

## Features

**APPLICATIONS:** The Hersey Model MFMII® was designed for use as a combined fire and domestic service meter where one water line serves both fire and domestic, or process needs. Also as a master meter for an entire water system; for water system zones; automatic sprinkler systems and fire services; for domestic or process water systems where low pressure loss and dependable accuracy over a very wide flow range are essential. Hersey MFM II Water Meters will measure accurately at full pipe capacity, and have the highest flow capability available.

**CONSTRUCTION:** Hersey MFM II Water Meters consist of a mainline meter to measure high flow rates, a bypass meter to measure the lower flow rates, and a weight and lever valve (mainline valve) to automatically control the point at which the larger mainline meter registers. The valve is self-aligning and self-adjusting. The bypass includes a resilient seated isolation valve, a swing check valve, and depending upon the bypass meter, either a Hersey MCT II™ Compound Meter, Hersey Model MVR™ Meter or Hersey Horizon™ Meter. The mainline meter maincase is cast iron with epoxy coating inside and out.

The MFMII is designed with an unobstructed full flow that eliminates the need for an external strainer. An internal strainer protects each measuring element.

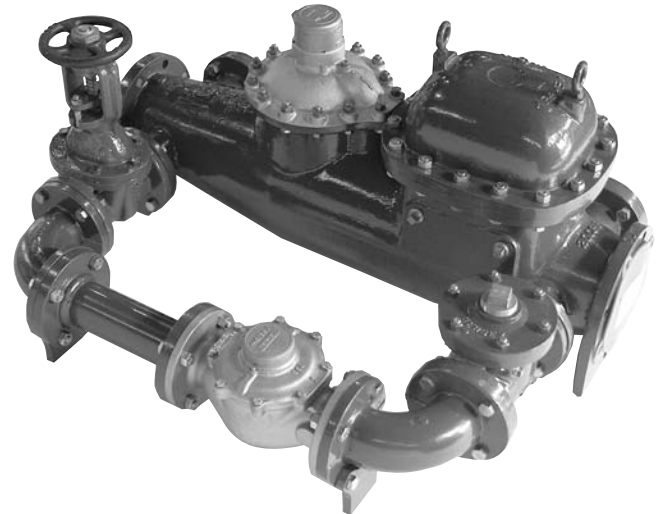
**REGISTERS:** Separate mainline and bypass registers are provided. Permanently sealed registers use proven magnetic drive design and the exclusive Hersey triple seal to provide clarity and error free meter reading. Internal gears in all assemblies are self-lubricating, molded plastic for long life and minimum friction. The standard registers include a straight reading, odometer-type, totalization display, a 360 degree test circle with center sweep hand, and a low flow indicator. The Calibrator Gear Train permits accuracy calibration on MFMII mainlines and MCTII bypasses. For accuracy calibration on MVR and Horizon bypasses, consult the appropriate meter sections. All Hersey models are available with electronic meter reading systems for increased meter reading efficiency. (See Automatic Meter Reading Equipment)

**OPERATION:** In normal operation, during low flow rates all water flows through the bypass section and is registered by a sensitive model MCT II compound, model MVR vertical turbine meter or a Hersey Horizon Meter (see separate data pages for description of these meters). When pressure loss through the bypass section approaches 4 psi, the mainline lever valve automatically opens permitting the torrent proportional mainline meter to measure flow. When flow rate decreases sufficiently, the mainline lever valve closes, and all lower flows are again measured by the bypass meter.

The exclusive automatic lever valve is controlled by a specially designed weight which locks the valve in the closed position until a predetermined pressure loss overcomes the weight and opens the valve. A venturi effect causes a precise portion of the total volume to pass through the torrent proportional mainline meter. The self-aligning rubber-faced valve clapper assures a positive seal for accurate bypass meter registration.

**MAINTENANCE:** The Hersey MFM II and bypass meters are designed and manufactured to provide long service life with low maintenance. All parts are accessible for in-line service if needed.

