

MycroSENSOR 141 Fluidic Flowmeter

FEATURES & BENEFITS

- ▶ The ability to calculate volumetric flowrate that is unaffected by fluid density ensures accurate measurement
- ▶ Rugged construction, which includes no moving parts, allows for installation in various high industrial stress environments
- ▶ Rugged meter body with self-contained deflection sensor allows direct, in-line installation into piping
- ▶ Output selection (analog, scaled pulse, transistor switch) provides application versatility
- ▶ The ability to use the Deflection Sensor Signal Converter or Two-Wire Transmitter provides versatile output selection

DESCRIPTION

The MycroSENSOR 141 Fluidic Flowmeter is a rugged, reliable instrument available for a wide variety of fluid measurement applications. Its meter bodies can be selected for a broad range of flow rates, pipe sizes, and pressure ratings. The integral, one-piece design eliminates moving parts, making it ideal for installations subject to vibration. The ability to separately select either a two-wire transmitter or signal converter designed specifically for the MycroSENSOR 141 allows the widest flexibility in choosing outputs. Flow measurement applications to be implemented at a minimum of cost, time, and equipment.

The MycroSENSOR 141 includes a single-piece, cast meter body with a self-contained sensor available for mounting directly in-line with new or existing process piping. The MycroSENSOR 141 operates with the Fluidic Flowmeter Deflection Sensor Signal Converter or the Fluidic Flowmeter Two-Wire Transmitter to provide a signal for recording, indicating, or controlling flow.

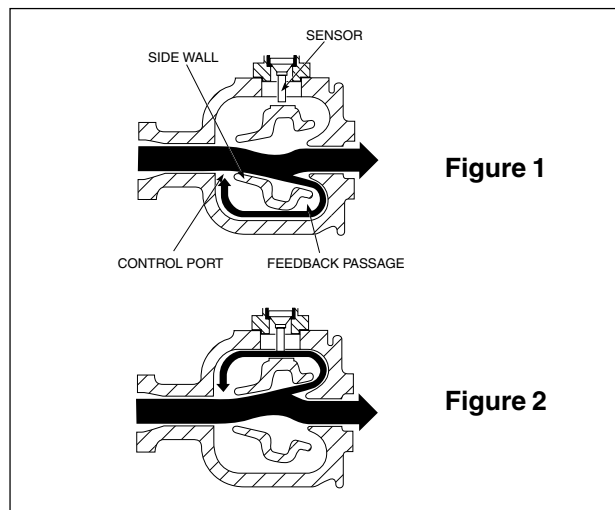
The geometric design of the meter body produces a continuous, self-induced oscillation at a frequency corresponding to the velocity of fluid passing through the meter. Oscillations are detected by an enclosed deflection sensor that produces a pulse upon each oscillation. Signals from the sensor are then converted into a scaled pulse and 4-20 mA analog signal (converter) or a single 4-20 mA analog signal (transmitter).

Fluid attaches to one of the side walls within the meter body. A small portion of flow is diverted through a feedback passage to the control port (shown to the right). This feedback flow bends the main flow to the opposite side wall - repeating feedback action and producing oscillation within the meter body. Flow in feedback passage cycles



between zero and maximum. Enclosed deflection sensor varies electrical resistance in response to condition. Resulting signal from the sensor detects frequency of oscillation that is linear to velocity. As such, it detects volumetric flow of fluid through meter.

The Fluidic Flowmeter Deflection Sensor Signal Converter provides both a scaled pulse for flow totalizing and a 4-20 mA signal linearly proportional to the flow rate. Housed in a NEMA 4 enclosure, it can be located up to 1000 ft. away from the meter installation. The Fluidic Flowmeter Two-Wire Transmitter provides a 4-20 mA analog signal proportional to the flow rate. Also housed in a NEMA 4 enclosure, it can be mounted directly on the meter body or connected via cable up to 50 ft. away.



