OMP POSITIVE DISPLACEMENT FLOWMETERS

Flow
Pressure
Level
Temperature
measurement
monitoring
control

- **Flow Ranges from 0.53 to 26 GPH to 4 to 92 GPM**
- **Handles Viscosities to 1,000,000 cPs**
- **Pressure Ratings to 8,000 PSIG Available**
- **Low Head Loss Oval Gear Design**
- **Pulse Output, Mechanical Displays and LCD Displays Available**

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Model:
OMP

Features

- Flow Ranges From 0.53 to 26 GPH Through 4 to 132 GPH
- Handles Viscosities to 1,000,000 cPs
- Pressure Ratings to 8,000 PSIG Available
- Low Head Loss Oval Gear Design

The KOBOLD series OMP combines high accuracy, repeatability and low cost with a variety of material combinations allowing it to solve just about any flow metering problem. The OMP series positive displacement flowmeters use an oval gear design to accurately meter the flow of viscous liquids. The oval gear design provides highly precise measurements with a lower pressure drop relative to other types of gear type meters. The OMP low flow series are available with ryton bodies for lower pressure applications and stainless steel bodies for pressures up to 8000 PSIG. The standard gear design can measure fluids with viscosities up to 1000 centipoise with special gear designs available for high viscosities. A pulse output is provided for input to a variety of display, batch control or distributed control systems.

Specifications

Available Flow Ranges:
- **OMP-1:** 0.53 to 26 GPH
- **OMP-2:** 4 to 130 GPH

Maximum Pressure
- **Ryton Body:** 75 PSIG
- **SS Body:** 150 PSIG standard, 800 or 8000 PSIG optional

Max. Differential Pressure: 14.5 PSI

Wetted Components
- **Body:** Ryton or 316 stainless steel
- **Gears:**
  - **OMP-1:** 316 stainless steel and teflon
  - **OMP-2:** 316 stainless steel and carbon
  - **Optional:** Ryton gears with hastelloy C shafts (Ryton body only)

OMP-1 & OMP-2 Low Flow Series

Shafts
- **Standard:** 316 stainless steel
- **Optional:** Ryton gears with hastelloy C shafts (Ryton body only)

O-ring: Viton standard, EPDM or teflon optional

Maximum Operating Temp.
- **Ryton Body:** 175˚F
- **SS Body:** 250˚F

Minimum Viscosity: 5 centipoise (lower viscosities possible with reduced measuring range)

Maximum Viscosity
- **Standard:** 1000 centipoise
- **Optional (OMP-2 only):** to 1,000,000 centipoise with reduced measuring range

Accuracy: 1% of reading
Repeatability: 0.03% of reading
Normal K-Factor
- **OMP-1:** 3785 pulses/gallon
- **OMP-2:** 1514 pulses/gallon

Output Type: NPN Open Collector, 5-24 VDC Power
Optional Output: 4-20 mA transmitter

Elec. Protection: NEMA 3R/IP54
Filtration Requirements: 200 mesh

Maximum Flowrate Limit vs. Viscosity for Optional High Viscosity Gears, OMP-2 Series

Viscosity	Max. Flow	Viscosity	Max. Flow
<2,500 cPs	132 GPH	<25,000 cPs	52 GPH
<3,000 cPs	118 GPH	<40,000 cPs	39 GPH
<4,000 cPs	105 GPH	<95,000 cPs	13 GPH
<5,000 cPs	92 GPH	<450,000 cPs	6.6 GPH
<8,000 cPs	79 GPH	<1,000,000 cPs	6.6 GPH
<12,000 cPs	66 GPH		

OMP-1 and OMP-2 Ordering Information

OMP	= Positive Displacement Flowmeter	
	Flow Range	
1	= 0.53 to 26 GPH	
2	= 4 to 132 GPH	
	Body Material	
R	= Ryton Body	
L	= Stainless Steel Body 150 PSIG Max. Pressure	
I	= Stainless Steel Body 800 PSIG Max. Pressure	
H	= Stainless Steel Body, 8,000 PSIG Max. Pressure	
	Fitting	
N2	= 1/4" NPT	
	O-Ring Material	
V	= Viton (standard)	
J	= EPDM	
T	= Teflon	
	Options	
A5	= 2-wire 4-20 mA module in place of pulse output	
	{Note: Remote module for body material R, L & I integral module for body material H}	
C	= Ryton Gears with Hastelloy C Shafts (Ryton Body Only)	
P	= High Viscosity Gears for Viscosity > 1000 Centipoise (for OMP-2 only)	

