

F-400N

1/4", 3/8", 1/2" F/NPT

Rod Guided Float



Features:

- Tough machined acrylic meter body, highly polished to a clear finish.
- Direct reading permanent scale.
- White back reflector for easy reading.
- F/NPT adapters with high grade Viton o-ring seals and aluminum "stress ring" thread supports.
- 316 stainless steel or Hastelloy rod guided floats.
- Acceptable in direct sunlight applications.

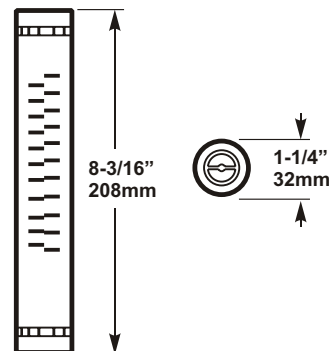
Materials of Construction:

- Meter Body:** Cast Acrylic Rod
Adapters: Polypropylene or PVC (varies per model)
O-ring seals: Viton[®] (optional EP)
Float:
 Standard Series 316SS or PVC (varies per model)
 K- Series Hastelloy or PVC (varies per model)
Guide Rod:
 Standard Series 316SS
 K- Series Hastelloy

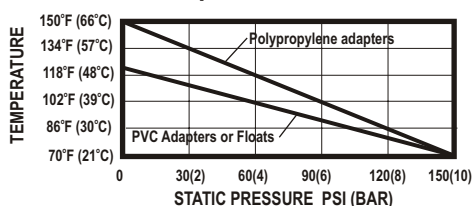
Specifications:

- Max. working pressure:** 150 PSI (10.3 bar) @ 70° F (21° C)
Max. Fluid Temperature:
 Polypropylene adapters: 150° F (65° C) @ 0 PSI
 PVC adapters and floats: ... 120° F (49° C) @ 0 PSI
Full scale accuracy: +/- 5%
Calibration fluid: water, specific gravity 1.0
Scale length: 4" (100mm)
Environment: Acceptable for direct sunlight exposure.
Maximum pressure drop: 2 PSI
Approximate shipping wt: ... 0.5 lb. (.23 kg)

Dimensions:



Maximum Temperature vs. Pressure



Installation Requirements:

1. Misalignment will damage the meter!

Flowmeter must be installed in an exact vertical plane to ensure accuracy. Be certain of proper plumbing alignments. Misalignment may cause the o-ring seals to leak.

2. Pipe dope and glue will damage the meter!

Use only Teflon[®] tape on the threaded adapters. The meter body and plastic fittings cannot tolerate PVC Glue and/or pipe dope. Even fumes can cause severe damage. If you are installing your flowmeter to a glued pipe configuration, install the flowmeter *after* all glued fittings are dried and lines are purged of all fumes. **Never** hold the meter body with pliers or like tools. **DO NOT OVER-TIGHTEN!**

3. Vibration and heavy loads will damage the meter!

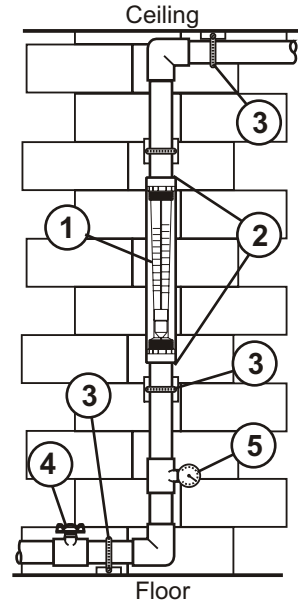
Wall, floor and ceiling mounts and supports must be carefully aligned with the meter body and sturdy enough to support the plumbing and prevent vibration. Never allow the flowmeter to support the weight of related piping.

4. Solenoid valves will damage the meter!

Avoid a system that will impose a sudden burst of flow to the meter. Such a burst will cause the float to impact the float stop with destructive force. Solenoid valves, or other quick opening valves cannot be used unless meter is protected against sudden bursts of flow.

5. High pressures and temperatures will damage the meter!

The maximum acceptable temperature and pressure is interdependent. The maximum acceptable working pressure is dependant on the actual fluid temperature. The maximum acceptable fluid temperature is dependant on the actual working pressure. (see Temperature Vs. Pressure chart).



