Truflo® — UltraFlo® UF-500
Clamp-On Ultrasonic Flow Meter Sensor

ICON PROCESS CONTROLS™ Corrosion-Free Instrumentation Equipment

Flow | Total | Pulse | 4-20mA | RS485 | IO-Link

Ultra-Convenient, Ultra-Simple, Ultra-Versatile — UltraFlo®

truflo®

Convenience, Accuracy and Value in an Ultrasonic Flow Meter

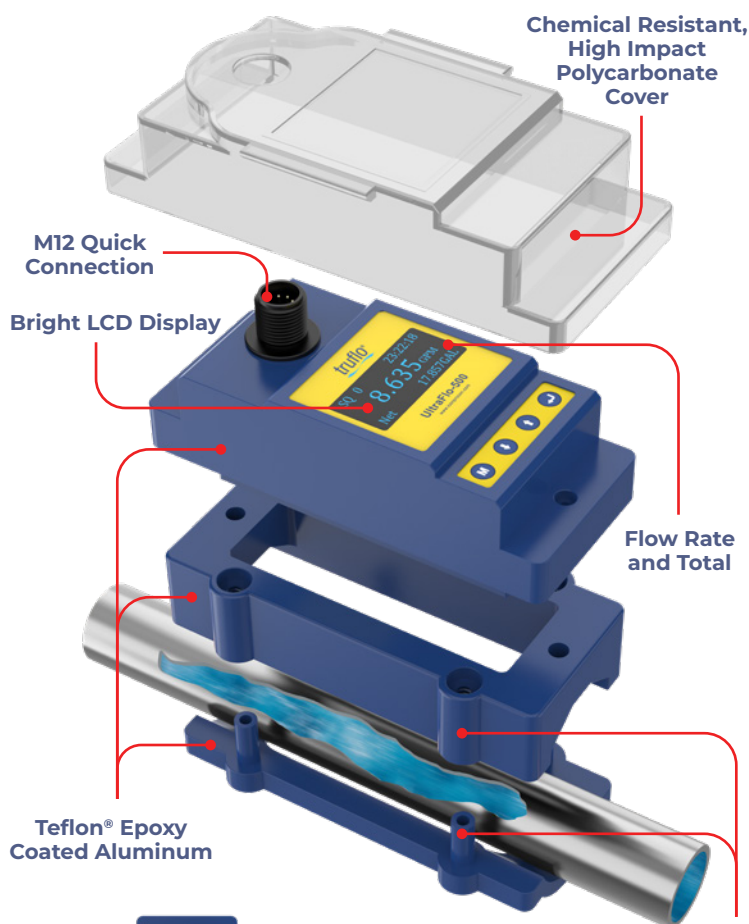# Ultra-Convenient, Ultra-Simple, Ultra-Versatile — UltraFlo®

- ✓ Under 2 Minute Installation Time
- ✓ No Contact with Liquid
- ✓ No Moving Parts
- ✓ Simple to Install-No Cutting of Pipe
- ✓ Works on Carbon Steel | Stainless Steel | PVC | Copper | PVDF | PFA | PTFE | PU | Aluminium
- ✓ Pulse | 4–20mA | RS485 Output
- ✓ Flow Rate + Totalizer | Resettable
- ✓ Simple Programming
- ✓ Large Blue OLED Low Light Display

Chemical Resistant, High Impact Polycarbonate Cover

M12 Quick Connection

Bright LCD Display

Flow Rate and Total

Teflon® Epoxy Coated Aluminum

Teflon® Epoxy Coated Aluminum

Magnetic Connection (for easier installation)

Convenience, Accuracy and Value in an Ultrasonic Flow Meter

The Truflo® UF500 series clamp-on ultrasonic flow meters are easy to install with exceptional long life performance and they require no alteration to current piping configurations.

The sensor sends over 50 pulses/sec in order to provide accurate measurement of liquid flow rates in full pipes and can be used in low pressure systems.

