Flow Measurement Solutions

USM Ultrasonic Flow Meter with Digital and Analog Outputs

1/2", 3/4", 1", & 2" NPT

1" & 2" Tri-Clamp

Description

The ultrasonic flow meter of the USM series monitors liquid media such as water, high-purity water (DI or RO), water glycol solutions, or industrial oils. It detects the three process categories volumetric flow quantity, consumed quantity and medium temperature.

Peak consumption, present consumption or accumulated consumption can be accessed and adjusted via programmed switch and alarm level settings - all at the touch of a button.

The units feature two switching outputs which can be programmed as normally open or normally closed. For output of the measured value, one switching output can also be configured as a scalable analogue output. For consumed quantity monitoring, the other output transmits counting pulses to the controller.

In addition to volumetric flow monitoring the USM also monitors the temperature of the medium. It is displayed on the unit and provided for signal processing. The sensor is thus particularly suited for monitoring cooling circuits.

Specifications

Pressure Range:

NPT:	-14.5 to 1450 PSI
1"Tri-Clamp:	-14.5 to 362 PSI
2"Tri-Clamp:	-14.5 to 232 PSI

Temperature Range: -4°F to 212°F

Operating Voltage: 18 to 32 VDC

Flow Accuracy: ± (1 % MW + 0.5 % MEW)

Flow Repeatability: ± 0.2 % MEW

Temperature Accuracy: ± 2.5 (Q > 5 % MEW)

Ingression Protection: IP67

Outputs: 1 digital, 1 digital or analog

Inputs: Output 2 can be an external "Easy" reset

(see page 2 for output/input details)

USM Ultrasonic Flow Meter with Digital and Analog Outputs

Sizes & Flow Rates

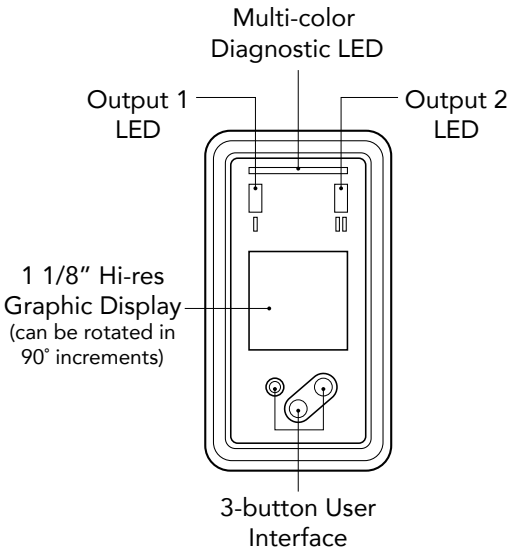
Size & Connection	Model Number	Liters	Gallons
1/2" NPT	USM-017.1-N-050-D	0.5 to 65 l/min	0.13 to 17.17 gpm
3/4" NPT	USM-019.8-N-075-D	0.5 to 75 l/min	0.13 to 19.81 gpm
1" NPT	USM-063.4-N-100-D	1 to 240 l/min	0.26 to 63.4 gpm
2" NPT	USM-264.1-N-200-D	5 to 1000 l/min	1.32 to 264.18 gpm
1" Tri-Clamp	USM-063.4-C-100-D	1 to 240 l/min	0.26 to 63.4 gpm
2" Tri-Clamp	USM-264.1-C-200-D	5 to 1000 l/min	1.32 to 264.18 gpm

Display

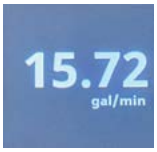
USM meters feature a high resolution 1 1/8" x 1 1/8" graphic display that can be rotated to any orientation in 90° increments.

Includes an easy to use 3-button menu navigation.

Additonally there are 2 indicator lights - one for each output. as well as a multi-color diagnostic LED bar.



Multiple display layouts to make the values that are most important to you more prominent. Can display Rate, Temperature, and Total on one screen.



Rate Only

Rate & Total

Rate & Temp.

Rate, Total & Temp.

Rate, Total, Temp, & Diagnostic

Output Signals

There are 2 outputs on the USM meters. One is digital only and the other can be either digital or analog or used as a digital input for an external FLOW TOTAL reset.

