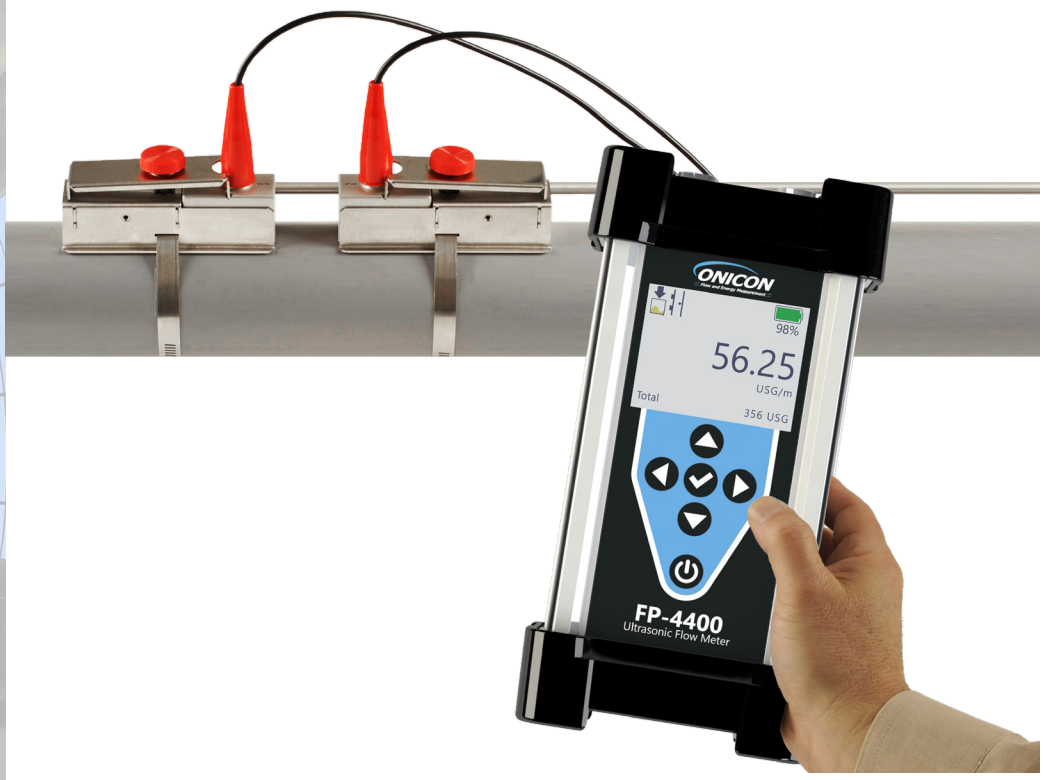




FP-4400

PORTABLE CLAMP-ON ULTRASONIC FLOW METER

ONICON's FP-4400 Portable Clamp-on Ultrasonic Flow Meter is the non-invasive approach to highly accurate hydronic flow measurement. The time-tested design incorporates matched transducers and easy to use mounting hardware making it ideal for installation in systems where shutdowns are impractical.



• Chilled Water • Hot Water • Domestic Water • Condenser Water •

We believe in our products, so should you.
1 YEAR NO FAULT WARRANTY
3 YEAR MANUFACTURER WARRANTY

Engineered • Wet Calibrated • Factory Configured

Measure with Confidence

No-Fault Warranty • On-Time Delivery • Customer Support



ONICON F-4000 Series Ultrasonic Flow Meters utilize the differential transit time method to measure the velocity of relatively clean liquids in full pipes. By measuring the difference between transit times of ultrasonic sound waves traveling between two transducers, the flow velocity and direction are accurately determined.

DESCRIPTION

ONICON's FP-4400 Portable Clamp-on Ultrasonic Flow Meter is the ideal tool for testing and validating flow. The battery operated portable meter utilizes clamp-on transducers to measure flow through the pipe wall. Three transducer sets are provided for optimal performance with pipes ranging from ½" to 48" in diameter, and it works with most commonly used pipe materials. Programming is easy with the on-screen menu system. Just enter the pipe diameter, wall thickness and pipe material.

The FP-4400 can be powered for up to 15 hours using the internal, rechargeable battery, or it can be operated continuously with the AC power adapter.

Monitoring flow over time is made easy with the built-in data logger. The logger can capture up to 12 million points with intervals ranging from 10 seconds to 1 hour apart. Download data to your PC via a USB flash drive.

APPLICATIONS

- Flow testing for closed loop HVAC chilled, hot and condenser water systems
- Temporary flow monitoring for domestic/municipal water
- Flow testing for process water & other clean liquids
- Baseline monitoring for project planning

FEATURES

Ideal for Monitoring & Testing
Clamp-on transducers allow for quick installation with no shutdown, no drilling and no pressure drop. Each meter is provided with a built-in data logger making it an ideal solution for monitoring flow over time.

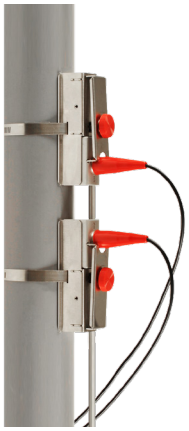
Works with Common Pipe Materials
The FP-4400 is designed to work with many different pipe materials including carbon steel, stainless steel, copper, PVC, HDPE and fiberglass.