Flow Range and Model Options:

Standard Series

- Equipped with 316 SS guide rod

Models for Liquid

MODEL NUMBER	Dual Scale Range		Adapter F/NPT	Adapter Material	Float Material
	GPM	LPM			
F-40250LN-4	0.025 to 0.250	0.1 to 1.0	1/4"	PVC	PVC
F-40250LN-6	0.025 to 0.250	0.1 to 1.0	3/8"	Polypropylene	PVC
F-40050LN-4	0.050 to 0.500	0.2 to 2.0	1/4"	PVC	316 SS
F-40050LN-6	0.050 to 0.500	0.2 to 2.0	3/8"	Polypropylene	316 SS
F-40375LN-6	0.1 to 1.0	0.4 to 4.0	3/8"	Polypropylene	PVC
F-40375LN-8	0.1 to 1.0	0.4 to 4.0	1/2"	Polypropylene	PVC
F-40376LN-6	0.2 to 2.0	1.0 to 7.5	3/8"	Polypropylene	316 SS
F-40376LN-8	0.2 to 2.0	1.0 to 7.5	1/2"	Polypropylene	316 SS
F-40377LN-6	0.3 to 3.0	1.5 to 11	3/8"	Polypropylene	316 SS
F-40377LN-8	0.3 to 3.0	1.5 to 11	1/2"	Polypropylene	316 SS
F-40500LN-6	0.5 to 5.0	2.0 to 20	3/8"	Polypropylene	316 SS
F-40500LN-8	0.5 to 5.0	2.0 to 20	1/2"	Polypropylene	316 SS

Models for Air

MODEL NUMBER	Dual Scale Range		Adapter F/NPT	Adapter Material	Float Material
	SCFM	M ³ HR			
F-40250GN-4	0.20 to 2.0	0.4 to 3.2	1/4"	PVC	PVC
F-40250GN-6	0.20 to 2.0	0.4 to 3.2	3/8"	Polypropylene	PVC
F-40376GN-6	0.75 to 7.5	1.0 to 10	3/8"	Polypropylene	316 SS
F-40376GN-8	0.75 to 7.5	1.0 to 10	1/2"	Polypropylene	316 SS
F-40377GN-6	1.0 to 12	2.0 to 20	3/8"	Polypropylene	316 SS
F-40377GN-8	1.0 to 12	2.0 to 20	1/2"	Polypropylene	316 SS
F-40500GN-6	2.0 to 20	4.0 to 34	3/8"	Polypropylene	316 SS
F-40500GN-8	2.0 to 20	4.0 to 34	1/2"	Polypropylene	316 SS

K-Series

- Equipped with Hastelloy guide rod

K-Series models are specially equipped for highly corrosive applications.

Models for Liquid

MODEL NUMBER	Dual Scale Range		Adapter F/NPT	Adapter Material	Float Material
	GPM	LPM			
F-40250LK-4	0.025 to 0.250	0.1 to 1.0	1/4"	PVC	PVC
F-40250LK-6	0.025 to 0.250	0.1 to 1.0	3/8"	Polypropylene	PVC
F-40050LK-4	0.050 to 0.500	0.2 to 2.0	1/4"	PVC	Hastelloy
F-40050LK-6	0.050 to 0.500	0.2 to 2.0	3/8"	Polypropylene	Hastelloy
F-40375LK-6	0.1 to 1.0	0.4 to 4.0	3/8"	Polypropylene	PVC
F-40375LK-8	0.1 to 1.0	0.4 to 4.0	1/2"	Polypropylene	PVC
F-40376LK-6	0.2 to 2.0	1.0 to 7.5	3/8"	Polypropylene	Hastelloy
F-40376LK-8	0.2 to 2.0	1.0 to 7.5	1/2"	Polypropylene	Hastelloy
F-40377LK-6	0.3 to 3.0	1.5 to 11	3/8"	Polypropylene	Hastelloy
F-40377LK-8	0.3 to 3.0	1.5 to 11	1/2"	Polypropylene	Hastelloy
F-40500LK-6	0.5 to 5.0	2.0 to 20	3/8"	Polypropylene	Hastelloy
F-40500LK-8	0.5 to 5.0	2.0 to 20	1/2"	Polypropylene	Hastelloy

Correction factor formulas for AIR models

PRESSURE CORRECTION

$$\sqrt{\frac{14.7 + \text{Working PSIG}}{14.7}}$$

TEMPERATURE CORRECTION

$$\sqrt{\frac{520}{460 + \text{Working Temp } ^\circ\text{F}}}$$

Notes:

1) Liquid models calibrated with water, Sp.Gr. 1.0. Custom Sp.Gr. calibrations available. Contact the factory.

