



# LORRIC

Clamp-on Type Ultrasonic Flowmeters  
FU-LT Series



**QUICKCLAMP™ X EchoSense™**

# FU-LT series

Time and cost efficient without coupling gel



Finish all pipe settings just in few clicks



**EchoSense<sup>®</sup>**

Super Compact Design



Durable & Chemical-resistance with powder coating



**QUICKCLAMP<sup>™</sup>**

Non-invasive, suitable for various application



Easy Installation





## Why choose Ultrasonic Flowmeter?

Non-invasive installation

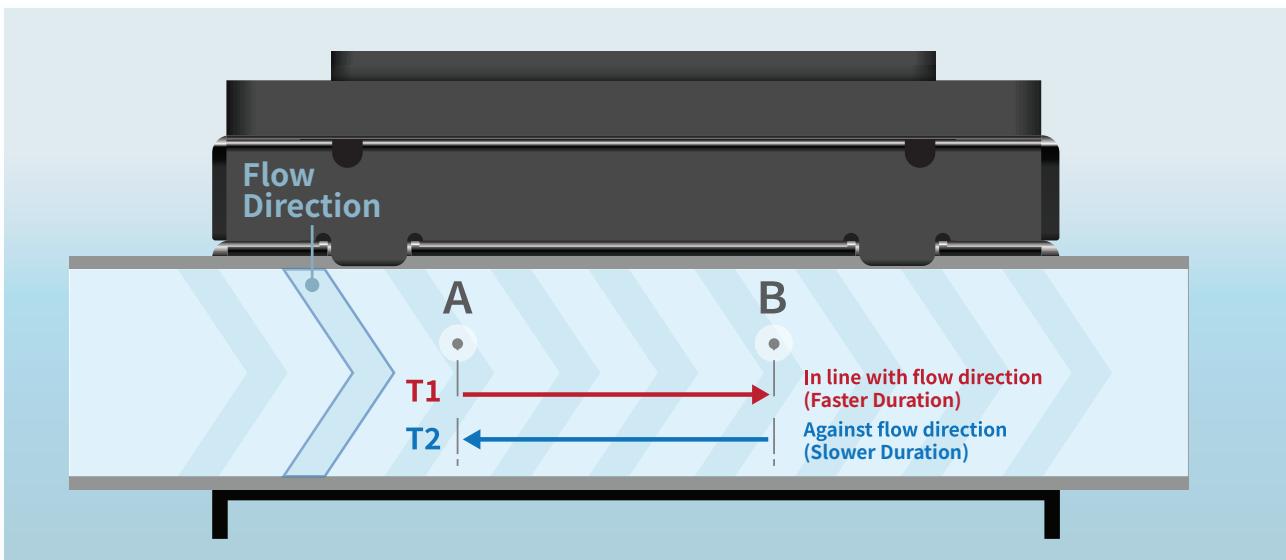
- ✓ No pipe loss
- ✓ No leakage
- ✓ No downtime
- ✓ No pressure drop
- ✓ No contamination

## EchoSense® Technology Principle

Time-of-Flight (ToF) measures wave travel time to accurately determine distance or flow rate.

$$\text{Flow Rate} = \text{Cross-Sectional Area} \times \text{Flow Velocity}$$

Where flow velocity was obtained through the **Time of Flight method**  
(Calculating time offset from **A to B** and **B to A**)



$$\text{Flow velocity} = \text{A to B and B to A time offset} \\ (T2 - T1)$$

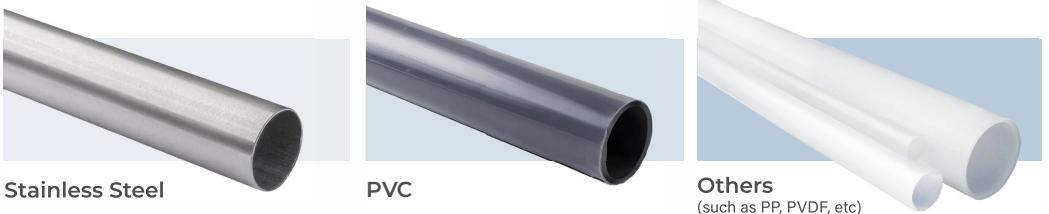
## Applicable to a variety of fluids, pipe materials and diameters.

