

Truflo® — UltraFlo® UF-500

Clamp-On Ultrasonic Flow Meter Sensor

ICON™ Corrosion-Free
PROCESS CONTROLS Instrumentation Equipment™

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

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

truflo®



Convenience, Accuracy and Value in an Ultrasonic Flow Meter

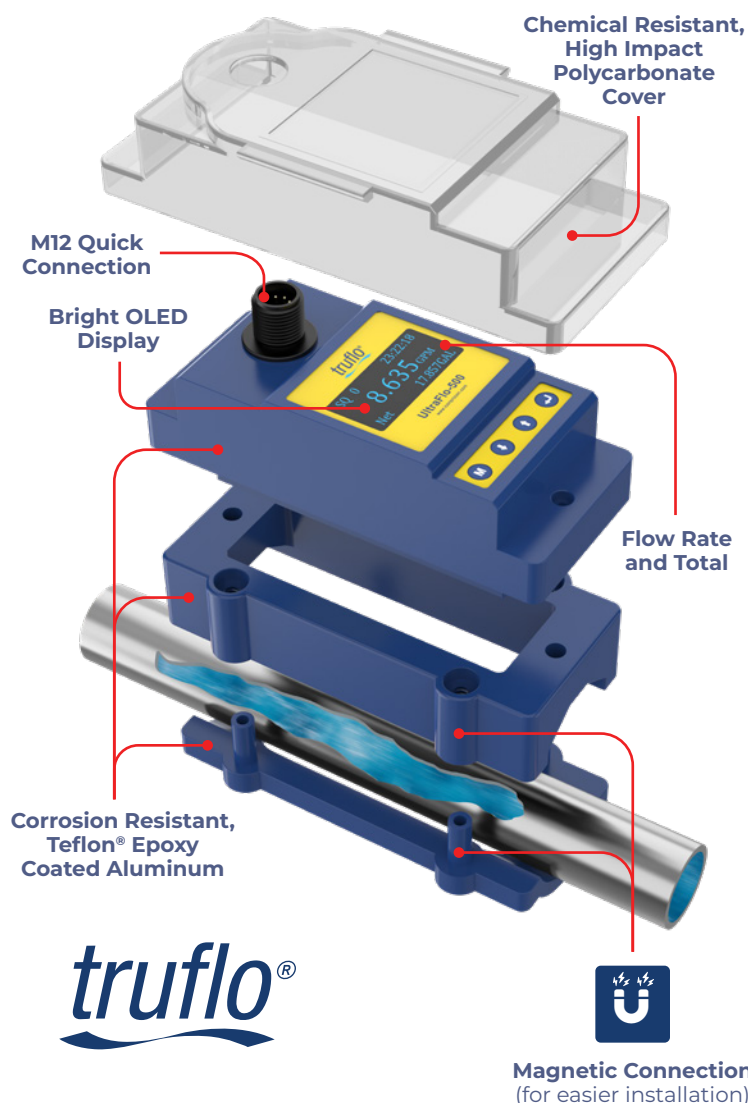
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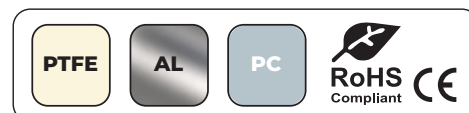
- ✓ Wide Dynamic Flow Range of 0.3 to 15 ft/s | 0.1 to 5 m/s
- ✓ High Accuracy | $\pm 2.0\%$ of Full Scale
- ✓ Pipe Sizes $\frac{1}{2}$ – 10"
- ✓ Under 2 Minute Installation Time
- ✓ No Contact with Liquid
- ✓ No Moving Parts
- ✓ Simple to Install — No Cutting of Pipe
- ✓ Output: 4-20mA | RS485 | Pulse (Optional)
- ✓ Flow Rate + Totalizer | Resettable
- ✓ Large Blue OLED Low Light Display
- ✓ Data Logging (Day | Month | Year)
- ✓ Suitable for RO | DI Systems



Convenience, Accuracy and Value in an Ultrasonic Flow Meter

The Truflo® UF-500 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.



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Technical Specifications

General		
Operating Range	0.3 – 15 ft/s	0.1 – 5 m/s
Pipe Size Range	½ – 10"	DN15 – DN250
Temperature Range	32 to 122°F	0 to 50°C
	32 to 302°F (HT model)	0 to 150°C (HT model)
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	
Viscosity Range	10 cPs Max.	