- ✓ Wide Dynamic Flow Range of 0.3 to 15 ft/s | 0.1 to 5 m/s
- ✓ High Accuracy | ± 2.0% of Full Scale
- ✓ Pipe Sizes ½ – 6"
- ✓ Lightweight
- ✓ Excellent External Corrosion Resistance
- ✓ Data Logging (day, month, year)
- ✓ Suitable for RO/DI Systems

Flow Rate/Net Totalizer
SQ99   12:30:18
14.8 GPM
Net   9003 GAL

Run Time/Daily Totalizer /Month Totalizer/Year Totalizer
Runtime   216h
Day   20887 GAL
Mth.   646992 GAL
Year   7488505 GAL

Flow Rate/S.ToT Totalizer
SQ99   12:30:18
14.8 GPM
S.ToT   6311.1 GAL

See page 3 for a detailed display description

Flow Rate/Velocity /Net Totalizer
SQ99   12:30:18
Vel   3.8 f/s
Flow   895.2 GPM
Net   203119 gal

Velocity/Net Totalizer
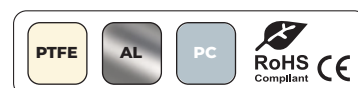20-03-23   12:30
27.7 f/s
Net   6311.1 gal

PTFE   AL   PC   RoHS Compliant   CE

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Instrumentation Equipment

General

Operating Range	0.3 – 15 ft/s	0.1 – 5 m/s
Pipe Size Range	½ – 6"	DN15 – DN100
Temperature Range	32 – 122°F	0 – 50°C
Repeatability	±0.8% of max. range @ 25 °C (77 °F)	
Linearity	±2.0% of max. range @ 25 °C (77 °F)	
Output	Pulse | 4-20mA | RS485	

Materials

Sensor Body	Teflon® Epoxy Coated Aluminum

Electronics

Power Supply	24 VDC
Connection	M12

Display

LCD 128 * 64 Dot Matrix

Totalizer Units

6-Digit Accumulator

Standards and Approvals

CE | FCC
RoHS Compliant

Measuring Points
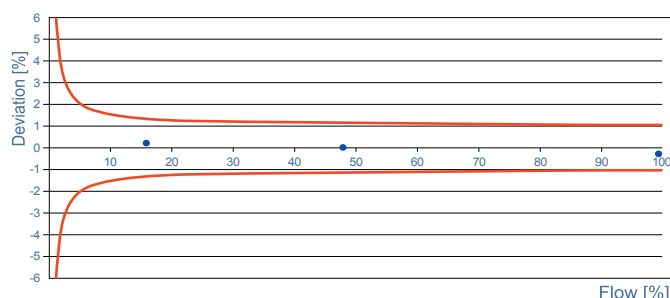
Other Considerations

Ensure Proper Installation

Proper installation plays a crucial role in ensuring the accuracy of an ultrasonic flow meter. Any errors or misalignments during installation can lead to inaccurate measurements. The UF-500 is designed with ease of installation in mind. Installation time is typically less than two minutes.

Installation Location

Selecting an appropriate location away from disturbances such as bends, valves, or pipe irregularities is essential as it can effect flow profile.

Flow Profile

The flow profile refers to the velocity distribution across the pipe's cross-section. If the flow profile is not uniform, the accuracy of the ultrasonic flow meter can be compromised. Factors such as bends, valves, or obstructions in the pipe can cause variations in the flow profile. The flow meter's accuracy can be improved by ensuring a smooth and fully developed flow profile.

Transducer Care

The transducers are the key components of an ultrasonic flow meter that emit and receive ultrasonic signals. The transducer surface should be free from air bubbles, dirt, or deposits which can interfere with the ultrasonic signal.