SPECIFICATIONS

Flow Rates

Meter Size	Minimum Flow Rate (GPM)
1"	3.25
1-1/2"	7.6
2"	10.5
3"	23.0
4"	40.0

Listed flow ratings are for water at 60°F, 1 centistoke. To determine flow rates of other fluids, divide the value listed above by the square root of the fluid's specific gravity.

Capacity

Meter Size	Full Scale Calibration Range ¹	
	Minimum GPM	Maximum GPM
1"	0-10	0-55
1-1/2"	0-22	0-130
2"	0-40	0-210
3"	0-125	0-460

Pressure Rating

Maximum working pressure equals connecting flange rating per ANSI B16.5

Meter Size	Connecting Range
1"	150, 300, 600 lb.
1-1/2"	150, 300, 600 lb.
2"	150, 300 ² , 600 lb. ²
3"	150, 300 lb. ²

Temperature

Meter Body: -40 to +350°F (-40 to +177°C)
 Signal Converter: -22 to +122°F (-30 to +50°C)
 Two-Wire Transmitter: -40 to +185°F (-40 to +85°C)

Materials

Meter Body: Cast Stainless steel
 1" size, type 316 SS (ASTM A296 grade CF8M); 1-1/2", 2" & 3" sizes, type 316L SS (ASTM A296 grade CF3M)
 Sensor: Stainless steel, type 316L SS, and Hastelloy C-276
 Gasket: Teflon, O-Ring: Viton

NOTES:

- Ranges correspond to 4-20 mA output.
- Requires optional welded-on flanges.
- FM approved for intrinsically Safe for Class I/II/III, Div.1, Groups A, B, C, D, E, F, G when used with approved barriers and converters listed on MycroSENSOR Dwg. #15032-1419 and -1420 and when installed per MycroSENSOR's instructions.
- Dimensions in inches.

Specifications subject to change without notice.

MODEL SELECTION

141 Fluidic Flowmeter with Deflection Sensor

Meter Body Materials

S Stainless Steel

Meter Size

10 1"
 15 1-1/2"
 20 2"
 30 3"

End Connections

A Water (Flangeless), Standard
 B Welded-on Flanges, ANSI Class 150#
 C Welded-on Flanges, ANSI Class 300#
 D Welded-on Flanges, ANSI Class 600#

Deflection Sensor Style

A Standard Leads
 B Long Leads

Options

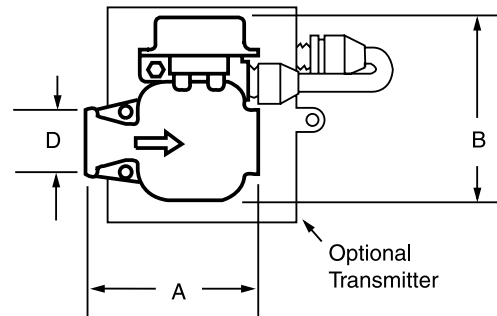
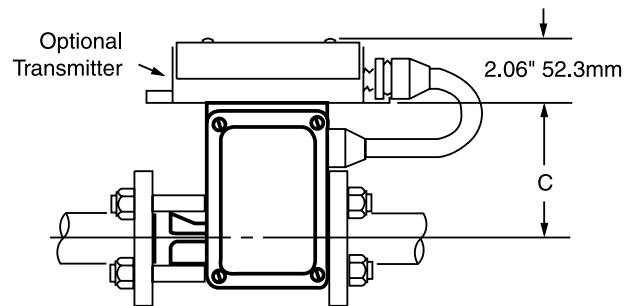
N None
 A With Mounted 2-Wire Transmitter

Electrical Approval

N Not Required
 F² FM Approved

141 S 10 A A N N Sample Model Number

DIMENSIONS



Meter Size ⁴	A	B	C	D
1"	5.50	5.88	4.12	2.00
1-1/2"	7.63	7.57	4.25	3.25
2"	8.06	8.04	4.25	4.00
3"	11.72	10.88	4.25	5.00