

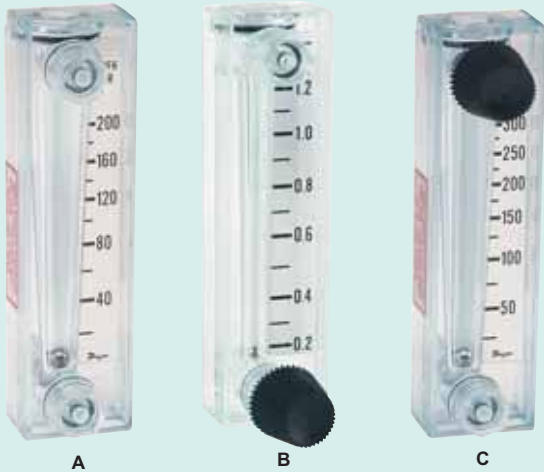


Series  
MM

# Mini-Master® Flowmeters

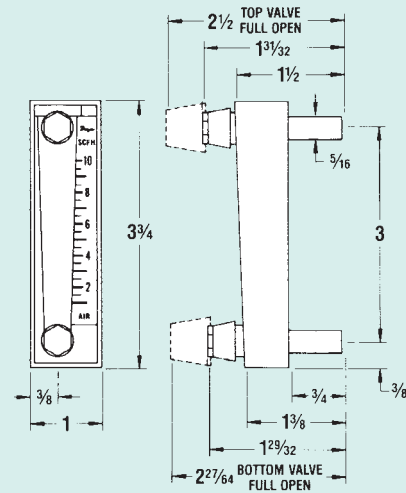
Used to Indicate or Manually Control Air or Water

Flow



A. Standard Model MMA  
B. Standard Model MMA with field configurable valve, bottom mount  
C. Standard Model MMA with field configurable valve, top mount

Patent No. 4,559,834

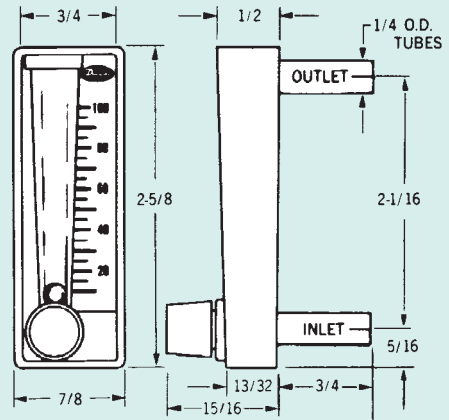


Model MMF-50-PV  
1-1/2" scale, with  
metering valve, knob.

Model MMF-10  
with 1-1/2" scale,  
no valve.

Model MMF-10-TMV with  
top-mounted valve-for  
vacuum service. Use  
screwdriver to adjust.

Patent No. 3,633,421



Offering advanced features at low cost, the Series MM flowmeters are ideal for a wide range of OEM and user applications in medical equipment, air samplers, gas analyzers, pollution monitors, chemical injectors, cabinet purging, etc.

The standard Model MMA flowmeter is suitable for both gas and liquid applications. It can be configured by the user with the parts provided to have non-removable top or bottom front mounted metering valves or no valve at all. The transparent nylon material provides high chemical resistance, low moisture absorption and is transparent to facilitate routine inspection. Using the assembly key provided, the flowmeter can be disassembled anytime for cleaning or reconfiguration. In OEM quantities, ultrasonically welded caps or interchangeable mold cores enable production of the MMA flowmeter with a low profile or flat front surface where no valve is required.

The MMA is practically unbreakable, mounts easily, and is easy to read. Two 5/16" O.D. mounting – connection tubes permit quick push-on connection of rubber or plastic tubing. A bottom clip for "stand up" mounting is also provided.

Despite its compactness, the MMA flowmeter features a 2" scale which combined with precision molding, enables highly repeatable readings to be made to within  $\pm 4\%$  accuracy.

Where a compact flowmeter is required to measure small volume air flows, the Model MMF is recommended. Easy to mount, they require a minimum of panel space. A white back on the flow tube makes the ball float easy to see. The 1-1/2" scale is highly visible and easy to read. Scale graduations are printed on aluminum alongside the flow tube (not on it), so the position of ball float is instantly visible.