2) Air models calibrated at standard Conditions (70°F @ 14.7 PSia). Temperature and pressure correction may be required. Contact the factory for custom calibrations.

F-451 Series - Rod guided Polysulfone Variable Area Meter



F-451006LHNN F-451006LHNC

INLINE MOUNT

F-451006LHNE F-451006LHNEC

PANEL MOUNT

F-451001LHBSN

SOLARMETERS®

F-451 Features:

- Polysulfone meter body resists high temperatures and pressures.
- 316 SS, Teflon or Hastelloy rod guided float.
- Direct reading permanent scale.
- 1" and 1-1/2" Inline units.
- 1" M/NPT panel mount units.
- 1" F/NPT and 1" sweat brass units.
- Not recommended for direct sunlight.
- Available OEM options: Private labeling, custom calibrations and custom materials.

F-451 Specifications:

Max. Working Pressure: ... 150 psig (10.3 bar) @ 70° F (21° C)
 Max. Fluid Temperature:
 Models for 1" pipe: 212° F (100° C) @ 0 PSI
 Models for 1-1/2" pipe: .. 130° F (54° C) @ 0 PSI
 SolarMeters® : 240° F (115° C) @ 0 PSI
 Full scale accuracy: +/- 3%
 Meter body material: Polysulfone
 Adapter material:
 Models for 1" pipe: Polysulfone
 Models for 1-1/2" pipe: .. PVC
 SolarMeters® : Brass
 Union Nuts: Glass fiber reinforced Nylon
 Guide Rod Material: 316 SS or Hastelloy C-276
 O-ring Material: Viton
 Options: EPDM
 Max. pressure drop: 2 psi
 Approximate shipping wt.. 3 lb. (1.36 kg)

Standard models for liquid

Pipe Size	Dual Scale Range		Float Material	Guiderod Material	INLINE MODELS		PANEL MOUNT MODELS		INLINE SOLARMETERS®	
	GPM	LPM			NON-SHIELDED	SHIELDED	NON-SHIELDED	SHIELDED	FEMALE NPT	SWEAT
					MODEL NUMBER	MODEL NUMBER	MODEL NUMBER	MODEL NUMBER	MODEL NUMBER	MODEL NUMBER
1"	.5 to 6	2 to 22	Teflon	316 SS	F-451006LHN	F-451006LHNC	F-451006LHNE	F-451006LHNEC	F-451006LHBPN	F-451006LHBSN
1-1/2"	.5 to 6	2 to 22	Teflon	316 SS	F-451006LHN-24	F-451006LHNC-24				
1"	1.0 to 10	4 to 40	316 SS	316 SS	F-451001LHN	F-451001LHNC	F-451001LHNE	F-451001LHNEC	F-451001LHBPN	F-451001LHBSN
1-1/2"	1.0 to 10	4 to 40	316 SS	316 SS	F-451001LHN-24	F-451001LHNC-24				
1"	2.0 to 20	7.5 to 75	316 SS	316 SS	F-451002LHN	F-451002LHNC	F-451002LHNE	F-451002LHNEC	F-451002LHBPN	F-451002LHBSN
1-1/2"	2.0 to 20	7.5 to 75	316 SS	316 SS	F-451002LHN-24	F-451002LHNC-24				
1"	3.0 to 30	12 to 115	316 SS	316 SS	F-451003LHN	F-451003LHNC	F-451003LHNE	F-451003LHNEC	F-451003LHBPN	F-451003LHBSN
1-1/2"	3.0 to 30	12 to 115	316 SS	316 SS	F-451003LHN-24	F-451003LHNC-24				
1"	4.0 to 40	15 to 155	316 SS	316 SS	F-451004LHN	F-451004LHNC	F-451004LHNE	F-451004LHNEC	F-451004LHBPN	F-451004LHBSN
1-1/2"	4.0 to 40	15 to 155	316 SS	316 SS	F-451004LHN-24	F-451004LHNC-24				