**CONNECTIONS:** ANSI class 125 flanges standard.



## Materials and Specifications

- **MODEL DESIGNATION** ..... MFM II
- **SIZES** ..... 3"\* , 4", 6", 8", 10", 12"
- **STANDARDS** ..... Manufactured and tested to meet or exceed all applicable parts of AWWA C703, FM approved mainline; UL listed, ULC classified.
- **INSTALLATION** ..... Horizontal only with 8x pipe diameter of straight pipe (same size as meter) on inlet side of meter.
- **OPERATING FLOW RANGE** ..... See Charts on pages 6.2 - 6.6
- **ACCURACY** ..... See Charts on pages 6.2 - 6.6
- **MAXIMUM WORKING PRESSURE** ..... 175 PSI
- **TEMPERATURE RANGE** ..... 33° F to 100° F water temperature
- **MEASURING ELEMENT**
  - Mainline ..... Torrent Wheel
  - Bypass: MCT II ..... Torrent Wheel and Nutating Disc
  - MVR ..... Rotor
  - Horizon ..... Rotor
- **REGISTER TYPE** ..... Permanently sealed, straight reading, magnetic drive with low flow indicator. Remote reading units optional.
- **METER CONNECTIONS** ..... ANSI class 125 standard end flanges.
- **MATERIALS** ..... Maincase - epoxy-coated cast iron; Bypass meter case - bronze UNSC84400; valve weight, swing arm and seats - bronze UNSC84400; Valve discs - elastomer; Casing bolts - steel.
- **OPTIONS** ..... AMR Reading Systems.

\* 3" size is MFM design, not MFM II.

Fire Line and Master Detector Meters  
 Sizes 3", 4", 6", 8", 10", 12"

## Meter Registration

Meter Size	Initial Dial*	Capacity	Initial Dial*	Capacity
3"	100 Gallons	100 Million	10 Cubic Feet	10 Million
4"	1000 Gallons	100 Million	100 Cubic Feet	10 Million
6"	1000 Gallons	1 Billion	100 Cubic Feet	100 Million
8"	1000 Gallons	1 Billion	100 Cubic Feet	100 Million
10"	1000 Gallons	1 Billion	100 Cubic Feet	100 Million
12"	1000 Gallons	1 Billion	100 Cubic Feet	100 Million

\*Registration equal to one full revolution of the sweep hand. Note: Mainline Meter Size is reflected in the chart above for MVR or MCTII bypass meters see appropriate sections.

Hersey Meters offers remote and AMR registers as options for new meters and retrofit applications. See Meter Reading Systems Section for more details. These options offer the utmost in remote reading

flexibility, allowing for diverse combinations of remote read systems, as well as the ability to upgrade or migrate from one system to another.

## Flow Characteristics

MFM II /Compound			
Meter Size	Typical Low Flow (95% Minimum)	Typical Operating Range (100% ± 3.0%)	Maximum Intermittent Flow
3"x2"x5/8"	1/4 GPM	2-600 GPM	750 GPM or full pipe capacity
4"x2"x5/8"	1/4 GPM	2-1000 GPM	1250 GPM or full pipe capacity
6"x3"x3/4"	1/2 GPM	4-2000 GPM	2600 GPM or full pipe capacity
8"x4"x1"	3/4 GPM	6-4000 GPM	5000 GPM or full pipe capacity
10"x6"x1-1/2"	1-1/2 GPM	10-6200 GPM	7750 GPM or full pipe capacity
12"x6"x1-1/2"	1-1/2 GPM	10-6400 GPM	8000 GPM or full pipe capacity

