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Blue-White® Industries, Ltd.

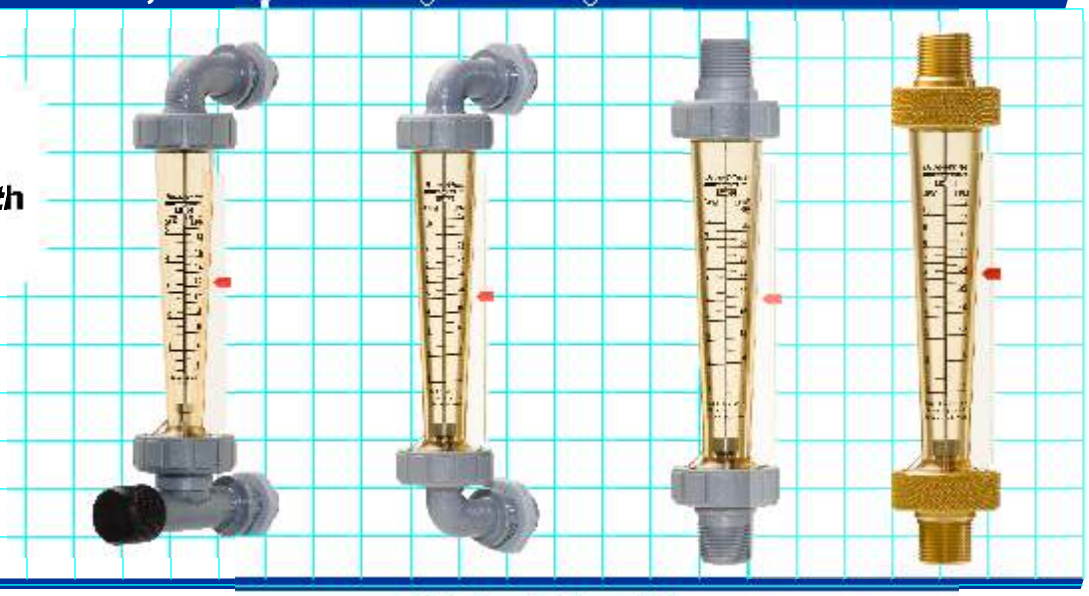
Variable Area Flow Meters

Engineering and Technical Data

F-450

Long Scale Length

Rod Guided Float



Features:

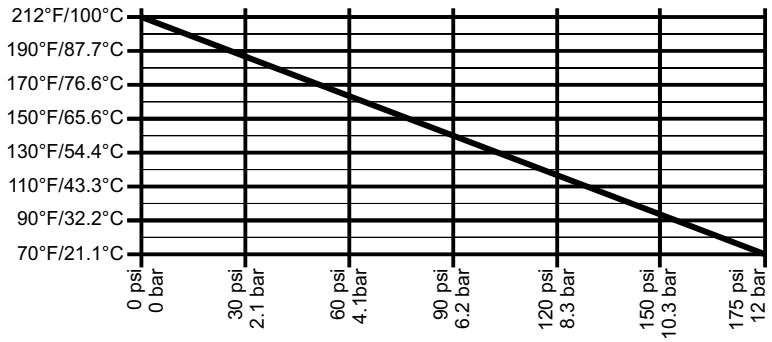
- Polysulfone meter body resists high temperatures and pressures.
- Taller size for easier reading.
- 316SS or Hastelloy rod guided float.
- Union connections for easy installation and maintenance.
- Direct reading permanent scale.

Materials of Construction:

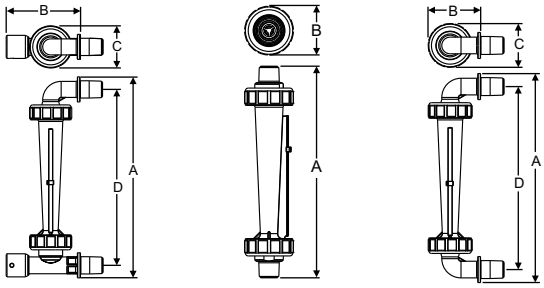
Meter Body: .....Polysulfone
Adapters:
Standard Series .....Polysulfone M/NPT, Polypro F/NPT
Solarmeter® Series.....Brass M/NPT or Sweat
Guide Rod Holder: .....Polysulfone
O-ring seals:.....Viton® (optional EP)
Union Nuts (non wetted):
Standard Series .....Nylon
Solarmeter® Series.....Anodized Aluminum
Float:.....316SS or Teflon (varies per model)
Guide Rod:
Standard Series 316SS
K- Series .....Hastelloy

Specifications:

Max. working pressure:.....175 PSI (12 bar) @ 70°F (21°C)
Max. fluid temperature:
Standard units.....212° F (100° C) @ 0 PSI
Solarmeter® units .....240° F (115° C) @ 0 PSI
Full scale accuracy:.....+/- 4%
Calibration fluid: .....Water, specific gravity 1.0
Scale length: .....4" (100mm) approx.
Environment:.....Not for direct sunlight exposure.
Maximum pressure drop: .....2 PSI
Approximate shipping wt: ...0.5 lb. (.23 kg)



Dimensions:



	Model No.	Dim A	Dim B	Dim C	Dim D
Inline	F-45330 F-45375 F-45376 F-45500	8-7/8" 225.5mm	1-3/4" 44.4mm	N/A	N/A
Inline	F-45750	10" 254mm	2" 51mm	N/A	N/A
Elbow	F-45330E F-45375E F-45376E F-45500E	9-7/8" 250.8mm	2-1/2" 63.5mm	2" 51mm	8-9/16" 217.5mm
Elbow	F-45750E	10" 254mm	2-1/2" 63.5mm	2" 51mm	9-3/16" 233mm
Adjustable	F-45330A F-45375A F-45376A F-45500A F-45750A	9-7/8" 250.8mm	3-5/8" 92mm	2" 51mm	8-9/16" 217.5mm
Adjustable	F-45750A	10" 254mm	3-5/8" 92mm	2" 51mm	9-1/8" 231.8mm