EchoSense ultrasonic flow meter is highly versatile, capable of accurately measuring water, oil, and various chemicals. It is compatible with multiple piping materials, including stainless steel, PVC, PP, and PVDF, and supports different international pipe standards. The FU-LT Series is specially designed for smaller pipe sizes, ranging from 1/4" to 1".

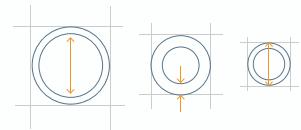
### Applicable Fluids



### Pipe Materials



### Pipe Specs



**1/4" ~ 1"**

For other pipe diameter needs, please contact us



## Durable and Corrosion-Resistant



The FU-LT features a stainless steel body with a high-durability Teflon-based powder-coated finish. This specialized coating provides outstanding resistance to corrosion and chemical exposure, effectively withstanding salt spray, oil and gas environments, and industrial cleaning agents without blistering, peeling, or degradation. Low-VOC and heavy metal-free, the coating stands up to harsh environments and keeps FU-LT performing strong.

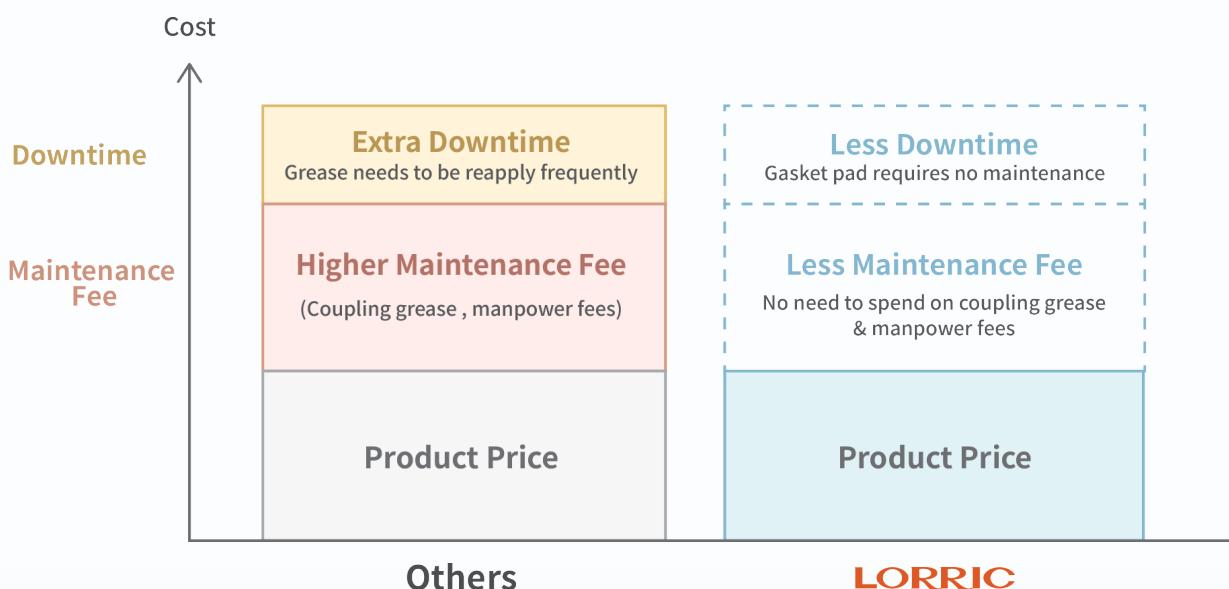
\* Tested and proven to perform reliably in demanding semiconductor environments.

## No More Ultrasonic Gel, More efficient and cost saving operations

Traditional ultrasonic flowmeters rely on coupling gel to ensure proper signal transmission, but this method has several downsides—it's messy, costly, and time-consuming to apply. Overtime, gel can degrade, dry out, or shift, leading to inaccurate measurements and the need for frequent reapplication.



LORRIC's ultrasonic flowmeter eliminates these hassles with an innovative gasket pad design. Instead of using gel, our flowmeter features a durable rubber gasket pad that ensures consistent and reliable signal transmission.