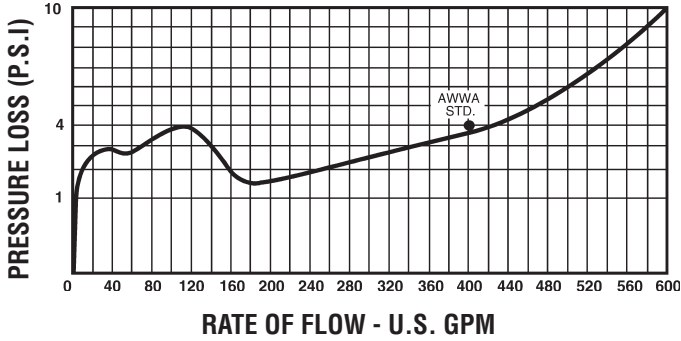
MFM II /Vertical Turbine			
Meter Size	Typical Low Flow (95% Minimum)	Typical Operating Range (100% ± 3.0%)	Maximum Intermittent Flow
3"x2"	1/4 GPM	3-600 GPM	750 GPM or full pipe capacity
4"x2"	1/4 GPM	3-1000 GPM	1250 GPM or full pipe capacity
6"x2"	2 GPM	3-2000 GPM	2600 GPM or full pipe capacity
6"x3"	2-1/2 GPM	4-2000 GPM	2600 GPM or full pipe capacity
8"x4"	3-1/2 GPM	5-4000 GPM	5000 GPM or full pipe capacity
10"x6"	5 GPM	15-6200 GPM	7750 GPM or full pipe capacity
12"x6"	5 GPM	15-6400 GPM	8000 GPM or full pipe capacity

MFM II /Horizontal Turbine			
Meter Size	Typical Low Flow (95% Minimum)	Typical Operating Range (100% ± 3.0%)	Maximum Intermittent Flow
4"x2"	2-1/2 GPM	4-1000 GPM	1250 GPM or full pipe capacity
6"x3"	3 GPM	6-2000 GPM	2600 GPM or full pipe capacity
8"x4"	4 GPM	8-4000 GPM	5000 GPM or full pipe capacity
10"x6"	9 GPM	15-6200 GPM	7750 GPM or full pipe capacity
12"x6"	9 GPM	15-6400 GPM	8000 GPM or full pipe capacity

