FLD1000 AND FLD2000 SERIES FLOWMETER OPERATING INSTRUCTIONS FOR STAINLESS STEEL, BRASS AND PTFE MODELS

1. PRINCIPLE OF OPERATION

A tapered glass flow tube, and a metallic or PTFE float inside it, constitute the heart of model FLD variable area flow meter.

Flow meters are installed vertically in lines carrying gases or liquids to be monitored.

Fluids enter through the smaller opening at the bottom, and exit through the upper end. Upward pressure causes the float to rise. Flow takes place through the circular area between the float and the inside surface of the flow tube. As the float rises, the flow area increases, due to the tapered bore of the flow tube.

Dynamic equilibrium results when the buoyant force of the float and the upward force, due to fluid pressure, balance the weight of the float.

The vertical position of the float at equilibrium corresponds exclusively to one particular flow rate. This flow rate is obtained by determining the height of the float with the aid of the scale on the flow tube.

2. MATERIALS OF CONSTRUCTION

Flow Tubes: Heavy walled precision formed borosilicate glass
Tube Shields: Polycarbonate
Floats: 316 stainless steel, or PTFE
Wetted Parts: Brass, type 316 stainless steel or PTFE.
Seals: Viton® for brass and stainless models, PTFE for PTFE models.
Scales: Direct reading

Meters are designed with unique “revolving” scales of dual air-water direct reading graduations showing SCFM and SLPM for AIR, as well as GPM and LPM for WATER.Knurled scale endings accessible at the lower back portion of the meters enable rotation of the scale.

3. METER SPECIFICATIONS

Standard Accuracy: ± 5% FS
Repeatability: ± 0.25%
Max. Operating Pressure: 150 psig/10bars (brass or stainless models); or 100 psig/6.7 bars (PTFE models).
Max. Operating Temperature: 250ºF/121ºC (brass or stainless models); or 150 ºF/65ºC (PTFE models.

Fittings: 3/8”-18” NPT Female

All meters are factory tested for leakage prior to shipping. For hazardous fluids the flow meter must be re-tested at the time of installation in the system, prior to usage. It is also important that a leak integrity test is performed periodically to maintain safe operating conditions. Flow meters must be protected from breakage due to external conditions such as objects bumping into or hitting the instrument, extreme vibrations, or attack by corrosive materials. It is the responsibility of the customer to acquaint the operator(s) of this flow meter with all appropriate safety information.

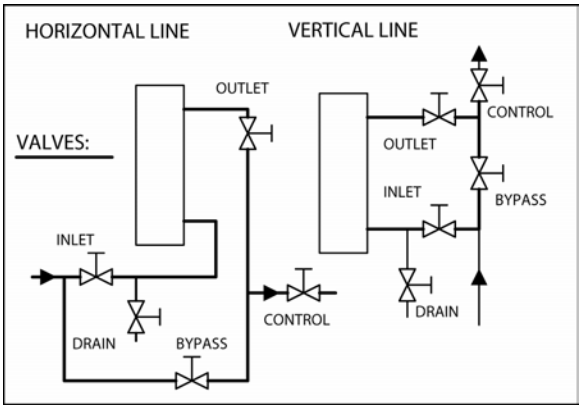
4. INSTALLATION AND OPERATION

4.1 Receipt of Equipment

Inspect instrument for possible visible damage resulting from shipping. Notify UPS or other carrier as well as Omega.

4.2 Installation

Flow meters must always be installed in vertical position; any significant deviation from vertical will affect readings.



⚠ Valves must be closed prior to installation and opened gradually after all connections are carefully inspected. A leak test is highly recommended especially when hazardous fluids are involved.

⚠ **CAUTION:** Excessive tightening of valves may damage the orifice.

It is important that **all lines to be connected to the flow meter are purged** of any dust or other

residual contamination prior to installing the meter. In some applications a filter should be installed at the inlet of the flow meter.

4.3 Operation

Flow meters are designed to be operated at pressures and temperatures not exceeding recommended maximum values (see above).

Close valve (if applicable) before initial use, then gradually pressurize the system.

Slowly open the valve until the float is at the desired flow rate. Each scale indicates the "reading line" on the float where the flow rate should be read.

5. FLOW TUBE INSTALLATION/REMOVAL

⚠ Do not remove the flow tube from the flow meter. Please contact Customer Service.

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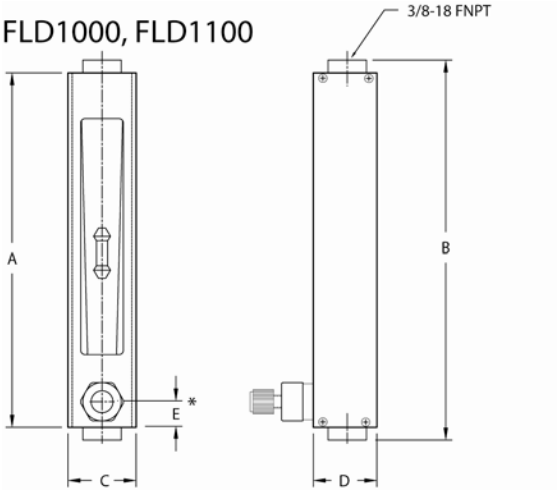
Under normal operating conditions no special maintenance is required. Dirt or contamination may create problems within the flow tube by causing a restriction in the flow passage. Such conditions can be diagnosed by examining the flow tube.

The most obvious indication of obstructions is the float being stuck in the flow tube. If the existence of contamination is determined the condition may be rectified in a number of ways. The easiest being (if possible), to disconnect the inlet and the outlet of the flow meter and purge the instrument by using a clean and dry stream of gas.

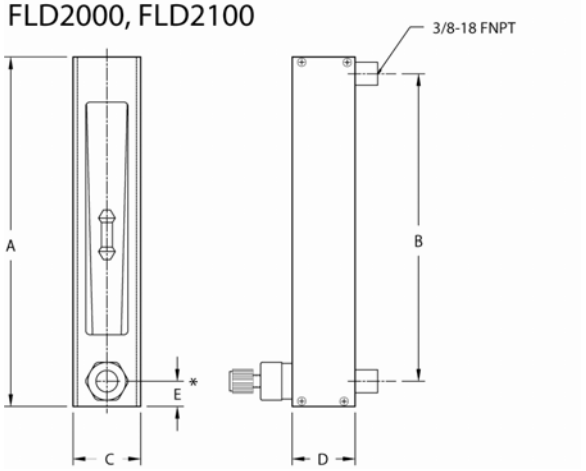
Action of the float within the bore of the flow tube very often facilitates particles or impediments to be dislodged through the outlet of the flow meter.

7. DIMENSIONAL DIAGRAMS

FLD1000, FLD1100



FLD2000, FLD2100



	INCHES				
MODEL	A	B	C	D	E
VERTICAL IN LINE					
FLD1000	10.375	11.125	2.000	1.875	0.750
FLD1000-NV	9.500	10.250	2.000	1.875	
FLD1200	10.375	11.125	2.000	1.875	0.750
FLD1200-NV	9.500	10.250	2.000	1.875	
PANEL MOUNT					
FLD2000	10.375	9.469	2.000	1.875	0.453
FLD2000-NV	10.375	9.469	2.000	1.875	
FLD2200	11.157	9.551	2.000	1.875	0.803
FLD2200-NV	11.157	9.551	2.000	1.875	

**-VALVE OPTIONAL*