Standard models for Air

Pipe Size	Dual Scale Range		Float Material	Guiderod Material	INLINE MODELS		PANEL MOUNT MODELS		INLINE SOLARMETERS®	
	SCFM	M ³ HR			NON-SHIELDED	SHIELDED	NON-SHIELDED	SHIELDED	FEMALE NPT	SWEAT
					MODEL NUMBER	MODEL NUMBER	MODEL NUMBER	MODEL NUMBER	MODEL NUMBER	MODEL NUMBER
1"	4 to 40	7 to 70	316 SS	316 SS	F-451001GHN	F-451001GHNC	F-451001GHNE	F-451001GHNEC	F-451001GHBPN	F-451001GHBSN
1-1/2"	4 to 40	7 to 70	316 SS	316 SS	F-451001GHN-24	F-451001GHNC-24				
1"	8 to 80	14 to 140	316 SS	316 SS	F-451002GHN	F-451002GHNC	F-451002GHNE	F-451002GHNEC	F-451002GHBPN	F-451002GHBSN
1-1/2"	8 to 80	14 to 140	316 SS	316 SS	F-451002GHN-24	F-451002GHNC-24				

K-Series - Specially Equipped models for liquid

K-Series models are specially equipped for highly corrosive applications.

Pipe Size	Dual Scale Range		Float Material	Guiderod Material	INLINE MODELS		PANEL MOUNT MODELS	
	GPM	LPM			NON-SHIELDED	SHIELDED	NON-SHIELDED	SHIELDED
					MODEL NUMBER	MODEL NUMBER	MODEL NUMBER	MODEL NUMBER
1"	.5 to 6	2 to 22	Teflon	Hastelloy	F-451006LHKN	F-451006LHKNC	F-451006LHKNE	F-451006LHKNEC
1-1/2"	.5 to 6	2 to 22	Teflon	Hastelloy	F-451006LHKN-24	F-451006LHKNC-24		
1"	1.0 to 10	4 to 40	Hastelloy	Hastelloy	F-451001LHKN	F-451001LHKNC	F-451001LHKNE	F-451001LHKNEC
1-1/2"	1.0 to 10	4 to 40	Hastelloy	Hastelloy	F-451001LHKN-24	F-451001LHKNC-24		
1"	2.0 to 20	7.5 to 75	Hastelloy	Hastelloy	F-451002LHKN	F-451002LHKNC	F-451002LHKNE	F-451002LHKNEC
1-1/2"	2.0 to 20	7.5 to 75	Hastelloy	Hastelloy	F-451002LHKN-24	F-451002LHKNC-24		
1"	3.0 to 30	12 to 115	Hastelloy	Hastelloy	F-451003LHKN	F-451003LHKNC	F-451003LHKNE	F-451003LHKNEC
1-1/2"	3.0 to 30	12 to 115	Hastelloy	Hastelloy	F-451003LHKN-24	F-451003LHKNC-24		
1"	4.0 to 40	15 to 155	Hastelloy	Hastelloy	F-451004LHKN	F-451004LHKNC	F-451004LHKNE	F-451004LHKNEC
1-1/2"	4.0 to 40	15 to 155	Hastelloy	Hastelloy	F-451004LHKN-24	F-451004LHKNC-24		

Installation Guideline

Caution: Follow these instructions to avoid failure.

Danger: Wear eye protection when installing or removing flowmeter.