## Ultra-Compact Design

One of the Smallest  
Flowmeters Available



FU-LT is designed to be as compact as possible. This space-saving design is perfect for tight installations and small-diameter pipes where larger flowmeters may struggle to fit. Whether for compact machinery, confined industrial setups, or space-limited applications, it delivers high performance without taking up unnecessary space.

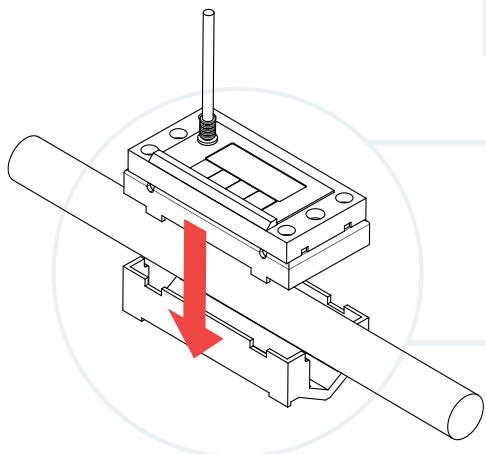


## Perfect for Small Pipe Sizes



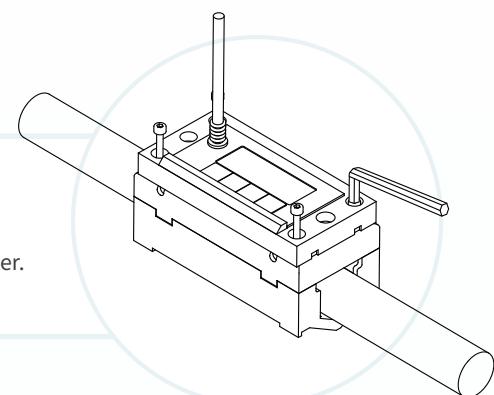
Unlike bulkier models that struggle with smaller pipelines, this device is designed specifically for precision measurement on smaller pipe diameters, expanding your possibilities for use across diverse industries.

# How to Install



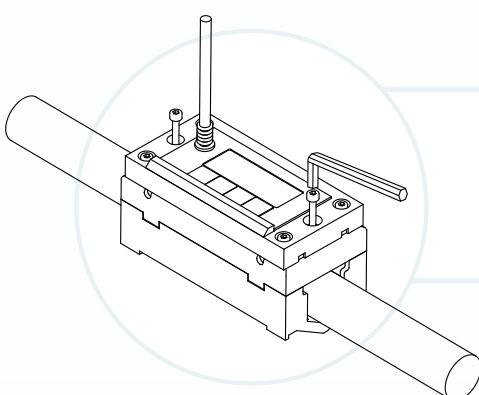
## 1. Clamp the Flowmeter

Secure the flowmeter by clamping it onto the top and bottom of the pipe.



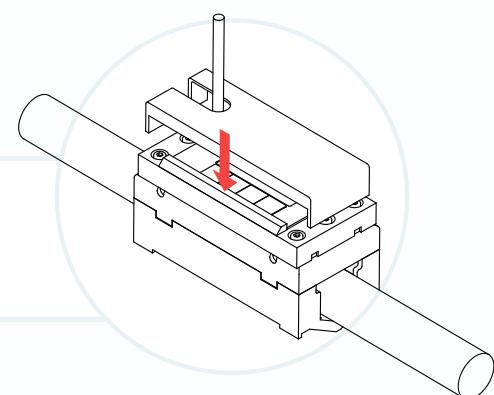
## 2. Lock the Device

Fasten the four screws to firmly attach the flowmeter.



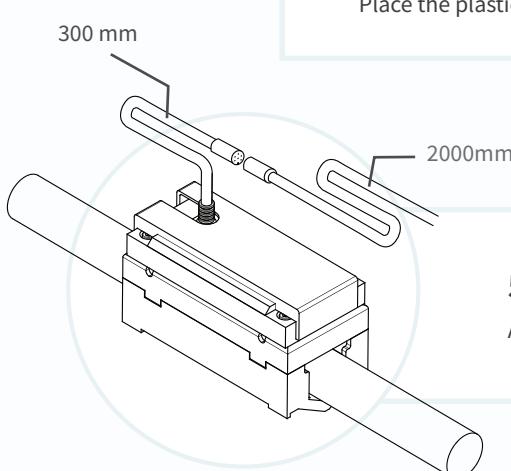
## 3. Secure the Pipe

Adjust and tighten the two middle screws to ensure firm contact with pipe.