Signal Interference

External factors can introduce signal interference, affecting the flow meter's accuracy. Electrical equipment, nearby machinery, or electromagnetic fields can disrupt the ultrasonic signals. Shielding the flow meter from these interferences or relocating it to a less disruptive environment can help mitigate inaccuracies caused by signal interference.
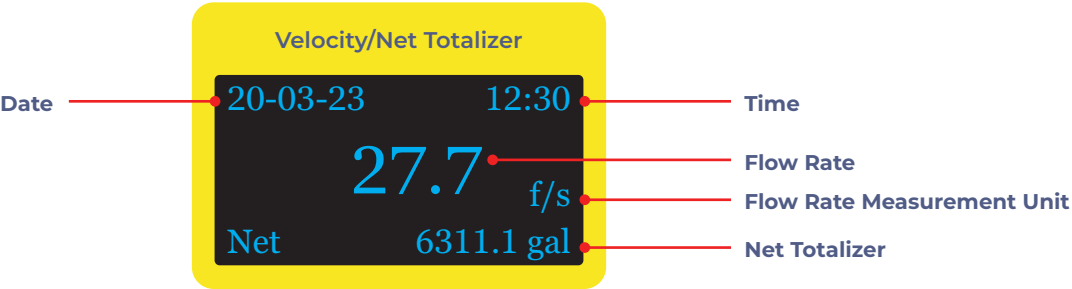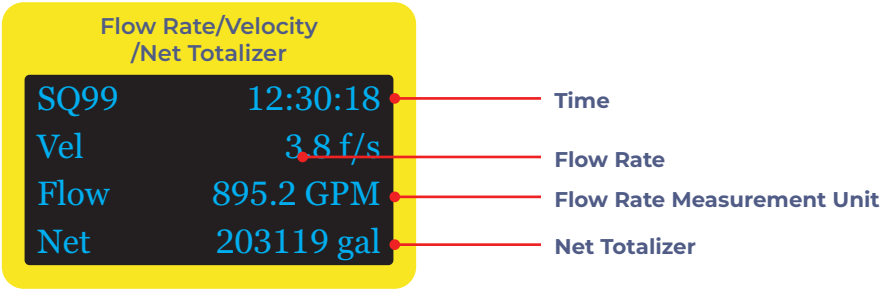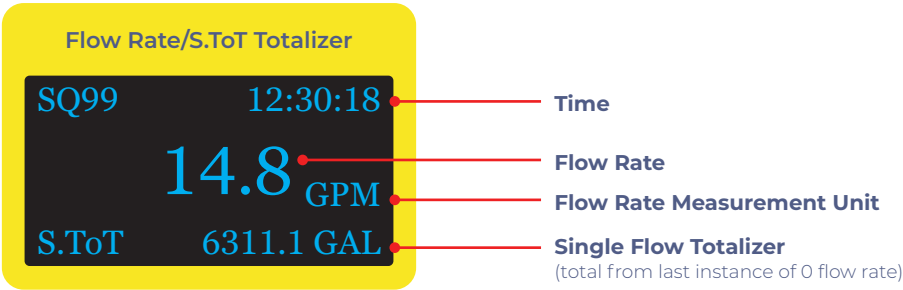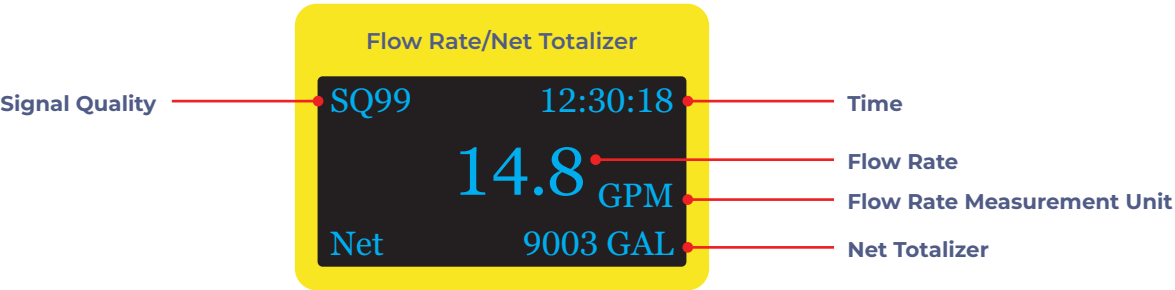
Pipe Conditions and Material

The condition and material of the pipe through which the liquid flows can impact the accuracy of the ultrasonic flow meter. Irregularities in the pipe, such as corrosion, scaling, or rough surfaces, can cause signal reflections or attenuations, leading to inaccuracies. It is important to regularly inspect the pipe and address any issues promptly to maintain accurate measurements.

ICON PROCESS CONTROLS™ Corrosion-Free Instrumentation Equipment

Display Layout

Flow Rate/Net Totalizer

Signal Quality — SQ99   12:30:18 — Time

14.8 — Flow Rate
GPM — Flow Rate Measurement Unit

Net   9003 GAL — Net Totalizer

Run Time/Daily Totalizer /Month Totalizer/Year Totalizer

Runtime   216h
Day   20887 GAL
Mth.   646992 GAL
Year   7488505 GAL

Flow Rate/S.ToT Totalizer

SQ99   12:30:18 — Time

14.8 — Flow Rate
GPM — Flow Rate Measurement Unit

S.ToT   6311.1 GAL — Single Flow Totalizer
(total from last instance of 0 flow rate)

Flow Rate/Velocity /Net Totalizer

SQ99   12:30:18 — Time
Vel   3.8 f/s — Flow Rate
Flow   895.2 GPM — Flow Rate Measurement Unit
Net   203119 gal — Net Totalizer