OMP - 2 - I - N2 - V - P **Example**

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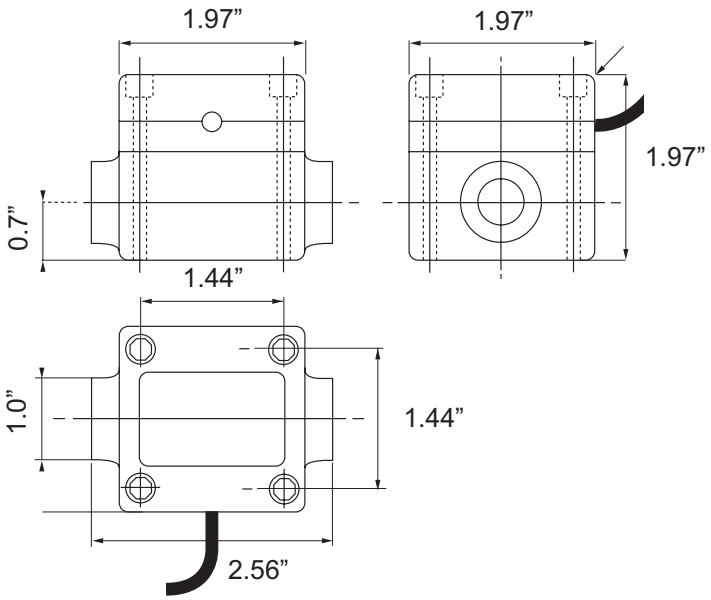
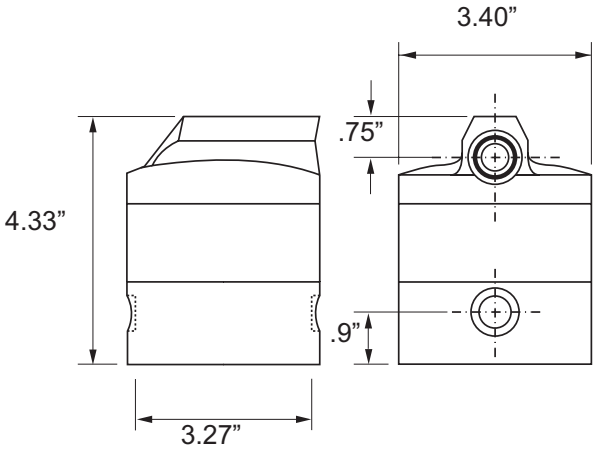
Dimensions

Standard Version



High Pressure Version



Features

- 1/2” Through 2” sizes
- Flow Ranges 0.26 to 8 GPM Through 4.0 to 92 GPM
- Pulse Output, Mechanical or Electronic Displays
- Aluminum or Stainless Steel Bodies
- Handles Viscosities to 1,000,000 Centipoise with Special Rotor
- Low Head Loss, Oval Gear Design

OMP Series Medium & High Flow Meters

Specifications

Maximum Pressure
Threaded Meters with Pulse or LCD Display: 800 PSIG
Threaded Meters with Mechanical Display: 500 PSIG

Max. Differential Pressure: 14.5 PSI

Wetted Components
Body: Aluminum or 316 Stainless steel
Gears: Ryton standard, optionally 316 SS
Shafts: 316 SS
O-ring: Buna-N standard, Viton, EPDM or Teflon optional

Maximum Operating Temp.
Ryton Gears: 175˚F
SS Gears: 250˚F

Minimum Viscosity: 5 centipoise (lower viscosities possible with reduced measuring range)

Accuracy: (% of reading) ± 0.5% for pulse & LCD ±1% for mechanical series

Maximum Viscosity
Standard: 1000 centipoise
Optional: To 1,000,000 centipoise with high viscosity rotors (reduced measuring range)

Output Type: NPN open collector, pulse 5-24 VDC, 25 mA Max. NEMA 6/IP66

Displays
LCD: Rate, re-settable and non-resettable total, 9V lithium battery powered, up to 999999.9 gallons. With additional pulse output. NEMA 4X/IP65