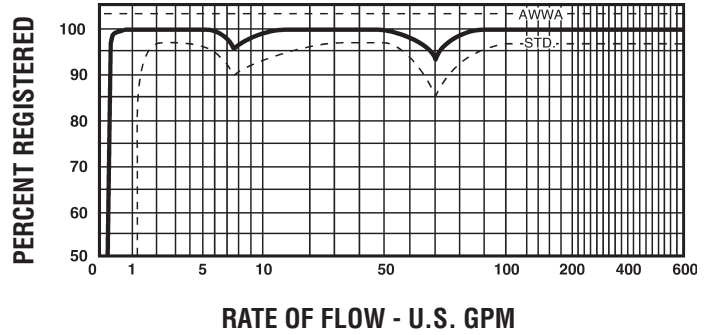
Model MFM II

## Performance\*

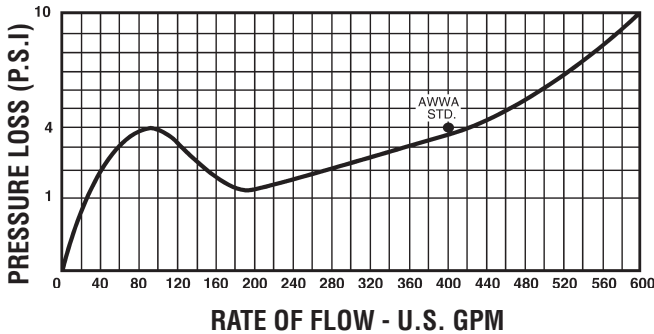
Head loss - 3" MFM II with 2" MCT II



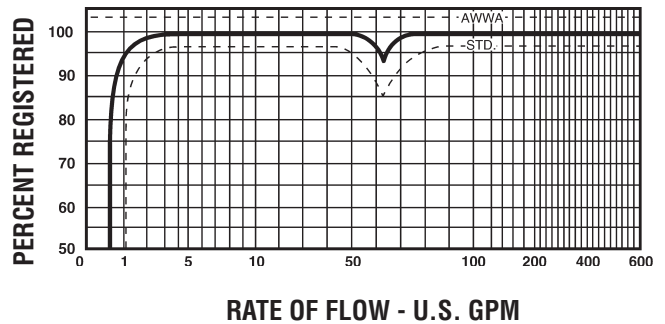
Accuracy - 3" MFM II with 2" MCT II



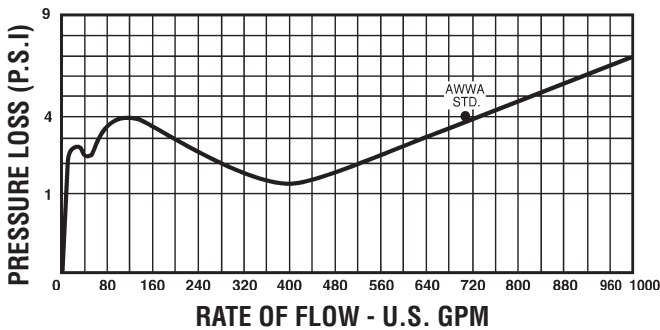
Head loss - 3" MFM II with 2" MVR



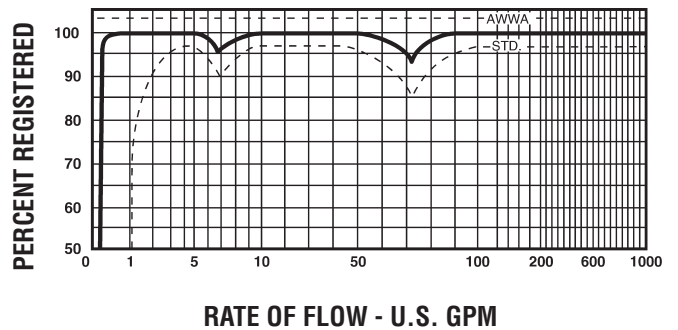
Accuracy - 3" MFM II with 2" MVR



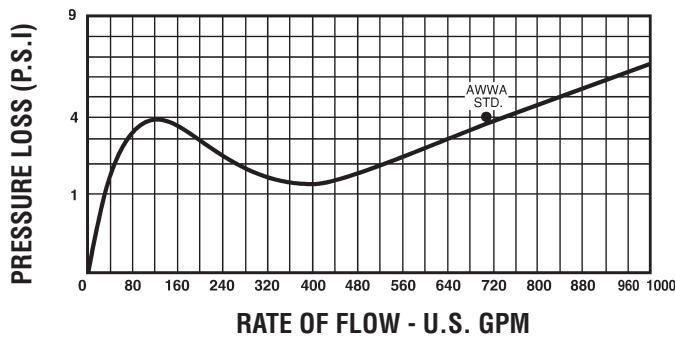