Output 1 Options:

Communication Protocol:
IO-Link

Switching:
flow rate or media temperature

Pulse Output:
for volumetric flow total; active voltage; pulse value and duration can be adjusted

Frequency Output:
for flow rate or temperature

Diagnostic Output:
flow direction

Output 2 Options:

Switching:
flow rate or media temperature

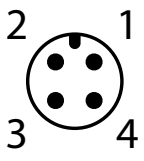
Pulse Output:
for volumetric flow total; active voltage; pulse value and duration can be adjusted

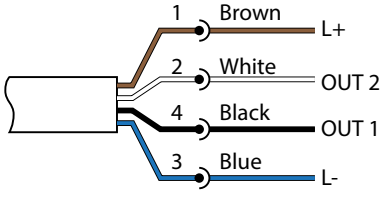
Analog Output:
for flow rate or temperature

Diagnostic Output:
flow direction

External Input:
totalizer reset

Wiring

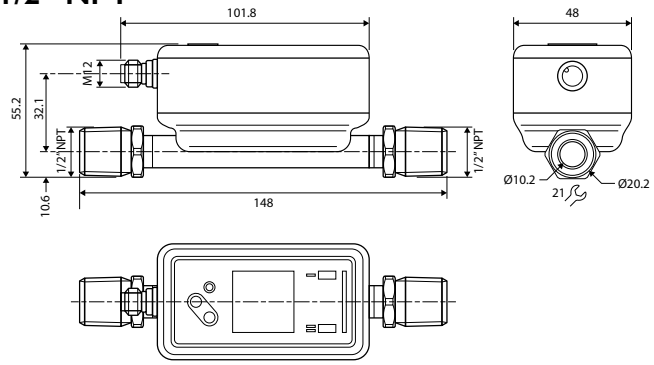




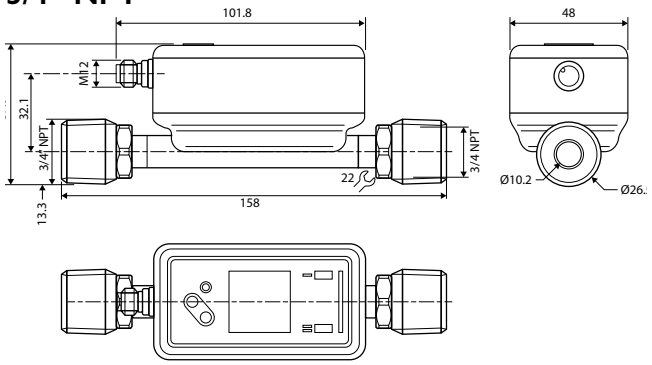
USM Ultrasonic Flow Meter with Digital and Analog Outputs