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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. 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. 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. Union nuts should be hand tightened only. **DO NOT OVER-TIGHTEN!**

3. Vibration and heavy loads will damage the meter!

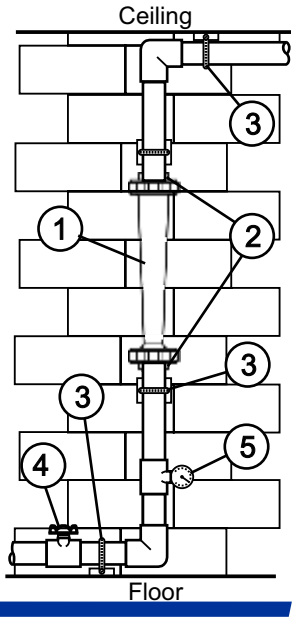
Wall, floor and ceiling mounts and supports must be carefully aligned with the meter body and sturdy enough to support the plumbing and prevent vibration. Never allow the flowmeter to support the weight of related piping.

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).



Flow Range and Model Options:

Standard Series - Equipped with 316 SS guide rod

Models for Liquid

Pipe Size	Dual Scale Range GPM	Dual Scale Range LPM	Float Material	IN-LINE MOUNT MODEL NUMBER	PANEL MOUNT MODEL NUMBER	PANEL MOUNT ADJUSTABLE MODEL NUMBER
3/8" F/NPT	0.1 to 1.0	0.4 to 4.0	Teflon	F-45375L-6	F-45375LE-6	F-45375LA-6
1/2" M/NPT	0.1 to 1.0	0.4 to 4.0	Teflon	F-45375L-8	F-45375LE-8	F-45375LA-8
3/8" F/NPT	0.2 to 2.0	1.0 to 7.5	316 SS	F-45376L-6	F-45376LE-6	F-45376LA-6
1/2" M/NPT	0.2 to 2.0	1.0 to 7.5	316 SS	F-45376L-8	F-45376LE-8	F-45376LA-8
3/8" F/NPT	0.5 to 5.0	2.0 to 20.0	316 SS	F-45500L-6	F-45500LE-6	F-45500LA-6
1/2" M/NPT	0.5 to 5.0	2.0 to 20.0	316 SS	F-45500L-8	F-45500LE-8	F-45500LA-8
3/4" M/NPT	0.5 to 5.0	2.0 to 20.0	316 SS	F-45500L-12	F-45500LE-12	F-45500LA-12
3/4" M/NPT	1.0 to 10.0	4.0 to 40.0	316 SS	F-45750L-12	F-45750LE-12	F-45750LA-12

Models for Air

Pipe Size	SCFM	M^3HR	Float Material	MODEL NUMBER	MODEL NUMBER	MODEL NUMBER
3/8" F/NPT	1.0 to 12.0	2.0 to 20.0	316 SS	F-45376G-6	F-45376GE-6	F-45376GEA-6
1/2" M/NPT	1.0 to 12.0	2.0 to 20.0	316 SS	F-45376G-8	F-45376GE-8	F-45376GEA-8
3/4" M/NPT	4.0 to 48.0	8.0 to 80.0	316 SS	F-45750G-12	F-45750GE-12	F-45750GEA-12

K-Series - Equipped with Hastelloy guide rod

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

Models for Liquid

Float Material	IN-LINE MOUNT MODEL NUMBER	PANEL MOUNT MODEL NUMBER	PANEL MOUNT ADJUSTABLE MODEL NUMBER
Teflon	F-45375LK-6	F-45375LKE-6	F-45375LKA-6
Teflon	F-45375LK-8	F-45375LKE-8	F-45375LKA-8
Hastelloy	F-45376LK-6	F-45376LKE-6	F-45376LKA-6
Hastelloy	F-45376LK-8	F-45376LKE-8	F-45376LKA-8
Hastelloy	F-45500LK-6	F-45500LKE-6	F-45500LKA-6
Hastelloy	F-45500LK-8	F-45500LKE-8	F-45500LKA-8
Hastelloy	F-45500LK-12	F-45500LKE-12	F-45500LKA-12
Hastelloy	F-45750LK-12	F-45750LKE-12	F-45750LKA-12

Solarmeter® Series - Equipped with 316 SS guide rod

Solarmeter® models are available for in-line installations only.

Models for Liquid with Brass Adapters

Pipe Size	Dual Scale Range GPM	Dual Scale Range LPM	Float Material	MALE NPT MODEL NUMBER	SWEAT MODEL NUMBER
1/2"	0.1 to 1.0	0.4 to 4.0	Teflon	F-45375LB-9	F-45375LB-8
1/2"	0.2 to 2.0	1.0 to 7.5	316 SS	F-45376LB-9	F-45376LB-8
1/2"	0.5 to 5.0	2.0 to 20.0	316 SS	F-45500LB-9	F-45500LB-8
3/4"	0.5 to 5.0	2.0 to 20.0	316 SS	F-45500LB-13	F-45500LB-12
3/4"	1.0 to 10.0	4.0 to 40.0	316 SS	F-45750LB-13	F-45750LB-12

Correction factor formulas for AIR models

PRESSURE CORRECTION

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

TEMPERATURE CORRECTION

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

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.