Mechanical: 6 digit non-resettable with resettable 4 digit batch totalizer

Maximum Flowrate Limit vs. Viscosity for Optional High Viscosity Gears

Viscosity	Max. Flow 1/2” Meter	Max. Flow 1” Meter	Max. Flow 1-1/2” Meter	Max. Flow 2” Meter
<2,500 cPs	7.9 GPM	31.7 GPM	66.0 GPM	92.0 GPM
<3,000 cPs	7.1 GPM	28.5 GPM	59.4 GPM	86.0 GPM
<4,000 cPs	6.3 GPM	25.3 GPM	52.8 GPM	74.0 GPM
<5,000 cPs	5.5 GPM	22.2 GPM	46.2 GPM	65.0 GPM
<8,000 cPs	4.7 GPM	19.0 GPM	39.6 GPM	56.0 GPM
<12,000 cPs	3.9 GPM	15.8 GPM	33.0 GPM	46.0 GPM
<25,000 cPs	3.1 GPM	12.7 GPM	26.4 GPM	37.0 GPM
<40,000 cPs	2.3 GPM	9.5 GPM	19.8 GPM	28.0 GPM
<95,000 cPs	1.5 GPM	6.3 GPM	13.2 GPM	18.5 GPM
<450,000 cPs	0.7 GPM	3.2 GPM	6.6 GPM	9.2 GPM
<1,000,000 cPs	0.4 GPM	1.6 GPM	3.3 GPM	4.6 GPM

OMP Medium and High Flowmeter Ordering Information

Flow Range GPM	Fitting Size NPT	Order Number Stainless Steel	Order Number Aluminum	Recommended Filtration
0.26-8.0	1/2”	OMP-1204	OMP-1304	60 mesh
1.6-32.0	1”	OMP-1210	OMP-1310	60 mesh
2.6-66.0	1-1/2”	OMP-1240	OMP-1340	60 mesh
4.0-92.0	2” (ANSI Flange Only)	OMP-1250	OMP-1350	60 mesh

Options

Option Code	Description
-A5	2-wire 4-20 mA module in place of pulse output (not with option -L or -M)
-F1	150 LB ANSI flanged fittings for 1” flowmeter
-F4	150 LB ANSI flanged fittings for 1-1/2” flowmeter
-L	LCD rate & total display with pulse output
-M	Mechanical totalizing display with resettable batch counter (no pulse output)
-OR2	Viton O-ring in place of Buna-N
-OR3	EPDM O-ring in place of Buna-N
-OR5	Teflon O-ring in place of Buna-N
-S	Stainless steel gears
-VP	High viscosity ryton gears (for viscosity > 1000 centipoise)
-VS	High viscosity stainless steel gears (for viscosity > 1000 centipoise)

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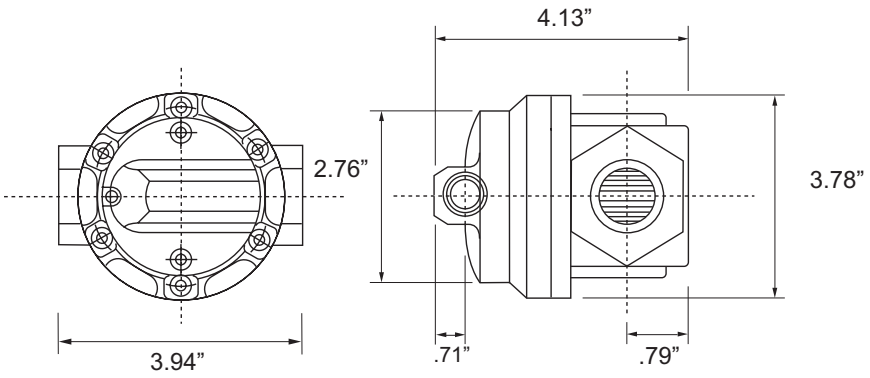
Dimensions