Operates Over a Very Wide Flow Range
The FP-4400 is capable of measuring flow over a 400:1 turndown from 0.1 ft/s to 40 ft/s in velocity. This makes the FP-4400 ideal for testing and monitoring many different flow applications, including leak testing.

Simple to Set Up and Use
The FP-4400 is easily configured through the handheld backlit display and 5-button keypad interface. Enter a few parameters and the FP-4400 will display the correct transducer separation distance.

CALIBRATION

All FP-4400 flow meters are wet-calibrated in a flow laboratory against standards that are directly traceable to National Institute of Standards and Technology (N.I.S.T.). A certificate of calibration accompanies every meter.



Typical Installation



Each FP-4400 is provided with transducers, cables and mounting clamps in a convenient watertight carrying case.

SPECIFICATIONS*

FP-4400 TRANSMITTER		
TRANSMITTER PERFORMANCE	ACCURACY	±1% of reading or ±0.015 ft/s (±0.0046 m/s), whichever is greater
	REPEATABILITY & LINEARITY	±0.25%
	FLOW VELOCITY RANGE	±0.1 to 40 ft/s (±0.03 to 12.2 m/s)
OPERATING CONDITIONS	AMBIENT OPERATING	-5°F to 140°F
INPUT POWER	External mains to USB-C charger with 120-240 VAC, 50-60 Hz, 0.6A input; and 5 VDC, 3A, 15W ouput	
ELECTRONICS ENCLOSURE	IP67 when transducer cables connected. IP65 when transducers cables not connected. Aluminum enclosure with silicone protective end covers.	
	DISPLAY	Color TFT LCD display, IPS type, 2.8" screen size, 320 x 240 resolution, 500 NITS brightness, super wide view
PROGRAMMING	Menu driven via five (5) programming keys	
APPROVALS	CE	2014/30/EU EMC Directive
FP-4400 TRANSDUCERS		
PERFORMANCE	SENSING METHOD	Ultrasonic differential transit time velocity measurement via non-wetted transducers
OPERATING CONDITIONS	FLUID PROPERTIES	Clean liquids in full (pressurized) pipes
	FLUID VELOCITY RANGE	±0.1 to 40 ft/s (±0.03 to 12.2 m/s) typical
	FLUID TEMPERATURE RANGE	-40°F to 300°F
	PIPE MATERIALS	Suitable for use in a wide range of metallic and non-metallic piping systems
	PIPE SIZE RANGE	½" through 48", based on transducer series selected.
TRANSDUCER DESIGN - 10 SERIES	OPERATING FREQUENCY	2.56 MHz
	PIPE SIZE RANGE	½" through 1½"
	TRANSDUCER HOUSING	CF8M 316 Stainless Steel
	CABLE CONNECTIONS	• Triax cable with BNC style connectors and sealing jacket • Triax cable with NEMA 6 (IP67) direct connection for wet locations
	MOUNTING KIT	304 Stainless Steel mounting brackets with conduit connection, 200 Series Stainless Steel pipe clamps, and alignment and spacer tool
TRANSDUCER DESIGN - 20 SERIES	OPERATING FREQUENCY	1.28 MHz
	PIPE SIZE RANGE	2" through 8"
	TRANSDUCER HOUSING	CF8M 316 Stainless Steel
	CABLE CONNECTIONS	Triax cable with BNC style connectors and sealing jacket
	MOUNTING KIT	304 Stainless Steel mounting brackets with conduit connection, 200 Series Stainless Steel pipe clamps, and alignment and spacer tool

* SPECIFICATIONS subject to change without notice.

SPECIFICATIONS CONTINUED*

FP-4400 TRANSDUCERS (CONTINUED)		
TRANSDUCER DESIGN - 30 SERIES	OPERATING FREQUENCY	640 kHz
	PIPE SIZE RANGE	10" through 48"
	TRANSDUCER HOUSING	CF8M 316 Stainless Steel
	CABLE CONNECTIONS	Triax cable with BNC style connectors and ½" MNPT conduit connection and NEMA 4 (IP66) threaded strain relief.
	MOUNTING KIT	304 Stainless Steel mounting brackets with conduit connection, 200 Series Stainless Steel pipe clamps, and alignment and spacer tool

FLOW RANGES

The FP-4400 has an operating range of 0.1 ft/s - 40 ft/s. The table below shows the corresponding volumetric ranges (GPM) by nominal pipe size.

OPERATING RANGE	
PIPE SIZE (inches)	**FLOW RATE (GPM) (0.1 ft/sec - 40 ft/sec)**
½	0.06 - 24
¾	0.2 - 55
1	0.3 - 98
1¼	0.4 - 153
1½	0.6 - 220
2	1.0 - 390
2½	1.5 - 610
3	2.3 - 881
4	4.0 - 1,500
5	6.2 - 2,400
6	9.0 - 3,500
8	16 - 6,200
10	25 - 9,700

OPERATING RANGE	
PIPE SIZE (inches)	**FLOW RATE (GPM) (0.1 ft/sec - 40 ft/sec)**
12	35 - 14,100
14	43 - 19,100
16	57 - 25,000
18	73 - 31,700
20	91 - 39,100
24	132 - 56,400
26	166 - 66,100
30	221 - 88,100
34	283 - 113,200
36	318 - 126,900
42	432 - 172,700
48	564 - 225,600

* SPECIFICATIONS subject to change without notice.

METER ORDERING INFORMATION

Meter Model Number Coding = FP-4400-AB

AB = Sensor Type
40 = 10 Series, 20 Series, 30 Series transducers included