The Model MMF's bezel type mounting is modern, attractive and quickly installed from the front of instrument panel. Two 1/4" O.D. mounting-connection tubes are integrally molded with flowmeter body. They can be back connected to flexible rubber or plastic tubing and held in place with two spring retainers which are furnished. If preferred, connections may be made to metal or rigid plastic tubing with a double compression fitting or nylon tube union such as Dwyer Part No. A-328.

Excellent repeatability and  $\pm 10\%$  accuracy make the MMF flowmeter an excellent value at its low cost.

# Model MMA

## SPECIFICATIONS

**Service:** Compatible gases and liquids.  
**Wetted Materials:** Body: Nylon 12.  
 O-rings: Buna-N (optional materials available).  
 Float: Black glass, K Monel, Stainless Steel, Tungsten Carbide.  
**Temperature Limit:** 130°F (54°C).  
**Pressure Limit:** 100 psi (6.9 bar) with compression fitting. 50 psi (3.4 bar) with tubing clamp.  
**Accuracy:** ±4% full scale.  
**Process Connection:** 5/16" O.D. for push on rubber or plastic tubing with provided spring tubing clamp. Connect to rigid tubing with double compression fitting.  
**Weight:** 1 oz (28.35 g).

**How To Order**  
 MMA-Range No.  
**Example:** MMA-4  
 Series MMA with .5-5 SCFH Air Range

| Model MMA Mini-Master® Ranges |           |               |           |                      |           |
|-------------------------------|-----------|---------------|-----------|----------------------|-----------|
| Range SCFH Air                | Range No. | Range LPM Air | Range No. | Range GPH Water      | Range No. |
| .5-2.5                        | 3         | .2-1.2        | 20        | .5-8                 | 30        |
| .5-5                          | 4         | .25-2.5       | 21        | 1-16                 | 31        |
| 1-10                          | 5         | .5-5          | 22        | 4-40                 | 32        |
| 2-20                          | 6         | 1-10          | 23        | 5-60                 | 33        |
| 5-50                          | 7         | 2.5-25        | 24        | <b>CC/Min. Water</b> |           |
| 10-100                        | 8         | 5-50          | 25        | 5-50                 | 35        |
| 20-200                        | 9         | 10-100        | 26        | 10-120               | 36        |
| 30-300                        | 10        | 15-150        | 27        | 20-200               | 37        |
|                               |           |               |           | 50-500               | 38        |
|                               |           |               |           | <b>LPM Water</b>     |           |
|                               |           |               |           | .1-1.1               | 40        |
|                               |           |               |           | .25-2.5              | 41        |
|                               |           |               |           | .3-3.5               | 42        |

**Model MMA**  
**A-327, 5/16" Union**



MMA tubing connections secured by clamp. "Standup" mounting clip shown.



Spring retainers on connection tubes secure panel mounted MMA. Compression union, P/N A-327 shown.

# Model MMF

## SPECIFICATIONS

**Service:** Compatible gases and liquids.  
**Wetted Materials:** Body: Styrene Acrylonitrile.  
 Float: Stainless steel, black glass, nylon.  
 Valve: Polyurethane.  
**Temperature Limit:** 125°F (51°C).  
**Pressure Limit:** 50 psi (3.4 bar). Valve Option: 10 psi (0.6 bar).  
**Accuracy:** ±10% full scale.  
**Process Connection:** 1/4" O.D. for push on rubber or plastic tubing. Connect to rigid tubing with compression fittings.  
**Weight:** 0.5 oz (14.17 g).

**How To Order**  
 MMF-Range No.-Valve  
**Example:** MMF-1-PV  
 Series MMF with .1-1 SCFH Air Range with Valve

| Model MMF Mini-Master® Ranges |           |
|-------------------------------|-----------|
| Range SCFH Air                | Range No. |
| .1-1                          | 1         |
| .2-2                          | 2         |
| 1-10                          | 10        |
| 5-50                          | 50        |
| 10-100                        | 100       |

**Model MMF-X, Standard MMF**  
**Model MMF-X-PV, MMF with bottom mount valve**  
**Model MMF-X-TMV, MMF with top mount valve**  
**A-328, 1/4" Union**



Model MMF mounts easily from front of panel. Drill two 9/32" or 5/16" dia. holes in panel on 2-1/16" centers. Insert mounting connector spuds. From rear, slide on the two spring retainers (furnished) and push on rubber or plastic tubing.



Model MMF connections. Connector at top, installed in panel, has retainer and flexible tubing in place. Connector at bottom shows alternative connection with metal or rigid plastic tubing, using a double compression nylon tube union (as Dwyer Part No. A-328).

FLOW