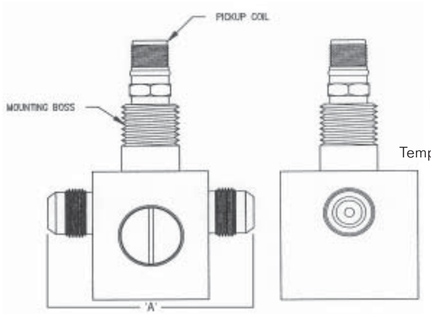
Installation

Standard Lo-Flo Series

Installation Guide



Weight: AN, NPT, Tubefitting – approximately 1 lb. (.045 kg.)
150 lb. (68 kg.) Flanged – approximately 3 lbs. (1.36 kg.)

Max. Pressure: 5,000 psi (based on fitting)

Temperature Range: -430 to 400˚F (-257°C to 204°C)

Endfittings: AN flare conforms to MS-33656 Flanges conform to ANSI B16.5 (Other end-fittings available upon request)

Material: 300 Series Stainless Steel Standard (Other materials available—consult factory)

Selected Endfitting		
	AN Flare	
Size	'A'	Connection
MF20-90	2 9/16" (6.51 cm.)	3/4-16UNJF-3A
MF100-175	3" (7.62 cm.)	3/4-16UNJF-3A

Standard Lo-Flo Meters - Model Selection Guide

MF(Size) - (Bearing) - (Rotor) - (Fitting) - (Material) (Options) (Boss) - (O-ring)
Example: MF20 - CB - PH - A - 4 X - N

*Bearing	*Rotor	*Fitting	*Material	Options	Boss	O-ring
CB= Cryo Ball	PH = 17-4	A= NPT	4 = 304 SS	RF = MCA Coil	X= 3/4"MNPT	N= Buna N
MB= Metal Ball	S = Special	B= AN	4L= 304L SS	HT = Hi Temp Coil	(included on	C= Neoprene
TS= Teflon		C= 150#CS	6 = 316 SS	MCI = Modulated Carrier Coil	standard unit)	V= Viton
CS= Carbide		D= 150#SS	6L= 316L SS			S= Silicone
GS= Graphitar		I= Tube				E= EPR
FS= Fluorosint		S= Special				
CR= Ceramic						

*Consult factory for other specifications

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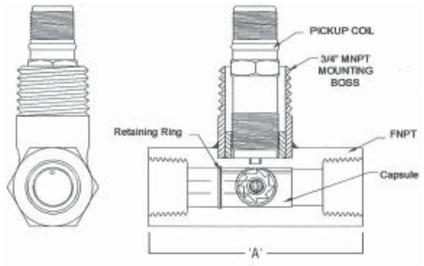
Encapsulated Lo-Flo Series

Installation Guide



Weight: FNPT, Autoclave = approx. 3 lbs. (1.36 kg.) High pressure = approx. 5-7 lbs. (between 2.3 to 3.18 kg.)

Max. Pressure: 20,000 psi (based on fitting)

Temperature Range: -430 to 1000˚F (-257°C to 538°C)

Endfittings: "High pressure" fitting mates to Grayloc© style fittings (Other endfittings available upon request)

Material: 300 Series Stainless Steel Standard (Other materials available—consult factory)

Selected Endfitting						
	FNPT		High Pressure		Autoclave	
Size	'A'	Connection	'A'	Connection	'A'	Connection
MF20-90	3" (7.62 cm.)	1/2" FNPT	5 1/4" (13.3 cm.)	1GR5	5 1/4"	SF-1000-CX
MF100-175	4 3/8" (11.11 cm.)	1" FNPT	6" (15.24 cm.)	2GR7		

Encapsulated Lo-Flo Meters - Model Selection Guide

MF(Size) - (Bearing) - (Rotor) - (Fitting) - (Material) (Options) (Boss) - ENC
Example: MF20 - CB - PH - FA - 4 X - ENC

