

• **F-4400 SERIES** •
**PORTABLE CLAMP-ON ULTRASONIC
FLOW METER**



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 travelling between two transducers, the flow velocity and direction are accurately determined.

DESCRIPTION

ONICON's F-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. It is designed for use with pipes ranging from ½" through 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 F-4400 can be powered for up to 18 hours using the internal, rechargeable NiMH 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 300,000 points with intervals ranging from 10 seconds to 5 minutes apart. Download data to your PC via USB. A 4-20 mA output is also available when operating from the AC power adapter.

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 F-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 F-4400 is capable of measuring flow over a 400:1 turndown from less than 0.1 ft/sec to 39 ft/sec in velocity. This makes the F-4400 ideal for testing and monitoring many different flow applications, including leak testing.

Simple to Set Up and Use - The F-4400 is easily configured through the handheld backlit display and 5-button keypad interface. Just enter the pipe material and OD, wall thickness and fluid type. The F-4400 will display the correct transducer separation distance.



Typical Installation



Each meter is provided with transducers, cables and mounting clamps and a watertight carrying case.

GENERAL SPECIFICATIONS

ACCURACY

±1% of reading or ±0.1 ft/sec (0.03 m/sec),
whichever is greater

Repeatability & Linearity: ±0.25%

OVERALL FLOW RANGE

0.07 to 39 ft/sec

SENSING METHOD

Clamp-on ultrasonic, differential transit time
method in direct or reflect mode. For clean
liquids in full pipes with less than 2% solids or
gas bubbles

PIPE SIZE RANGE

½" through 48" nominal diameter

POWER SUPPLY OPTIONS

Built-in NiMH battery for up to 18 hours continuous
operation

External charger with 100-240VAC 50/60Hz input

FLUID TEMPERATURE RANGE

Standard: -40° F to 300° F

AMBIENT TEMPERATURE RANGE

-5° F to 140° F

OUTPUT SIGNALS PROVIDED

4-20mA (500 ohm) when powered by AC adapter

USB for data log transfer by direct PC connection

ELECTRONICS ENCLOSURE

Handheld, ABS plastic, NEMA X

DISPLAY

White, backlit matrix - displays a 5-digit flow rate
with floating decimal point, a 14-digit totalizer, a
calibration menu and a daily flow report



OPERATING RANGE

Pipe Size (Inches)	Flow Rate (GPM) (0.07 ft/sec - 39 ft/sec)
-----------------------	--

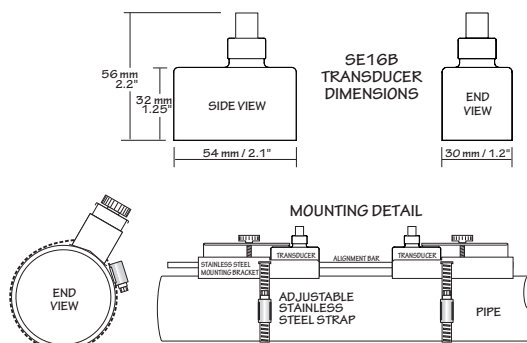
½	0.06 - 35
¾	0.12 - 66
1	0.21 - 117
1½	0.42 - 234
2	0.70 - 390
2½	1.1 - 585
3	1.6 - 897
4	2.8 - 1,560
5	4.3 - 2,417
6	6.3 - 3,509
8	11 - 6,238
10	18 - 9,748
12	25 - 13,647
14	30 - 16,766
16	40 - 22,224
18	51 - 28,463
20	64 - 35,481
24	92 - 51,467
30	147 - 81,879
36	213 - 118,530
40	264 - 147,382
42	292 - 162,588
48	383 - 213,275

NOTE: Specifications are subject to change without notice.

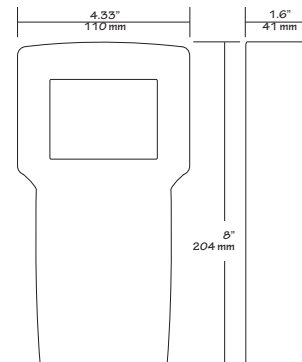
STANDARD FEATURES INCLUDE:

- One pair SE16B clamp-on, ultrasonic transducers for 1/2" to 48" (12mm to 1200 mm) pipes
- Transducer cables - 12 ft (3.5m) coaxial with BNC connectors
- Flow rate range - ± 0.07 to 39 ft/sec (± 0.02 to 12 m/sec)
- Installation - stainless steel transducer brackets, mounting clamps, alignment bar and silicone coupling compound kit
- Enclosure - portable ABS with rugged IP67 carry case
- Display - white, backlit matrix LCD
- Totalizer - 14 digit
- Calibration - built-in 5-key programmer
- Damping - keypad adjustable
- Power input - built-in NiMH battery for up to 18 hours operation - external charger with 100 - 240 VAC power input
- Outputs - 4-20 mA (500 ohm), USB
- Data logger - fully programmable 300,000 point capacity
- ONICON Logger PC software for Windows™
- One set cables - 4-20 mA and USB
- One Installation and Operation Manual

DIMENSIONS



SE16B TRANSDUCERS



ENCLOSURE