Materials	
Sensor Body	Teflon® Epoxy Coated Aluminum

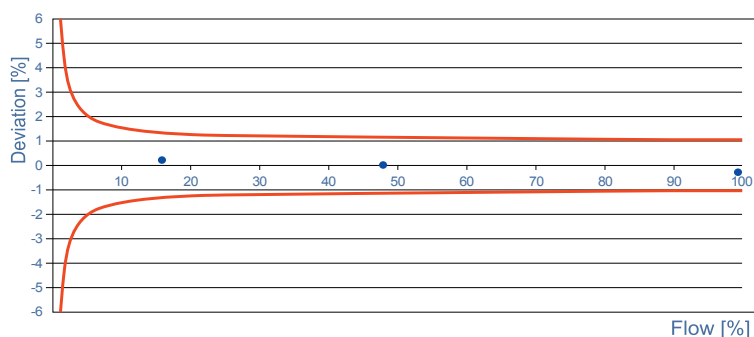
Electrical	
Power Supply	24 VDC
Connection	M12

Display	
OLED 128 * 64 Dot Matrix	

Totalizer Units	
6-Digit Accumulator	

Standards & Approvals	
CE FCC RoHS Compliant	

Measuring Points



Other Considerations

Ensure Proper Installation

Proper installation plays a crucial role in ensuring the accuracy of the UF-500 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 will effect the flow profile (see Page 6).

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 (see Page 6).

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. Ensure that the pipe surface is clean and smooth.

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.

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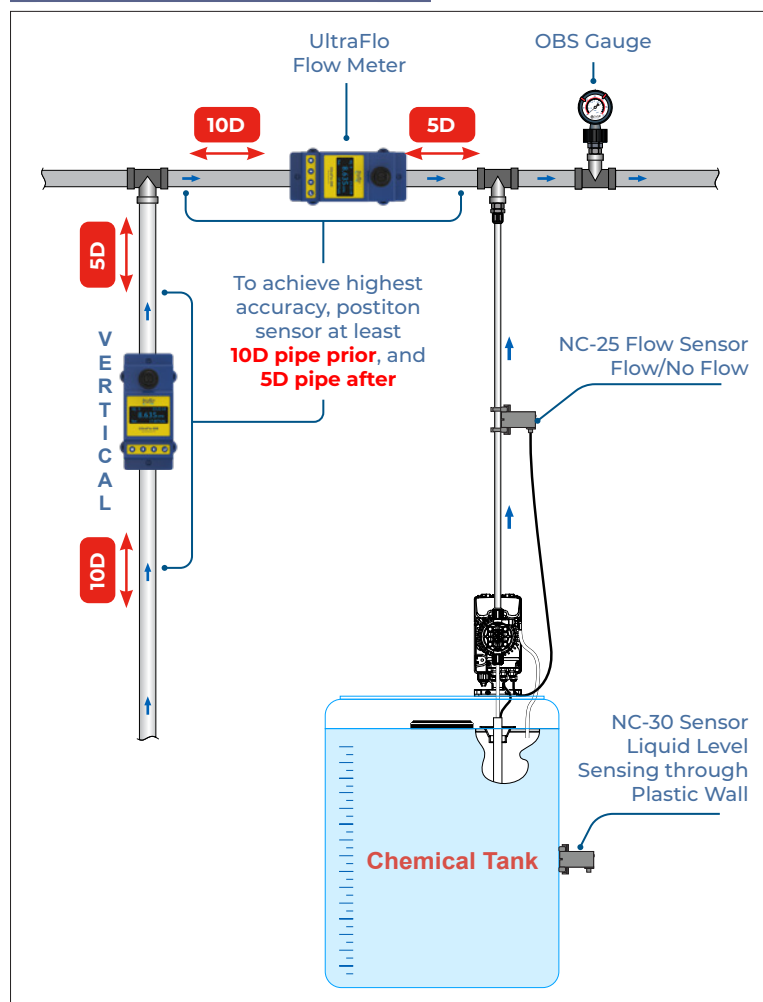
Outside Dimension

Pipe/ Tube Size (mm)	ASME/ANSI	½"	¾"	1"	1 ¼"	1½"	2"	2½"	3"	4"	6"	8"	10"
OD min.		16.5	22	32	38	48	58	72	86	108	142	196	250
OD		20	25	32	40	50	63	75	90	110	160	200	250
OD max.		23	28	35	45	54	64	78	92	116	169	223	277

