

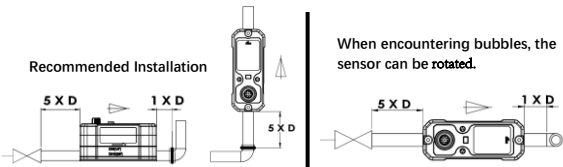
Quick Install Guide

Scope

This manual provides installation, wiring, electrical parameters, and ordering information for the XFT clamp-on ultrasonic flow meter. To avoid personal injury or property damage, please carefully read and comply with all the contents of this manual, including safety precautions and warnings. If you have any questions, please contact the Gems technical support team before proceeding.

Precautions

- When installing, do not use excessive torque to tighten the pipe clamp and the main sensor unit.
- Using the product beyond its specified range may affect its performance and lifespan.
- Before using the product, ensure all pipeline parameters, including outer diameter, wall thickness, and material, are correctly programmed. The product is calibrated for the ordered model before shipment. Changing the material may affect the absolute accuracy of the measurement.
- The presence of bubbles in the measuring fluid and the pipe's filled condition can impact the accuracy of ultrasonic measurements. To achieve more accurate flow measurements, select measurement points where the fluid flow field is evenly distributed to ensure stable measurements. Follow these principles during installation:
 - Choose pipe sections filled with fluid, such as vertical sections (fluid flowing upwards) or fully filled horizontal sections. Although the product has good adaptability to installation positions, different fluids, pipeline designs, and pipeline components can affect fluid stability.
 - For optimal measurement accuracy, it is recommended to maintain a distance of 5 times the pipe's inner diameter from upstream interference sources and 1 time the inner diameter from downstream interference sources, if conditions allow. If these distances are not met, turbulence and bubbles may form inside the pipeline, potentially affecting measurement accuracy.
 - In the presence of bubbles, it is recommended to install the sensor head rotated at an angle (see diagram). Consider the scaling conditions on the inner pipe wall and choose sections with minimal scaling for measurement. Select pipe sections that are uniform, dense, and conducive to ultrasonic transmission.



Installation Process

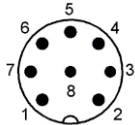


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Clean the pipeline Remove impurities such as loose paint, rust, and stains from the surface.	
Installing the Pipe Clamp Place the upper and lower pipe clamps at the selected position on the pipeline. Securely tighten the upper and lower pipe clamps using 4 screws (torque is 0.5N·m) to ensure stability without any loss. To ensure the upper and lower clamps are parallel, tighten the screws in the order of 1, 2, 3, and 4.	
Installing the Sensor Mount the main unit onto the upper pipe clamp and tighten the 2 screws (torque is 0.5N·m). Ensure that the flow direction arrow on the instrument nameplate is aligned with the direction of fluid flow in the pipeline. The center part of the sensor comes with a special coupling pad (pre-installed at the factory). After installation, ensure that the sensor coupling is tightly pressed against the pipe wall before beginning measurement. Otherwise, flow data may not be detected.	
Power On and Start Measurement Connect cable and tighten the plug. Connect the other end of the cable to the power supply. Observe the display interface; a green square in the upper right corner indicates that stable measurement has been achieved.	

XFT Clamp-On Ultrasonic Flow Transmitter

Wiring



M12 A-CODE 8pin Male

No.	Color	Name	Definition
1	White	T-Out	Temperature 4-20mA
2	Brown	A+	RS485+
3	Green	B-	RS485-
4	Yellow	GND	Common
5	Gray	VCC	12-30VDC power
6	Pink	N/A	Reserved
7	Blue	F-Out	Flowrate 4-20mA
8	Red	N/A	Reserved

Analog common shared with power common

Specification

Supply Voltage	12~30 VDC, with reverse polarity protection												
Output	4~20 mA, Modbus® RTU, with short circuit protection												
Connection	M12 A-Code 8pin Male												
Damping	0.5, 1, 5 (default), 10 s												
Measure Range	<table><tr><td>2-30 L/min (0.53-7.93 GPM)</td><td>OD 16-18mm</td></tr><tr><td>5-60 L/min (1.32-15.85 GPM)</td><td>OD 18-23mm</td></tr><tr><td>10-100 L/min (2.64-26.42 GPM)</td><td>OD 23-28mm</td></tr><tr><td>15-200 L/min (3.96-52.83 GPM)</td><td>OD 28-37mm</td></tr><tr><td>20-300 L/min (5.28-79.25 GPM)</td><td>OD 37-44mm</td></tr><tr><td>40-400 L/min (10.57-105.67 GPM)</td><td>OD 44-52mm</td></tr></table>	2-30 L/min (0.53-7.93 GPM)	OD 16-18mm	5-60 L/min (1.32-15.85 GPM)	OD 18-23mm	10-100 L/min (2.64-26.42 GPM)	OD 23-28mm	15-200 L/min (3.96-52.83 GPM)	OD 28-37mm	20-300 L/min (5.28-79.25 GPM)	OD 37-44mm	40-400 L/min (10.57-105.67 GPM)	OD 44-52mm
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Flow Rate Accuracy	OD 16~52mm, ±2% FS The actual measurement accuracy is related to the fluid condition in the pipeline and the installation position.												
Fluid Temperature	0° C to +60° C (+32° F to +140° F) Exceeding the rated temperature range can affect product lifespan and accuracy.												
Temp. Measure Range	0° C to +60° C (+32° F to +140° F)												
Temp. Accuracy	±2 °C												
Operating Temp.	-10° C to +60° C (+14° F to +140° F)												
IP protection	IP66												
Media Compatibility	Compatible with common cooling liquids, ultrapure water, oil-like substances, and more.												
Pipe Compatibility	Compatible with stainless steel, PVC, and PPR pipelines. For other materials, please consult the factory.												
Certificates	CE/RoHS, REACH												

Display

Secondary Display
Display flow rate, temperature, and cumulative volume. These parameters can be adjusted through the menu.

Signal Quality
Red - No signal
Yellow - Poor signal quality
Green - Good signal quality

Display Units
L/min or Gal/min, can be switched via menu

Main Display
Display flow rate, temperature, and cumulative volume. These parameters can be adjusted through the menu.

Flow Rate Output
The display shows the percentage corresponding to the full-scale range set for the 4-20mA output.

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