*Bearing	*Rotor	*Fitting	*Material	Options	Boss
CB= Cryo Ball	PH = 17-4	FA= FNPT	4 = 304 SS	RF = MCA Coil	X= 3/4"MNPT
MB= Metal Ball	S = Special	S= Special	4L= 304L SS	HT = Hi Temp Coil	(included on standard unit)
TS= Teflon		GR5	6 = 316 SS	MCI = Modulated Carrier Coil	
CS= Carbide		GR7	6L= 316L SS		
GS= Graphitar					
FS= Fluorosint					

*Consult factory for other specifications
CR = Ceramic

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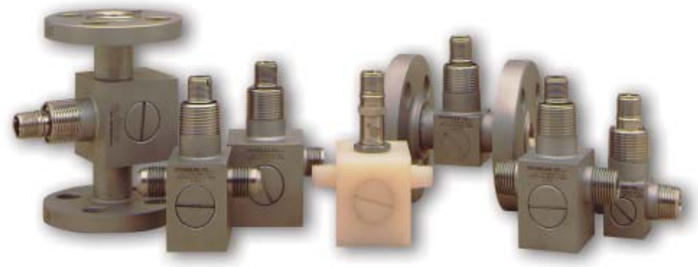
LO-FLO SERIES
PRECISION FLOWMETERS



- Liquid / Gas Measurement
- Standard and Custom Design
- Low maintenance Cost
- Varied pressure Capability depending on End-fitting
- Temperature ranges from -430˚F to +1000˚F
- Encapsulation option for High Pressure, High or Low Temperature, or extreme Corrosive environment
- Flowrate from .002–3 US GPM (7.5–10,000 CC/MIN) in 12 overlapping ranges
- Repeatable to +/- 0.25% of reading
- AC Sinewave signal output

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Sponsler Lo-Flo Series Precision Flowmeters are designed to measure flowrates as low as .002 GPM (7.5cc/min). Lo-Flo flowmeters deliver an AC sine wave output with repeatability of +/- 0.25% of reading. Although nominal flow rates of 10:1 are recommended, wider ranges can be achieved. For range specifications, see the sizing chart.

The Lo-Flo Series, with proper choice of instrumentation, may be set up to indicate, record, or control rate of flow or total flow.

Design Applications

Sponsler engineers design flow systems to meet customer specifications with automatic, semi-automatic, or manual batch or process control, blending, and filling systems, including simple rate indication and totalization. Standard and custom electronic instrumentation is available for a wide range of applications.

Typical Applications

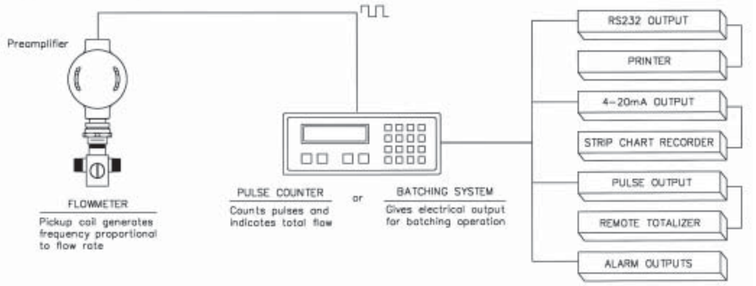
Liquids

Cryogenic Liquids
Mercaptans
Water, Fresh
Water, DI
Water, Salt
Freon

Gases

Cryogenic Gases
Methane
Steam
Ammonia
Air
Sulfur Dioxide

Typical Arrangement of Flowmeter and Readout Instrument



Reference installation chart for sizes

Materials Of Construction Include:
304 Stainless Steel
316 Stainless Steel
(Others available—consult factory)