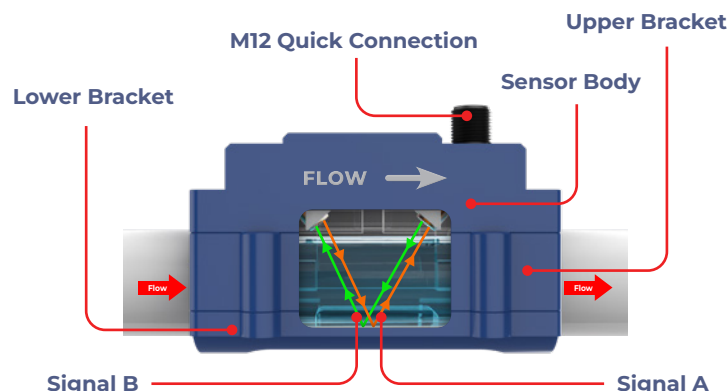
Minimum Flow Range

Size ASME/ANSI		½"	¾"	1"	1 ¼"	1½"	2"	2½"	3"	4"	6"	8"	10"
Flow Range (L/min)	0.03m/s	0.57	0.88	1.45	2.26	3.53	5.61	7.95	11.45	17.1	303	530	867
	0.5m/s	9.4	14.7	24.1	37.7	58.9	93.5	132.5	190.9	285.1	505	884	1445
	1.5m/s	28.3	44.2	72.4	113.1	176.7	280.5	397	572.6	855.3	1600	2651	4336
	5m/s	94.2	147.2	241.2	376.9	588.9	934.9	1325.4	1908.5	2851	5055	8838	14454
Flow Range (Gal/min)	0.03m/s	0.15	0.23	0.38	0.6	0.93	1.48	2.1	3.03	4.52	80.04	140.01	229.04
	0.5m/s	2.48	3.88	6.37	9.96	15.56	24.7	35	50.43	75.32	133.41	233.53	381.73
	1.5m/s	7.48	11.68	19.13	29.88	46.68	74.1	104.88	151.27	225.95	422.68	700.32	1145.45
	5m/s	24.89	38.89	63.72	99.57	155.57	246.97	350.13	504.17	753.15	1335.39	2334.75	3818.34

Application Example



Working Principle



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 ¼"	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
8"	UF500-A-200	Teflon® Epoxy Coated Aluminum
10"	UF500-A-250	Teflon® Epoxy Coated Aluminum

Add Suffix -
'P' - Pulse Output
'HT' - High Temperature

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Main Display Layout

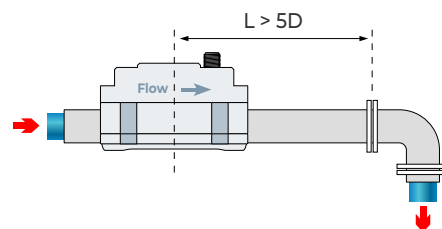
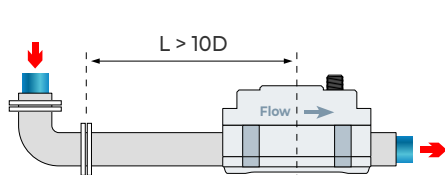


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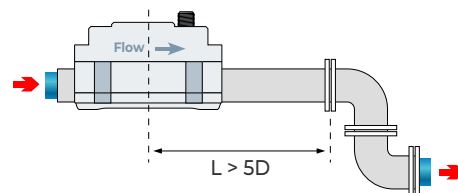
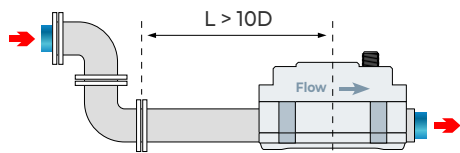
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Installation Positions

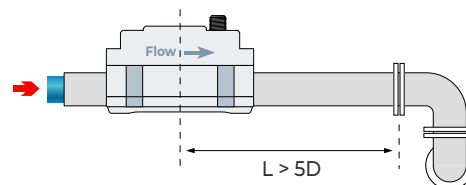
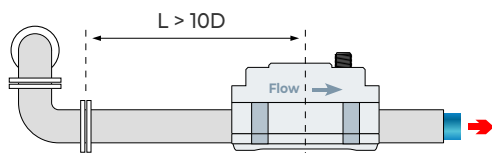
Source : 90° Elbow



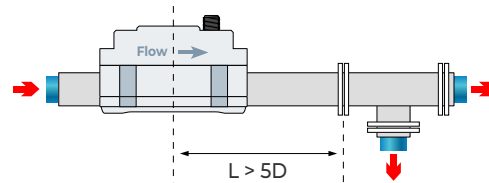
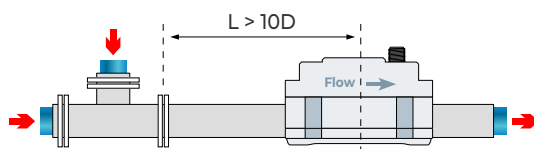
Source : 2 x 90° Elbow in One Plane



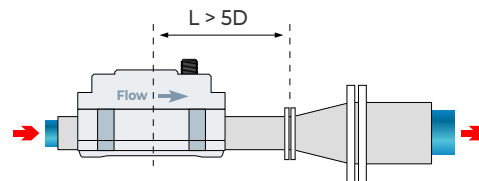
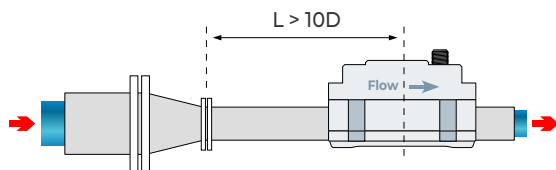
Source : 2 x 90° Elbow in Different Plane



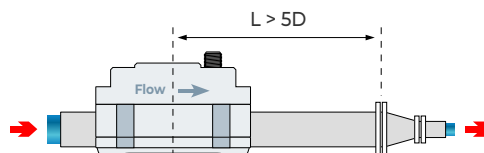
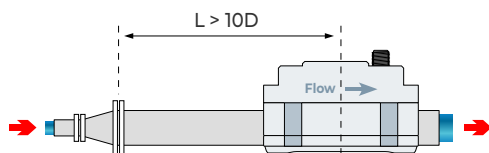
Source : T-Section



Source : Reducer



Source : Diffuser



Source : Valve

