (4.6)	Read /Write
0x10AD	4269	PFC_CURRENT_TOP_BOTTOM	UINT16	None	4-20	0: 4-20 mA 1: 20-4 mA	Curr. Mode: Select the current output mode (4.7)	Read /Write
0x10AE	4270	PFC_4mA_offSet	INT16	DAC Count	0	-5000~5000	4mA Fine-Tune: Adjust the reference value for 4mA output (4.8)	Read /Write
0x10AF	4271	PFC_20mA_offSet	INT16	DAC Count	0	-5000~5000	20mA Fine-Tune: Adjust the reference value for 20mA output (4.9)	Read /Write
0x10B0	4272	PFC_DIGITAL_OUT_MODE	UINT16	None	Pulse NO	0: Pulse N.O. 1: Pulse N.C. 2: Frequency 3: Alarm N.O. 4: Alarm N.C.	Digital Out Mode: Function assignment for output contact: The pulse output is used for total flow per unit time, frequency is used for flow rate (if frequency is selected, it represents the flow rate), and alarm corresponds to the alarm output function (4.4)	Read /Write
0x10B1	4273	PFC_ALARM_SET_CURR_FUNC	UINT16	N/A	Min Flow Rate Alarm	0: None 1: Max Flow Rate 2: Min Flow Rate Alarm 3: Empty Tube	Alarm Func.: Select the conditions for triggering the alarms (5.5)	Read /Write

Address (Hex)	Address (Dec)	Variable Name	Data Type	Unit	Default	Range	Definition	Authority
0x10B2	4274	PFC_ALARM_SET_ALARM_1_FUNC	UINT16	N/A	Enable	0: Disable 1: Enable	Empty Tube Set: No echo on the measurement signal triggers the empty tube status (5.4)	Read /Write
0x10B3	4275	PFC_ALERM_RESET_TIME	UINT16	sec	3	0~100	Alarm reset time: Set the reset time of alarm flow rate (5.3)	Read /Write
0x10B4	4276	PFC_ALERM_SET_HYSTERESIS	UINT16	%	10	0~100	Alarm Hysteresis: Set the reset percentage of alarm flow rate (5.2)	Read /Write

0x10B5	4277	PFC_LANGUAGE	UINT16	N/A	0	0: English 1: Traditional Chinese 2: Simplified Chinese	System Language: System Settings/System Language (6.1)	Read /Write
0x10B6	4278	PFC_MODBUS_ID	UINT16	N/A	1	1 ~ 255	Modbus ID: System Settings/MODBUS Comm./Modbus ID (6.2)	Read /Write
0x10B7	4279	PFC_MODBUS_BAUDRATE	UINT16	BPS	0	0: 9600bps 1: 19200bps 2: 38400bps 3: 57600bps	Modbus BaudRate: System Settings/MODBUS Comm./BaudRate (6.2)	Read /Write
0x10B8	4280	PFC_MODBUS_DATA_BIT	UINT16	N/A	8	0: 8 bits 1: 9 bits	Modbus Data Bit: System Settings/MODBUS Comm./Data bit (6.2)	Read /Write
0x10B9	4281	PFC_MODBUS_STOP_BIT	UINT16	N/A	0x0000	0: 1 bit 1: 2 bits	Modbus Stop Bit: System Settings/MODBUS Comm./Stop bit (6.2)	Read /Write
0x10BA	4282	PFC_MODBUS_PARITY	UINT16	N/A	0x0000	0: None 1: Even Parity 2: Odd Parity	Modbus Parity: System Settings/MODBUS Comm./Parity (6.2)	Read /Write
0x10BB	4283	PFC_LCD_DECIMAL	UINT16	N/A	2	1~3	Number of digits for flow displayed on LCM (6.4) (LCM Decimal)	Read /Write
0x10BC	4284	PFC_RESTORE_FACTORY_SETTING	UINT16	N/A	Cancel	0: Cancel 1: Accept	Set Facto, Default: Restore factory default settings (6.5)	Read /Write
0x10BD	4285	PFC CONTRACT TIME	UINT16	hour	0	0~23: 0~59	Contract Time: Set the hour and minute for the Contract Time (7.3)	Read /Write
0x10BF	4287	PFC_DELETE_LOG	UINT16	N/A	Cancel	0: Cancel 1: Accept	Delete Log: Clear all records (7.5)	Read /Write
0x10C0	4288	PFC_SIMULATION_FUNC_STATE	UINT16	N/A	0	0: None 1: Flow Simulation 2: Current Output Simulation 3: Output Contact 1 Status Simulation	Simulation: Signal Simulation Functions (8.1)(8.2)(8.3)	Read /Write
0x10C1	4289	PFC_SIMULATION_OUTPUT_1_STATUS	UINT16	N/A	OPEN	0: OPEN 1: CLOSED	Simulation Output1 Status: Test the functionality of the DO output contact. (Return timing is not available on the menu) (8.3)	Read /Write
0x10C2	4290	PFC_SAVE_SYSTEM_VAR_TO_EEPROM	UINT16	N/A	0	0: None 1: Write	All current parameters are stored in the user parameter area	Read /Write
0x10C3	4291	PFC_ENG_M ODE_SAVE_SETTING	UINT16	N/A	0	0: None 1: Write	All current parameters are stored in the factory parameter area	Read /Write
0x10C4	4292	PFC_PULSE_OUT_FUNC_MODE	UINT16	N/A	0	0: PNP Mode 1: NPN Mode	Pulse Out Mode	Read /Write
0x10C5	4293	PFC_ROTATION	UINT16		0	0: 0 degree (default) 1: 90 degrees 2: 180 degrees 3: 270 degrees	Set the rotation angle of display: Display Angle Setting (6.6)	Read /Write
0x10C6	4294	PFC_LOAD_DEFAULT_SETTING	UINT16	N/A	0	0: None 1: Write	Save the default values to the user parameter area	Read /Write
0x10C7	4295	PFC_LOAD_FIRMWARE_SETTING	UINT16	N/A	0	0: None 1: Write	Save the default values to the factory parameter area & user parameter area	Read /Write