Flowmeters Without Display

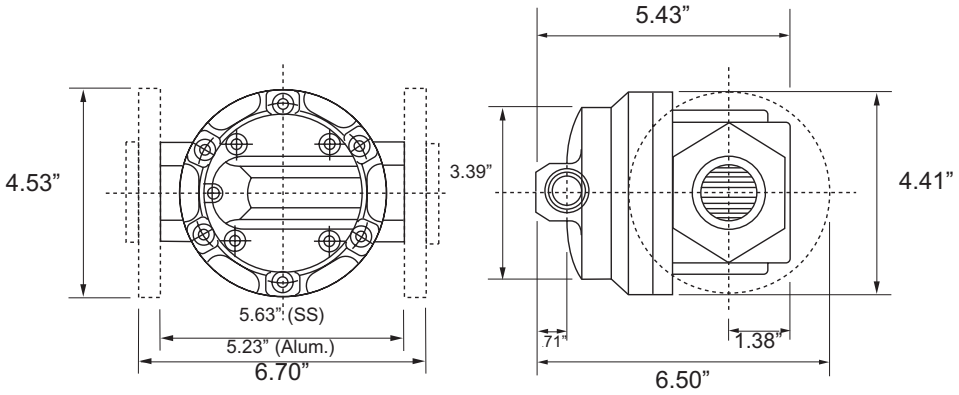
1/2” Flowmeter without Display



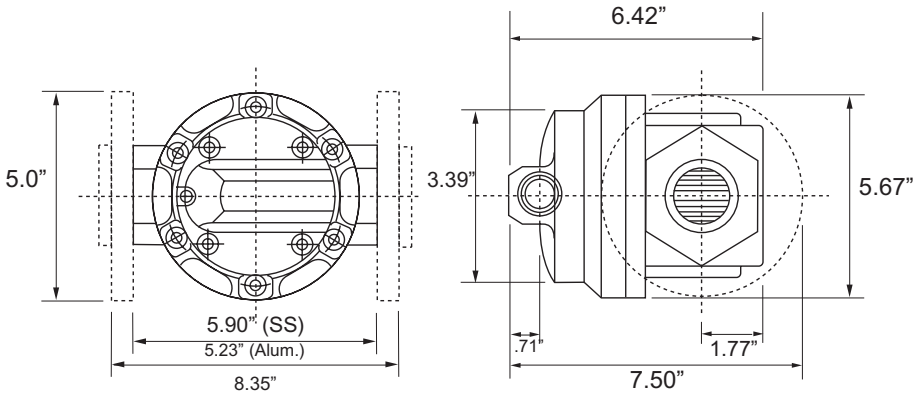
Dimensions

Flowmeters Without Display

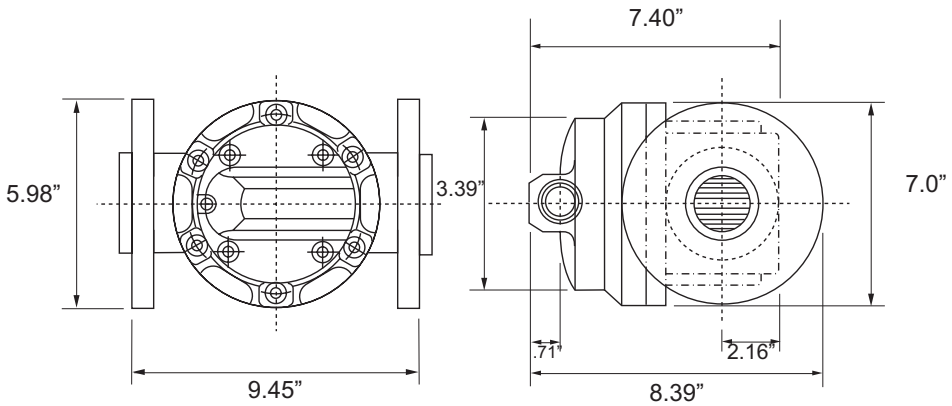
1” Flowmeter without Display



1-1/2” Flowmeter without Display



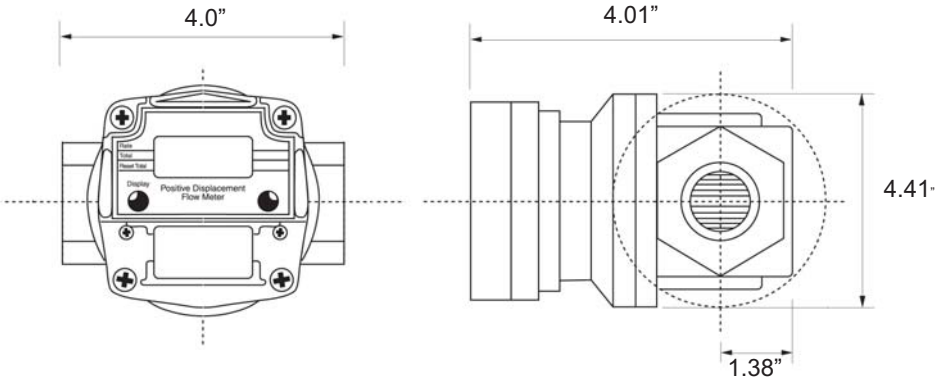