## 4. Attach the Cover

Place the plastic cover for protection



## 5. Connect the Power

Attach the power and I/O connector to complete the installation.

# Instant Visual Feedback



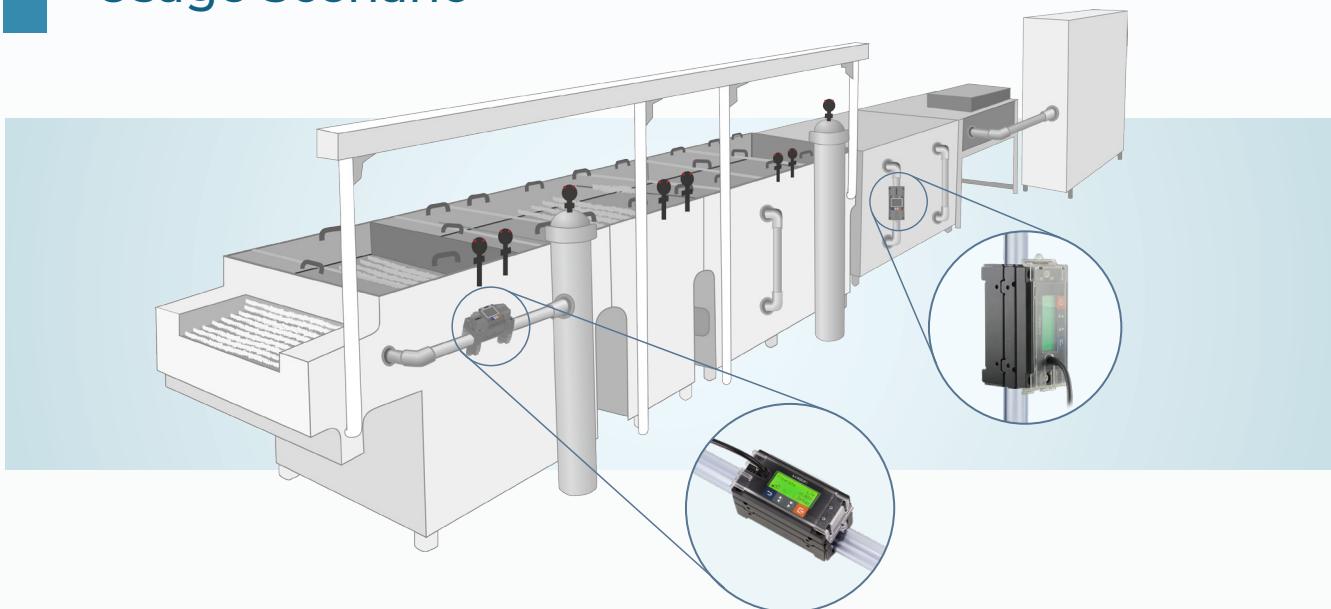
## Effortless Setup with Built-in Pipe Database

No need for manual pipe spec input. The built-in pipe database lets users quickly select the correct pipe size instead of entering wall thickness, inner/outer diameter, and material manually, reducing setup time and potential errors. FU-LT presets multiple pipe diameter options (PVC, PP, PVDF, PFA, stainless steel, copper pipes) for easy selection and quick setup.



# FU-LT series

## Usage Scenario



### Harsh Chemical Environment

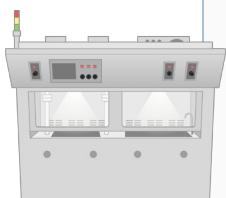
Ultrasonic flowmeters are perfect for chemicals due to their non-invasive design, which avoids direct contact with corrosive or hazardous fluids. Ensuring both accurate measurement and enhanced safety, protecting the fluid and your equipment.

To enhance chemical resistance, we integrate stainless steel 304 for internal structural support, while the outer casing is made of high-strength, chemically resistant industrial-grade leaded NYLON, PPS, and PEEK. This design ensures both durability and structural stability.