Velocity/Net Totalizer

Date — 20-03-23   12:30 — Time

27.7 — Flow Rate
f/s — Flow Rate Measurement Unit

Net   6311.1 gal — Net Totalizer

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Minimum Flow Range

|	ASME/ANSI	½"	¾"	1"	1 ¼"	1½"	2"	2½"	3"	4"
Pipe Size (mm)	OD min	16.5	23	28	35	45	58	72	80	108
	OD	20	25	32	40	50	63	75	90	110
	OD max	23	28	35	45	54	68	78	92	116
Flow Range (L/min)	0.03m/s	0.57L/min	0.88L/min	1.45L/min	2.26L/min	3.53L/min	5.61L/min	7.95L/min	11.45L/min	17.1L/min
	0.5m/s	9.4L/min	14.7L/min	24.1L/min	37.7L/min	58.9L/min	93.5L/min	132.5L/min	190.9L/min	285.1L/min
	1.5m/s	28.3L/min	44.2L/min	72.4L/min	113.1L/min	176.7L/min	280.5L/min	397L/min	572.6L/min	855.3L/min
	5m/s	94.2L/min	147.2L/min	241.2L/min	376.9L/min	588.9L/min	934.9L/min	1325.4L/min	1908.5L/min	2851L/min
Flow Range (Gal/min)	0.03m/s	0.13Gal/min	0.19Gal/min	0.32Gal/min	0.5Gal/min	0.78Gal/min	1.23Gal/min	1.75Gal/min	2.52Gal/min	3.76Gal/min
	0.5m/s	2.07Gal/min	3.23Gal/min	5.3Gal/min	8.29Gal/min	12.96Gal/min	20.57Gal/min	29.15Gal/min	41.99Gal/min	62.71Gal/min
	1.5m/s	6.23Gal/min	9.72Gal/min	15.93Gal/min	24.88Gal/min	38.87Gal/min	61.70Gal/min	87.33Gal/min	125.95Gal/min	188.14Gal/min
	5m/s	20.72Gal/min	32.38Gal/min	53.06Gal/min	82.91Gal/min	129.54Gal/min	205.65Gal/min	291.55Gal/min	419.81Gal/min	627.13Gal/min

Working Principle

- Lower Bracket
- M12 Quick Connection
- Upper Bracket
- Sensor Body
- FLOW
- Flow
- Flow
- Signal B
- Signal A

Application Example

UltraFlo Flow Meter

OBS Gauge

10D   5D

5D

VERTICAL

10D

To achieve highest accuracy, postiton sensor at least **10D pipe prior**, and **5D pipe after**