Address (Hex)	Address (Dec)	Variable Name	Data Type	Unit	Default	Range	Definition	Authority
0x10E0	4320							Read /Write
0x10E1	4321	PFC_BASIC_SET_FLOW_SPAN	FLOAT32	Display Value	1000	0.0~9999.0	Flow Span: This directly corresponds to the 4-20mA output and the frequency output (2.4)	Read /Write
0x10E2	4322						Zero Offset: The compensation at the zero point when the tube is full and there is no flow rate (3.1)	Read /Write
0x10E3	4323	PFC_ADVANCED_SET_ZERO_ADJ	FLOAT32	m/s	Actual	-0.5000~+0.5000		Read /Write
0x10E4	4324						K-Factor: Characteristic parameters of the flow transducer; actual value = measured value*k (3.2)	Read /Write
0x10E5	4325	PFC_ADVANCED_SET_K_FACTOR	FLOAT32	None	1.000	0.000~3.000		Read /Write
0x10E6	4326						Low Flow Cutoff: Look for low cutoff when there is a microflow or vibration in the tube. (The display and cumulation occur only when the flow rate is greater than this value) (3.3)	Read /Write
0x10E7	4327	PFC_DISPLAY_SWITCH_LOW_LIMIT	FLOAT32	%	0.3	0.00~100.00		Read /Write
0x10E8	4328						Fwd. Total Init.: Initialize the current total forward flow (3.4)	Read /Write
0x10E9	4329	PFC_FWD_TOTAL_FLOW_INIT	FLOAT64	Liter	0	0~9999999999		Read /Write
0x10EA	4330							Read /Write
0x10EB	4331							Read /Write
0x10EC	4332						Rev. Total Init.: Initialize the current total reverse flow (3.5)	Read /Write
0x10ED	4333	PFC_REV_TOTAL_FLOW_INIT	FLOAT64	Liter	0	0~9999999999		Read /Write
0x10EE	4334							Read /Write
0x10EF	4335							Read /Write
0x10F0	4336						Filter Variation: Settings for reducing the variation level in flow surge (4.10)	Read /Write
0x10F1	4337	PFC_FILTER_VARIATION	FLOAT32	m/s	1	00.000~10.000		Read /Write
0x10F2	4338	PFC_FILTER_WEIGHT	FLOAT32	%	10	0~100	Filter Weight: Reduce the variation in flow surge (4.11)	Read /Write
0x10F3	4339							Read /Write
0x10F4	4340	PFC_PULSE_OUT_UNIT	FLOAT32	Liter	0.1 L	0.001~100(L,M3) L/pulse, m3/pulse	Pulse Out Unit: The flow represented by each pulse can be set (4.5)	Read /Write
0x10F5	4341							Read /Write
0x10F6	4342	PFC_ALARM_SET_MAX_FLOW_RATE	FLOAT32	Display Value	0	0.0-9999.0	Alarm Flow Rate: Set the alarm flow rate (5.1)	Read /Write
0x10F7	4343							Read /Write
0x10F8	4344						Simulation Flow Rate: Simulate the flow to have the system react correspondingly, but the total flow does not accumulate. (Return timing is not available on the menu) (8.1)	Read /Write
0x10F9	4345	PFC_SIMULATION_FLOW_RATE	FLOAT32	Display value	0	0.0~9999		Read /Write
0x10FA	4346						Simulation Output Curr.: Only the current output port reacts. (Return timing is not available on the menu) (8.2)	Read /Write
0x10FB	4347	PFC_SIMULATION_OUTPUT_CURR	FLOAT32	mA	4mA	3.6-22		Read /Write
0x10FC	4348	PFC_SIMULATION_FLOW_VALOCITY	FLOAT32	m/s	N/A		Simulation flow velocity	Read /Write
0x10FD	4349							Read /Write
0x10FE	4350						Daily Run: Display the daily run for the entire previous day, calculated based on the Contract Time point (7.4)	Read /Write
0x10FF	4351	PFC_DAILY_RUN	FLOAT32	= Total Unit	Actual	0~9999999999		Read /Write