### Ideal for Leased or Warrantied Equipment

FU-LT's non-invasive installation requires no pipe cutting or modifications, preserving the integrity of leased equipment or machines under warranty. It allows precise flow measurement without risking warranty voidance or permanent changes.



### Prevent Wastage of Valuable Liquids

FU-LT ensures precise flow control for valuable liquids, minimizing wastage and maximizing efficiency. Its accurate real-time measurement helps protect precious resources and reduces unnecessary losses.



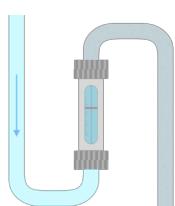
### Replace Manual Flow Recording with Automated Accuracy



FU-LT eliminates the need for manual flow recording by automating the process. Its precision ensures continuous, accurate monitoring, reducing human error and boosting overall efficiency.

### Maintain Purity for Easily Contaminated Liquids

FU-LT's non-invasive design prevents contamination from external materials, keeping sensitive liquids pure. It ensures accurate flow measurement while maintaining fluid integrity in critical applications.



# FU-LT series

## Product Specification

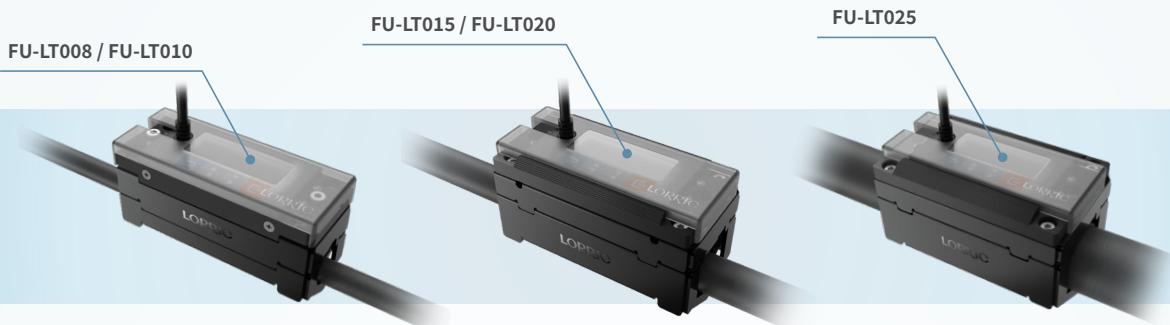
Installation method	Outside the pipe (clamp-on type)				
Applicable pipe material	Metal pipe, Plastic pipe (UPVC/PPH/PVDF/PFA/PTFE)				
Applicable fluid	Various liquids (no impurities or air bubbles)				
Applicable fluid temperature	0~85°C (no ice on the piping surface)				
Velocity Range	$\pm 0.3$ to 6.0 m/s recommended, $\pm 0.1$ to 10m/s measurable				
Language	English, Traditional and Simplified Chinese (others can be customized)				
Units	Metric: Meters, Liters, Cubic Meters Imperial: Feet, Cubic Feet, US Gallon, Imperial Gallon Time: Second, Minute, Hour, Day				
Display Mode	3-color backlight, 3-line 16-character LCD				
Display update cycle	0.5s / 1s				
Display resolution	max resolution 0.0001 (finest)				
Measurement Accuracy*	$\pm 3.0\%$ RD at 10% to 100% of F.S. $\pm 0.3\%$ F.S. at 0% to 10% of F.S.				
Display resolution	max resolution 0.0001 (finest)				
Power demand	DC 24V				
Power I/O Connector	6 Pin quick release connector				
Input/Output	Analog output with self-powered 10-bit 4-20mA Modbus RTU RS485 NPN				
Consumption current	<200mA@24V when starting up and working stably (not included in the communication current)				
Protection circuit	Power reverse connection protection, power surge protection				
Waterproof level	IP66 **				
Ambient temperature	-10~60°C (no freezing)				
Relative humidity	35~85% RH (non-condensing)				
Lid material	PC				
Body material	PPS+GF+PEEK+NBR+Silicon+PA66+GF+PC+GF+SS304+PP				
Weight	FU-LT008 342g	FU-LT010 353g	FU-LT015 426g	FU-LT020 441g	FU-LT025 518g

\* The measurement accuracy is established in a controlled laboratory environment where the pipe and fluid conditions are set and the instrument is calibrated to zero before conducting tests at 25°C. Although statistical results are obtained under these conditions, there may be variances in accuracy when used in customer environments.