2” Flowmeter without Display



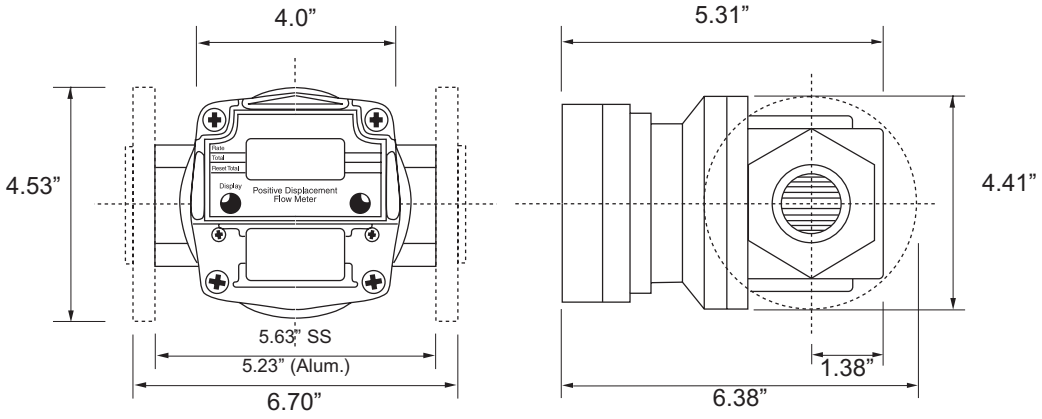
Dimensions

Flowmeters With LCD Display

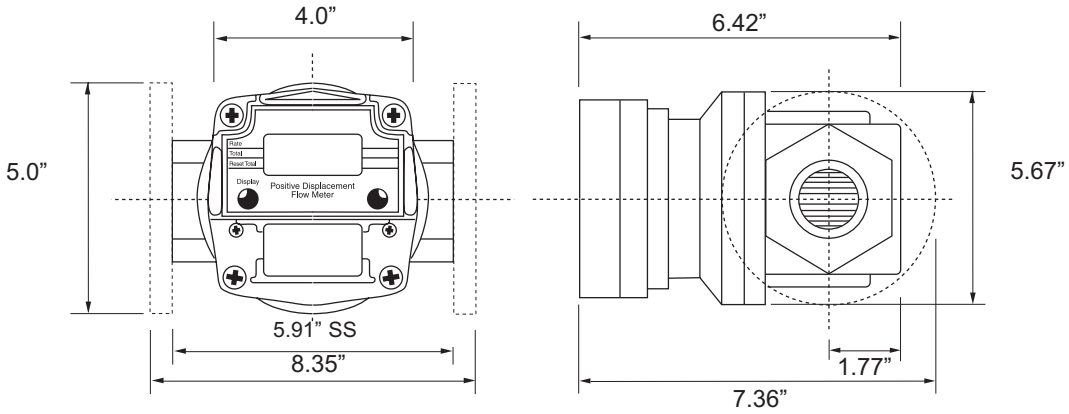
1/2” Flowmeter w/ LCD Display



1” Flowmeter w/ LCD Display



1-1/2” Flowmeter w/ LCD Display



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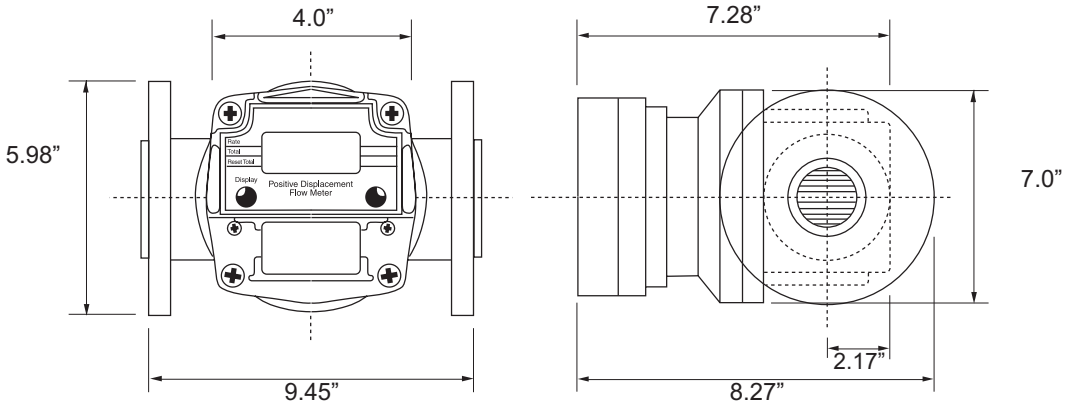
Dimensions