Dimensions

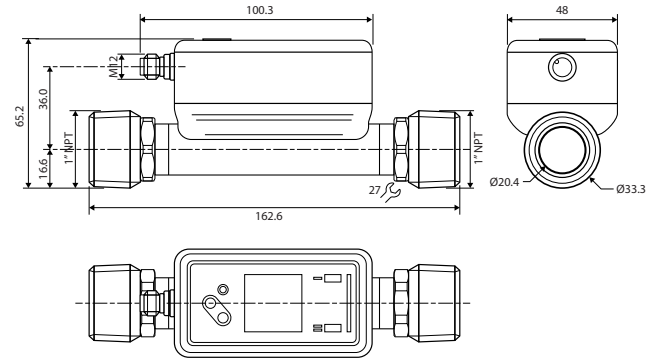
1/2" NPT



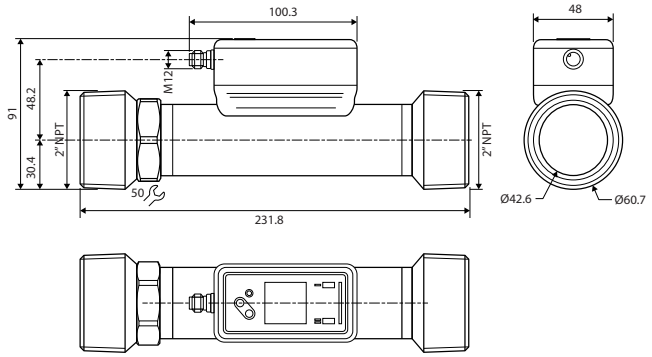
3/4" NPT



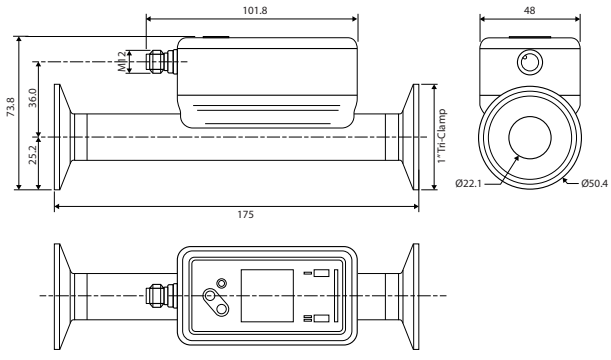
1" NPT



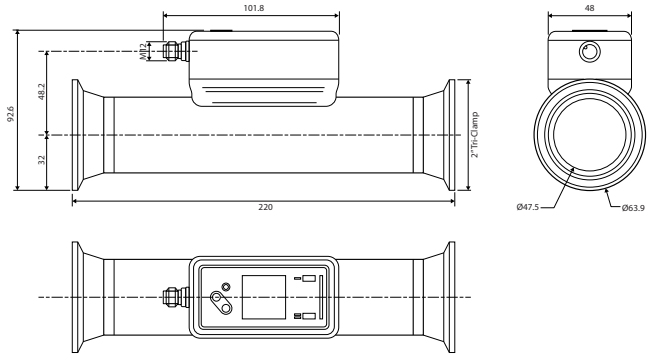
2" NPT



1" Tri-Clamp



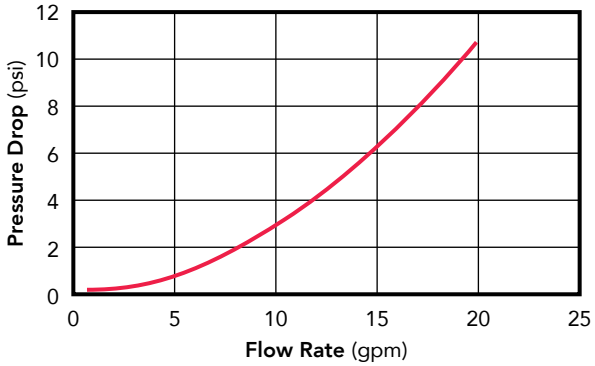
2" Tri-Clamp



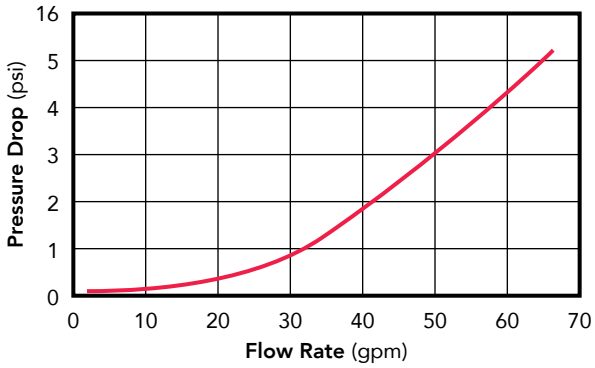
USM Flow Meter with Digital and Analog Outputs

Pressure Droop Curves

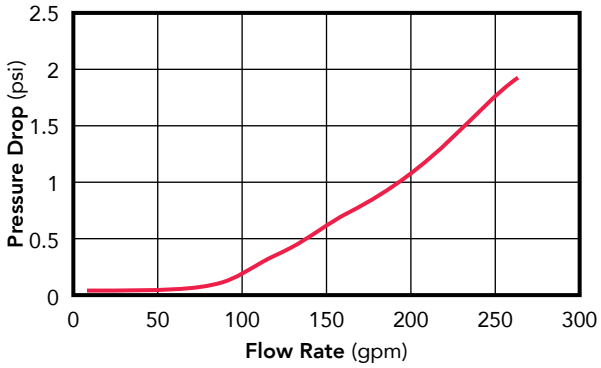
1/2" & 3/4"



1"



2"



Accessories

Power & Communication Cords

Power Cord Only - US wall Plug with Tansformer

PC-24VDC-M12

M12 Power and Communication

No plug or transformer included. Just a 4-wire cable with bare ends on one end and an M12 connector on the other.

EVC002 Straight Connector; 15 ft.

EVC003 Straight Connector; 30 ft.

EVC004 Right Angle Connector; 15 ft.

EVC005 Right Angle Connector; 30 ft.

Easy Reset Buttons

Provides for simple one-touch reset of TOTAL

ERB-8IN-M12

ERB-IFM-NEMA

button illuminates to confirm actuation.