

# Model $\mu$ LF-100

## Ultrasonic Micro Liquid Flow Meter

### Description

The Model  $\mu$ LF-100 Model Ultrasonic Flow Meter is an accurate, reliable and cost-effective ultrasonic instrument capable of measuring very low flow rates through small diameter PFA tube. Typical applications are D.I. water and chemical solutions in the semiconductor market. A molded sensor assembly is available in two different sizes for installation in 6mm and 3mm O.D. PFA tubing.

The  $\mu$ LF-100 was designed with the latest solid state technology providing the major economic benefit of many years of uninterrupted service. Employing digital signal processing (DSP) techniques, the Model  $\mu$ LF-100 Ultrasonic Liquid Flow Meter provides outstanding accuracy and repeatability.

Installation and setup of the Model  $\mu$ LF-100 is fast and easy. Integral to the display unit, the set-up software leads the installer through a series of questions related to pipe material and size, display configuration and desired outputs. This makes the initial installation a straightforward process. The sensors are provided in a robust, molded mounting fixture designed for the specific line size for optimum performance. The meter was designed with no moving parts, thus reducing its cost of ownership and eliminating common maintenance requirements.

### Features

- No moving parts
- Low cost of ownership
- Increased energy savings
- Zero maintenance requirements
- No need for meter recalibration
- Wide rangeability with a single unit
- Fast response time
- Ultra low flow rates
- 6mm O.D. x 4mm I.D. and 3mm O.D. x 2mm I.D. line sizes
- PFA line material



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### Specifications

#### Display/Converter

#### Measurement Method

Time difference calculation method of ultrasonic wave propagation

#### Accuracy

$\pm 2\%$  RD (operating range 1.6 to 33 ft./sec.)

#### Repeatability

$\pm 0.2\%$

#### Applicable Liquids

D.I.W. and chemical solutions

#### Applicable Pipes

6mm O.D. x 4mm I.D. and  
3mm O.D. x 2mm I.D.

#### Flow Rate

-6 sensor: 277 – 5560 ml/min.  
-3 sensor: 94 – 1881 ml/min.

#### Analog Output Range

Setting within 0–33 ft./sec.

#### Enclosure

Panel Mount IP50

#### Material

Glass fiber resin (Noril)

#### Installation

#### Temperature Range

50° to 122° F (10° to 50° C)

#### Power Supply

12–30 VDC

#### Power Consumption

3.6 watts or less

#### Installation

Panel mount

#### Analog Output

Output Information

Instantaneous forward flow

Output Signal

4–20 mA

Load Resistance

450 ohm or less



## Specifications (cont'd)

### Contact Output

Output Information	Selectable from accumulated pulse of forward flow and upper/lower limit flow rate
Output Signal	Open collector no voltage
Rating	30 VDC @ 0.25 A
Scaled Units	Selectable from: 1ml, 10ml, 0.1L, 1L, 0.001G, 0.01G, 0.1G and 1G
Low Cut Off	0 to 10% in 1% steps
<b>Weight</b>	Approximately 1 lb.

### Display

LCD Display	16 characters x 2 lines
Information	Rate and Total
Available Units	LPH, LPM, ml/min., m/s, cm/s, GPH, GPM, FPM and FPS

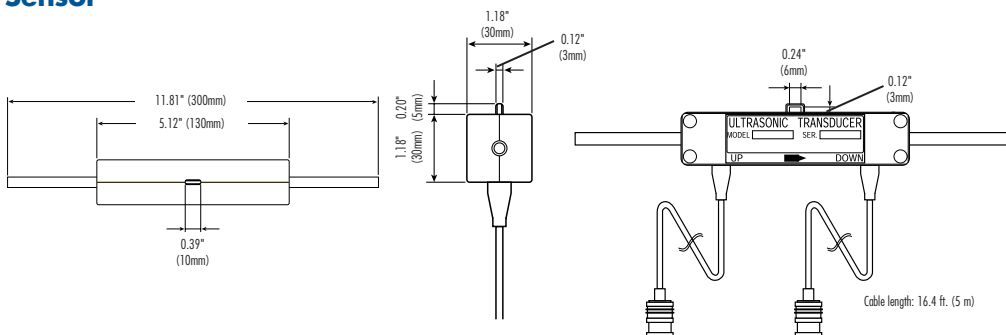
### Sensor

<b>Model</b>	$\mu$ LT-6 and $\mu$ LT-3
<b>Material</b>	PFA tube
<b>Installation</b>	In-line wetted sensors
<b>Operating Temperature</b>	50° to 158° F (10° to 70° C)
<b>Cable Length</b>	16.4 ft. (5 m)
<b>Weight</b>	Approximately 0.5 lbs.
<b>Straight Run</b>	10D upstream and 5D downstream minimum

### Model Number

<b><math>\mu</math>LF-100-6</b>	Line size: 6mm O.D. x 4mm I.D.
<b><math>\mu</math>LF-100-3</b>	Line size: 3mm O.D. x 2mm I.D.
Includes	Display/converter, sensors and cabling

### Sensor



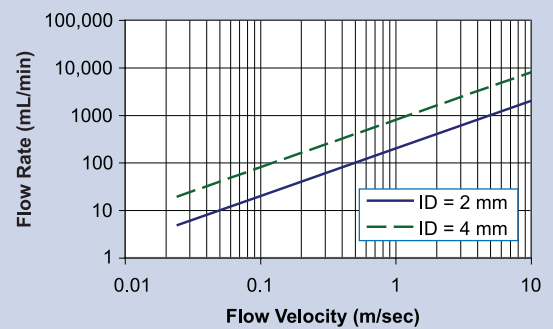
Specifications are for reference only and are subject to change without notice.

### Local Representative:



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$\mu$ LF-100 Diagram of Rate-Flow Velocity



## Dimensions

### Converter