Head loss - 4" MFM II with 2" MCT II



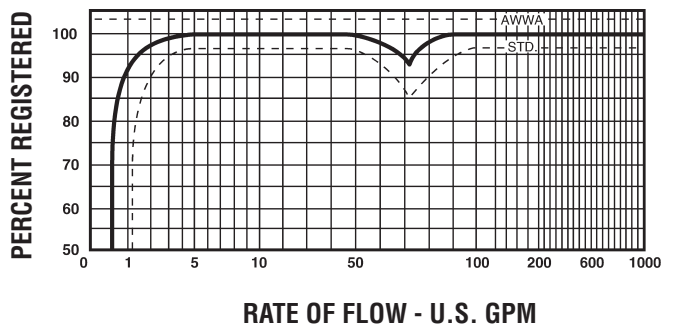
Accuracy - 4" MFM II with 2" MCT II



Head loss - 4" MFM II with 2" MVR



Accuracy - 4" MFM II with 2" MVR



Model MFM II

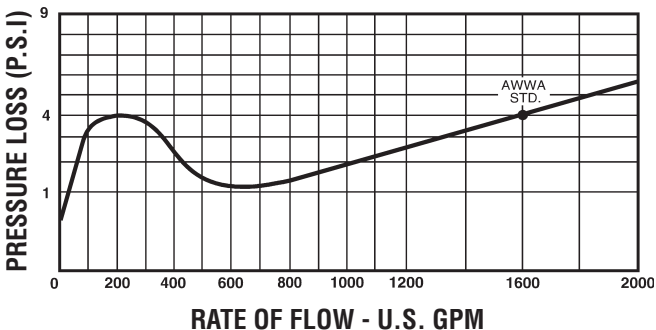
# Model MFM II™

Hersey® Meters

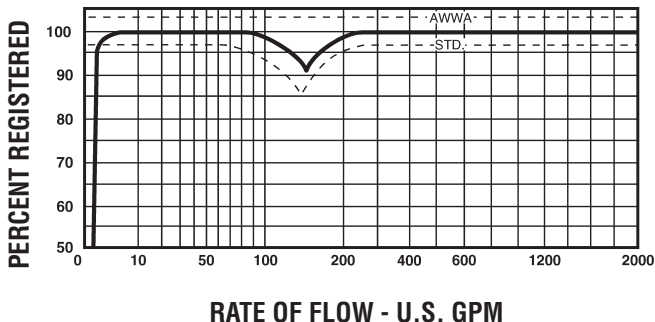
Fire Line and Master Detector Meters  
 Sizes 3", 4", 6", 8", 10", 12"