\*\* Incorrect installation when rotating the screen by loosening the screws around it may affect the IP66 waterproof protection.

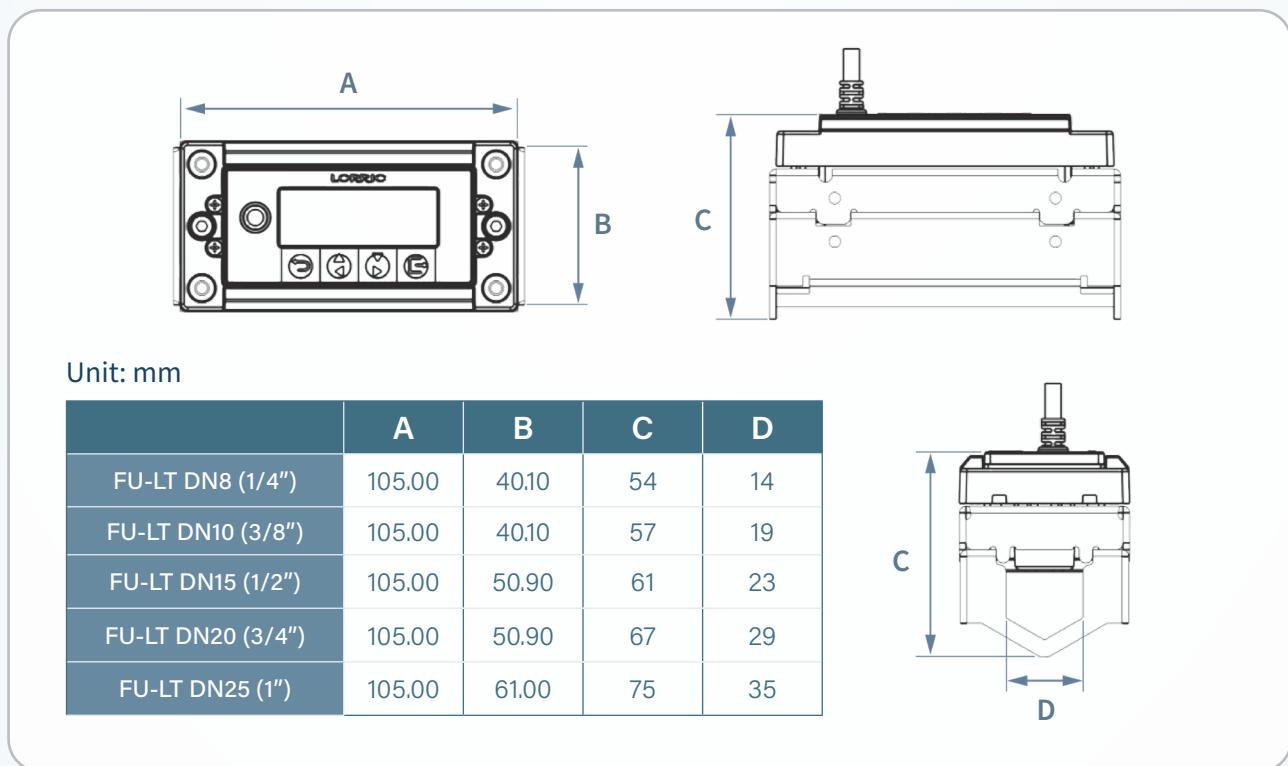
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## Product List & Dimensions



Model	Pipe Size	Flowrate measurement range*	Pipe Outer Diameter
FU-LT08	DN 8 (1/4")	1-20 LPM	12 - 13.8 mm
FU-LT10	DN 10 (3/8")	1-30LPM	15.8 - 18 mm
FU-LT15	DN 15 (1/2")	2.5-60 LPM	19 - 22.5 mm
FU-LT20	DN 20 (3/4")	2.5-100 LPM	25 - 28.6 mm
FU-LT25	DN 25 (1")	5-200 LPM	31.8 - 35 mm

\* Recommended flowrate measurement range, may be inconsistent with different pipelines and liquids





**LORRIC**

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FU-LT Product Page



FU-LT Manual