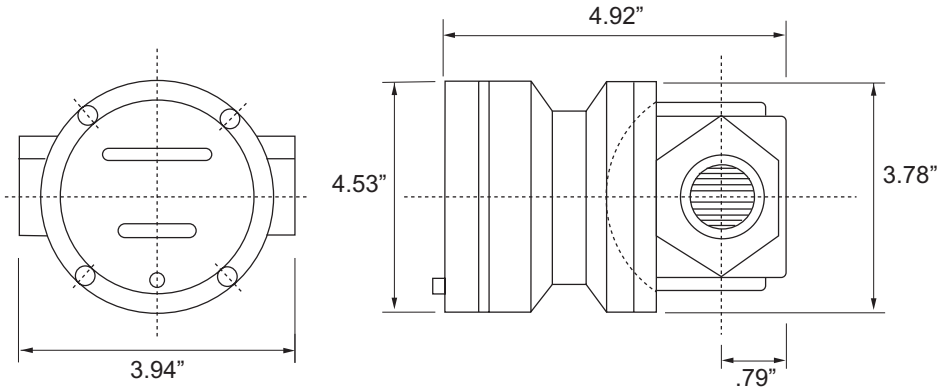
Flowmeters With LCD Display

2” Flowmeter w/ LCD Display

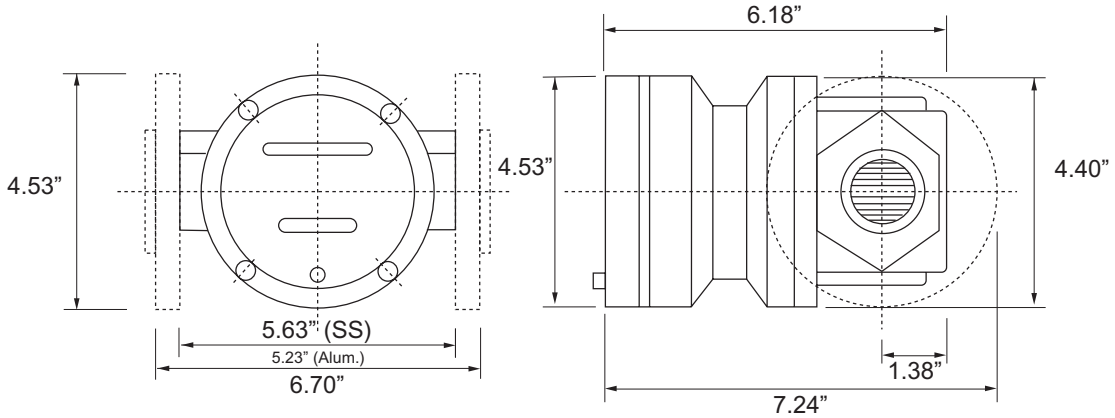


Flowmeters With Mechanical Display

1/2” Flowmeter w/ Mechanical Display



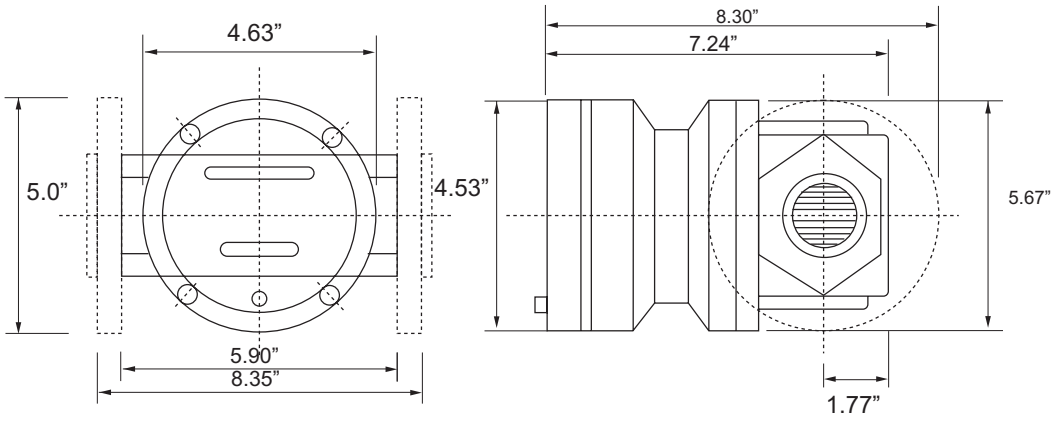
1” Flowmeter w/ Mechanical Display



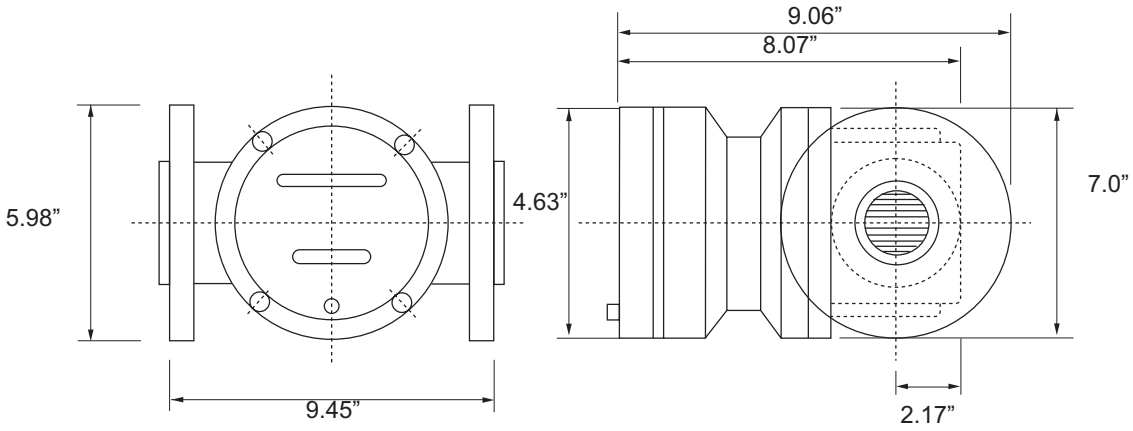
Dimensions

Flowmeters With Mechanical Display

1-1/2” Flowmeter w/Mechanical Display



2” Flowmeter w/ Mechanical Display



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OMP Positive Displacement Flowmeter Application Guide
Form # OMP-001
Rev. 02/06/02

FAX to:
KOBOLD Instruments Inc.
412-788-4890 (USA)
514-428-8899 (Canada)

Customer Name: _____

Company Name: _____

Phone: _____

Fax: _____

Quote #: _____ Date: _____ Price: _____ Each

Part Number: _____

* To ensure fast order processing, please retain the completed quote form and send it along with your purchase order.

Design Conditions

Accurate design pressure and temperature are essential to ensure the flowmeter will be built to operate without damage. Please fill out accurately and completely.