NC-25 Flow Sensor Flow/No Flow

NC-30 Sensor Liquid Level Sensing through Plastic Wall

Chemical Tank
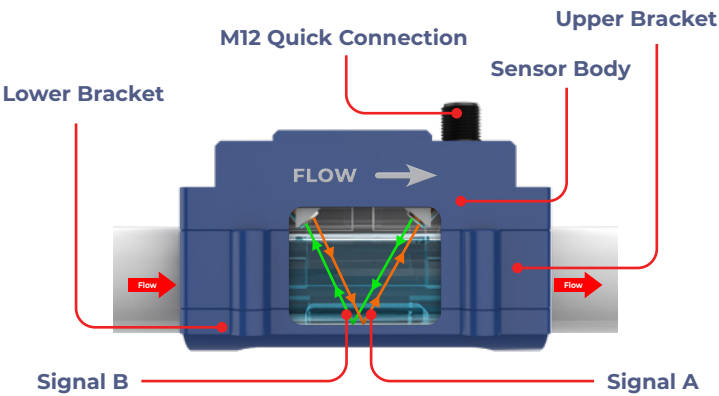
Model Selection

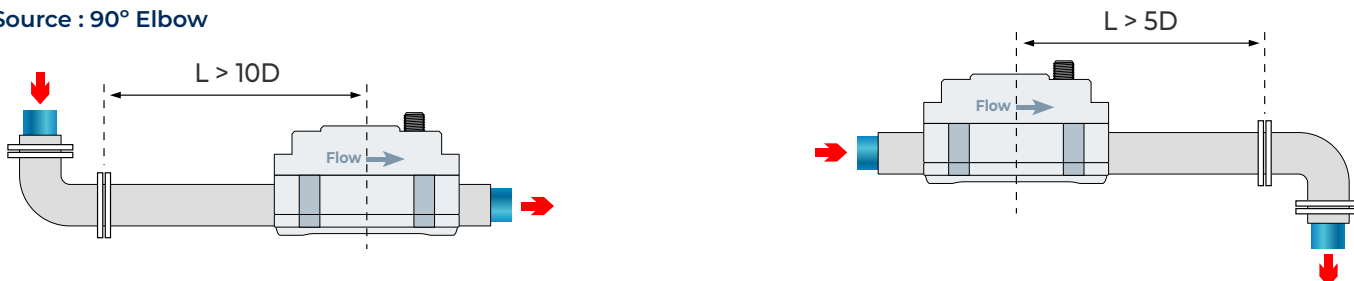| UltraFlo 500 — Clamp-On Ultrasonic Flow Meter		
Size	**Part Number**	**Material**
½"	UF500-A-15	Teflon® Epoxy Coated Aluminum
¾"	UF500-A-20	Teflon® Epoxy Coated Aluminum
1"	UF500-A-25	Teflon® Epoxy Coated Aluminum
1 ½"	UF500-A-40	Teflon® Epoxy Coated Aluminum
2"	UF500-A-50	Teflon® Epoxy Coated Aluminum
3"	UF500-A-80	Teflon® Epoxy Coated Aluminum
4"	UF500-A-100	Teflon® Epoxy Coated Aluminum
6"	UF500-A-150	Teflon® Epoxy Coated Aluminum

Add Suffix -
'P' - Pulse Output (add $349)
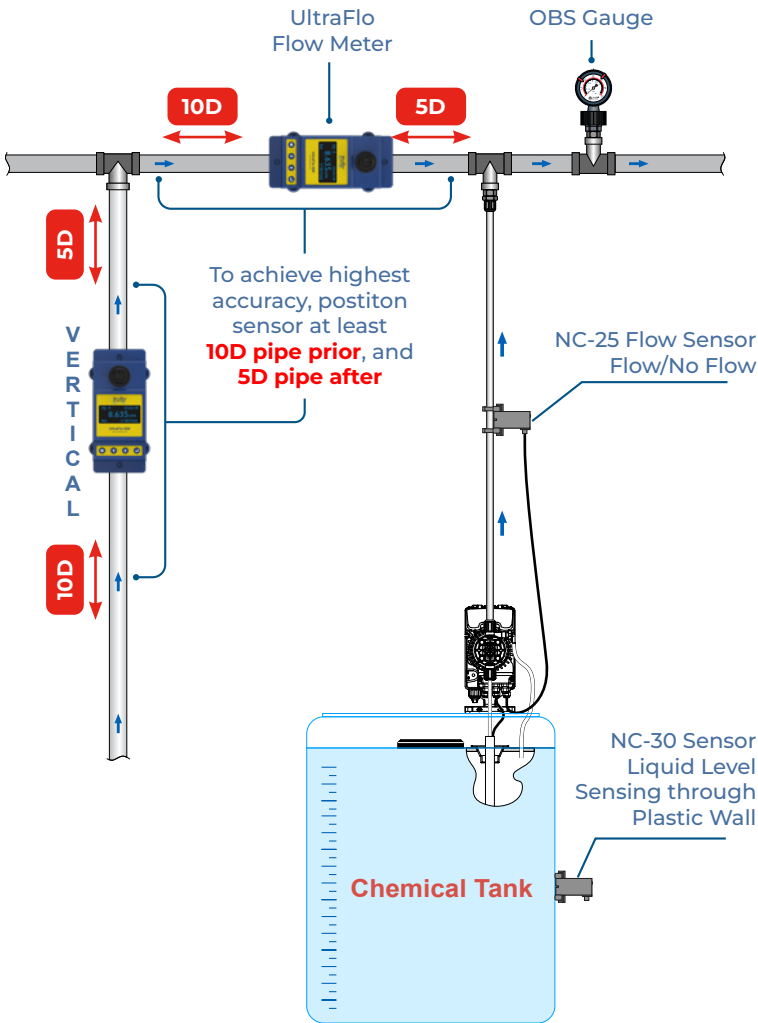
Truflo® — UltraFlo® UF-500
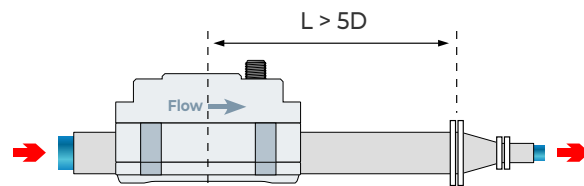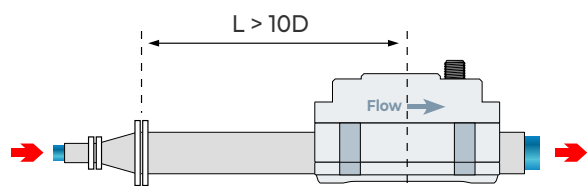## Clamp-On Ultrasonic Flow Meter Sensor