1. Misalignment will damage the meter!

Flowmeter must be installed in an exact vertical plane to ensure accuracy. Be certain of proper plumbing alignments. Misalignment may cause the o-ring seals to leak. The meterbody material can be damaged by UV rays. **Do not install in direct sunlight.**

2. Pipe dope and glue will damage the meter!

Use only Teflon® tape on the threaded adapters. Polysulfone meter body and fittings cannot tolerate PVC Glue and/or pipe dope. Even fumes can cause severe damage. If you are installing your flowmeter to a glued pipe configuration, install the flowmeter *after* all glued fittings are dried and lines are purged of all fumes. **Never** hold the meter body with pliers or like tools. Union nuts should be hand tightened only. **DO NOT OVER-TIGHTEN!**

3. Vibration and heavy loads will damage the meter!

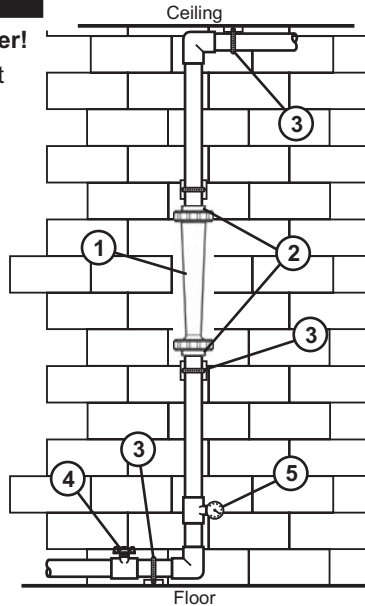
Wall, floor and ceiling mounts and supports must be carefully aligned with the meter body and sturdy enough to support the plumbing and prevent vibration. Never allow the flowmeter to support the weight of related piping.

4. Solenoid valves will damage the meter!

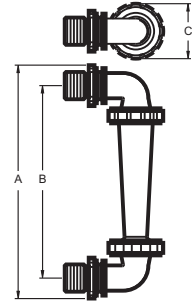
Avoid a system that will impose a sudden burst of flow to the meter. Such a burst will cause the float to impact the float stop with destructive force. Solenoid valves, or other quick opening valves cannot be used unless meter is protected against sudden bursts of flow.

5. High pressures and temperatures will damage the meter!

The maximum acceptable temperature and pressure is interdependent. The maximum acceptable working pressure is dependant on the actual fluid temperature. The maximum acceptable fluid temperature is dependant on the actual working pressure. (see Temperature Vs. Pressure chart).



Dimensions Inline Models	
A	B
14-1/2"	3-5/16"



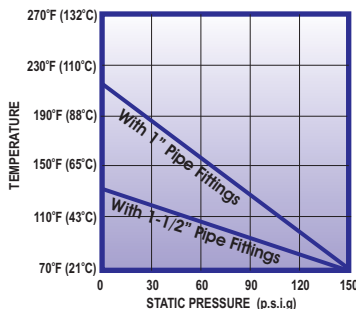
Dimensions Panel Mount Models		
A	B	C
17"	15"	3-5/16"

F-451 Series Parts

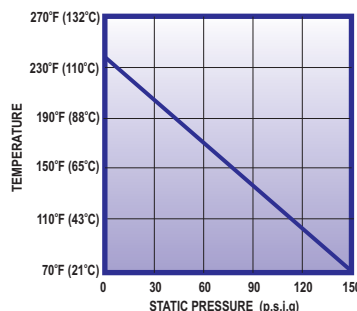
Part Number	Description
F-45038N	Union Nut
F-45030N	Adapter, Inline, 1" F/NPT, Polysulfone
F-45047N	Adapter, Inline, 1" F/NPT, Brass
F-45039N	Adapter, Inline, 1" sweat, Brass
76000-967	Adapter, Inline, 1-1/2" F/NPT, PVC
F-45031	Adapter, 90° Panel Elbow, 1" F/NPT, Polysulfone
F-45032	Lock nut for Panel elbow
2-136V	O-ring, Viton
F-45025	Wireholder, .5-6, 1-10, 2-20 gpm, 8-80 scfm
F-45025-2	Wireholder, 3-30, 4-40 gpm
F-45028	Guide Rod, 316 SS, .5-6, 1-10, 2-20 gpm, 8-80 scfm
F-45028-2	Guide Rod, 316 SS, 3-30, 4-40 gpm
F-45028H	Guide Rod, Hast., .5-6, 1-10, 2-20 gpm, 8-80 scfm
F-45028H-2	Guide Rod, Hast., 3-30, 4-40 gpm
F-45034S	Shield, Polycarbonate
F-45034	Shield retainer adapter

Maximum Temperature vs. Pressure

F-451 Standard Meters



F-451 SolarMeters®



Blue-White
Industries, Ltd.