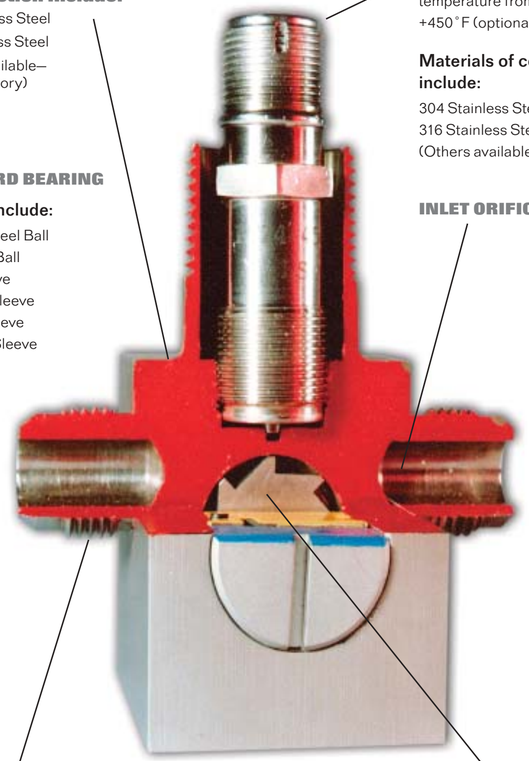
STANDARD BEARING

Choices include:
Stainless Steel Ball
Cryogenic Ball
Teflon Sleeve
Graphitar Sleeve
Carbide Sleeve
Fluorosint Sleeve

PICKUP COIL
temperature from –450˚F to +450˚F (optional to +1000˚F)

Materials of construction include:
304 Stainless Steel
316 Stainless Steel
(Others available—consult factory)

INLET ORIFICE



ENDFITTINGS INCLUDE:

For Standard Series:
MNPT, 37˚ Flare, Tubefitting, & Flanged.

For Encapsulated Series:
FNPT & High Pressure

PELTON WHEEL ROTOR

Materials include:
Nickel
17-4 PH Stainless Steel
300 Series Stainless Steel
400 Series Stainless Steel
(Others available—consult factory)

Sizing Chart

Minimum Flow Range Achieved on Reluctance Type Meters Only.
Data Based on Fluids with Viscosity of 1 Centistoke
Flow Range Available Both Inductance and Reluctance Type Meters
Accuracy: Repeatable ±0.25% of Reading. Frequencies Shown are for Reluctance Type Meters.

Size	Mag Pickup (GPM)	Mag Pickup (cc / min)	Modulated Carrier (GPM)	Modulated Carrier (cc / min)	ΔP	Modulated Carrier (ACFM)	Modulated Carrier am3 / HR
MF20	.007 - .07	26 - 260	.002 - .07	7.5 - 260	20	.01 - .04	.017 - .07
MF30	.008 - .09	30 - 300	.004 - .09	15 - 300	10	.025 - .05	.04 - .08
MF40	.01 - .17	38 - 644	.007 - .17	26 - 644	10	.03 - .07	.05 - .11
MF50	.013 - .25	49 - 950	.009 - .25	34 - 950	10	.035 - .08	.06 - .14
MF60	.015 - .35	60.0 - 1300	.010 - .35	40 - 1300	10	.04 - .12	.07 - .2
MF70	.02 - .45	75 - 1700	.013 - .45	50 - 1700	10	.045 - .15	.08 - .25
MF80	.03 - .65	112 - 2500	.017 - .65	65 - 2500	10	.06 - .2	.10 - .34
MF90	.04 - .75	150 - 2800	.03 - .75	110 - 2800	10	.065 - .25	.11 - .42
MF100	.07 - .95	265 - 3800	.05 - .95	190 - 3800	10	.07 - .3	.12 - .50
MF125	.08 - 1.5	300 - 5675	.06 - 1.5	225 - 5675	10	.085 - .4	.14 - .68
MF150	.10 - 2.0	380 - 7500	.08 - 2.0	300 - 7500	10	.125 - .9	.22 - 1.52
MF175	.13 - 3.0	490 - 11500	.1 - 3.0	375 - 11500	15	.140 - 1.15	.24 - 1.95

Note: Ranges based on density of 1 lb. per cubic foot and a stainless steel ball bearing.

Sponsler Lo-Flo Gas meters are designed to measure in actual cubic feet or actual volume passing through the meter. Before sizing a flowmeter, it is necessary to convert flow units (i.e. SCFM, LPM, etc.) to actual units. To convert to actual measured volume (ACFM) from standard volume (SCFM) use the following formula:

ACFM = SCFM X 14.7/Pa x Ta/530

Where:

ACFM = Actual cubic feet per minute measured gas flow

SCFM = Standard cubic feet per minute gas flow

Pa = Operating pressure in PSIA

= PSIG + 14.7

Ta = Temperature in degrees Rankine = F +460