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Installation Positions

Source : 90° Elbow

L > 10D

Flow

L > 5D

Flow

Source : 2 x 90° Elbow in One Plane

L > 10D

Flow

Flow

L > 5D

Source : 2 x 90° Elbow in Different Plane
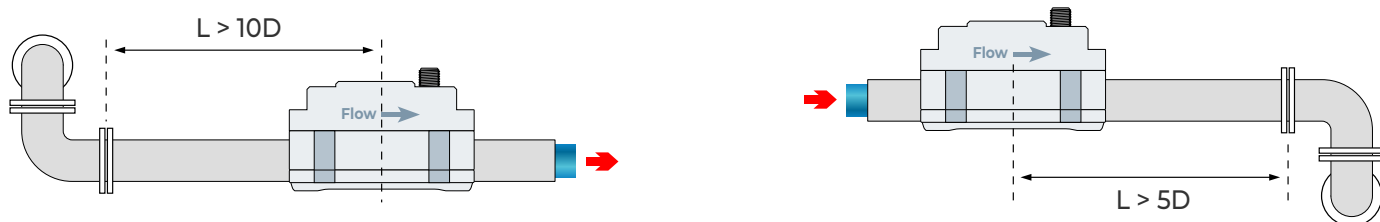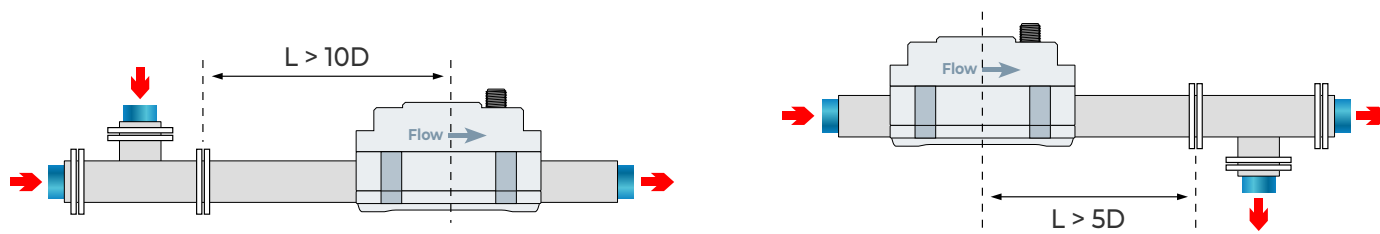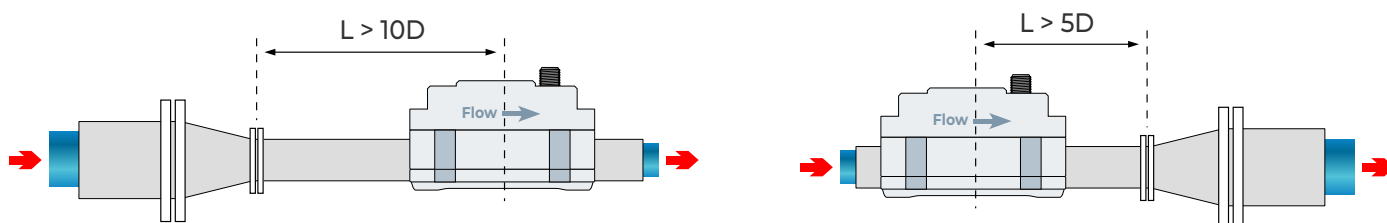
L > 10D

Flow

Flow

L > 5D

Source : T-Section

L > 10D

Flow

Flow

L > 5D

Source : Reducer

L > 10D

Flow

L > 5D

Flow

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Installation Positions

Source : Diffuser

L > 10D

Flow

L > 5D

Flow

Source : Valve

L > 10D

Flow

L > 5D

Flow