List Design Conditions

1. Pressure: Maximum _____ PSIG
2. Temperature: Maximum _____ ˚F

Process Conditions

1. Type of Liquid: _____
2. Normal Operating Temperature: _____˚F
3. Line Size: _____
4. Desired Measuring Range: _____GPM
5. Maximum Liquid Viscosity : _____

Body Materials

For OMP-1 and OMP-2 Low Flow Series:

☐ Ryton ☐ 316 SS (150 PSIG) ☐ 316 S (800 PSIG) ☐ 316 SS(8000 PSIG)

For Medium and High Flow Series:

☐ Aluminum ☐ 316 SS

Flowmeter Options OMP-1 and OMP-2 Low Flow Series

☐ EPDM seals
☐ Teflon seals
☐ High viscosity gears (OMP-2 only)
☐ Ryton gears w/ hastelloy C shafts (ryton bodies only)
☐ 2-wire 4-20 mA transmitter

Flowmeter Options - OMP Medium and High Flow Series

☐ Viton seals
☐ EPDM seals
☐ Teflon seals
☐ 2-wire 4-20 mA transmitter
☐ Mechanical totalizer
☐ LCD rate total display
☐ Stainless steel gears
☐ High viscosity stainless steel gears
☐ High viscosity ryton gears

FAX to
KOBOLD Instruments Inc.
412-788-4890 (USA)
514-428-8899 (Canada)

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