## Performance\*

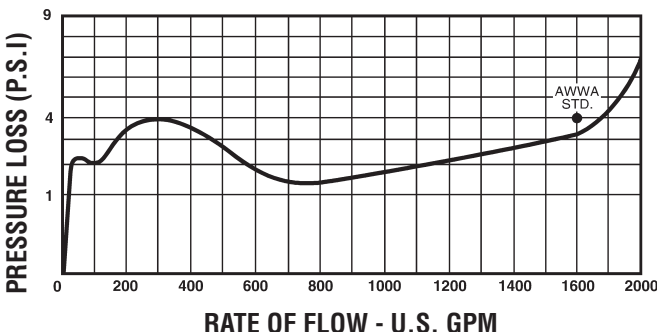
Head loss - 6" MFM II with 2" MVR



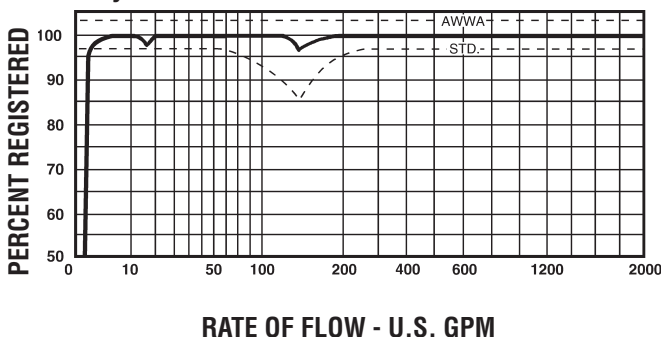
Accuracy - 6" MFM II with 2" MVR



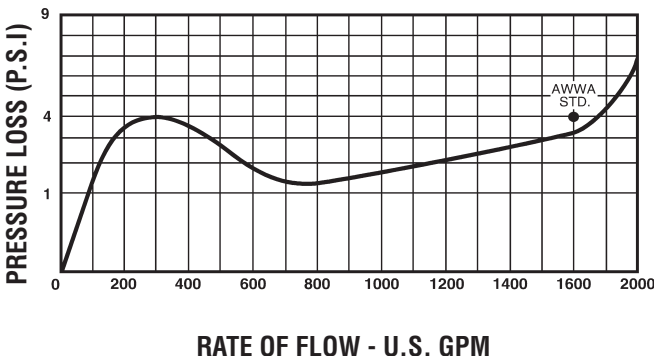
Head loss - 6" MFM II with 3" MCT II



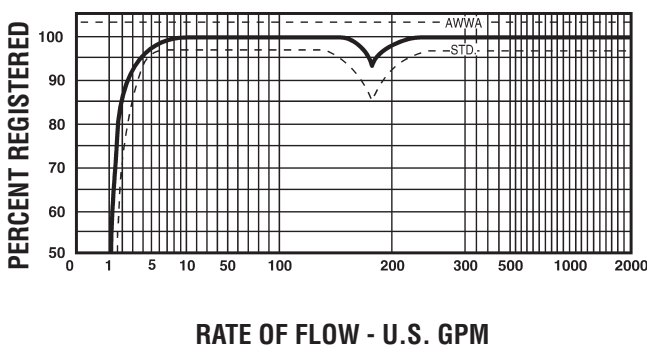
Accuracy - 6" MFM II with 3" MCT II



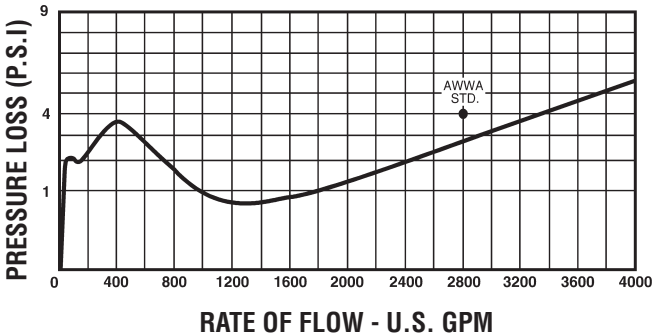
Head loss - 6" MFM II with 3" MVR



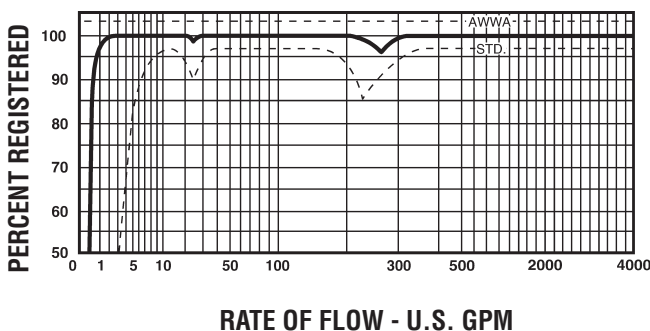
Accuracy - 6" MFM II with 3" MVR



Head loss - 8" MFM II with 4" MCT II



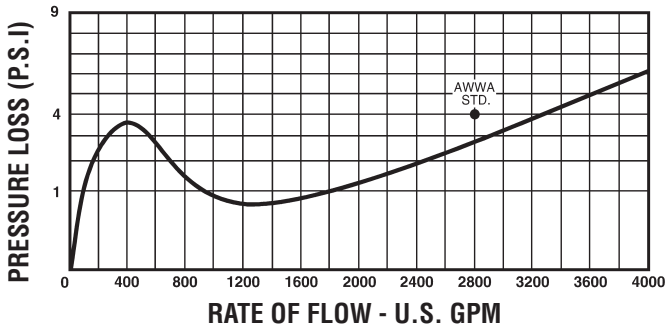
Accuracy - 8" MFM II with 4" MCT II



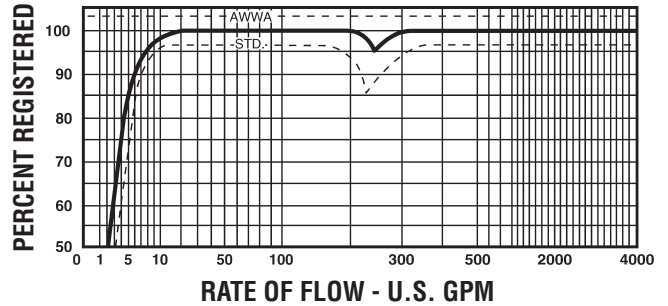
Model MFM II

## Performance\*

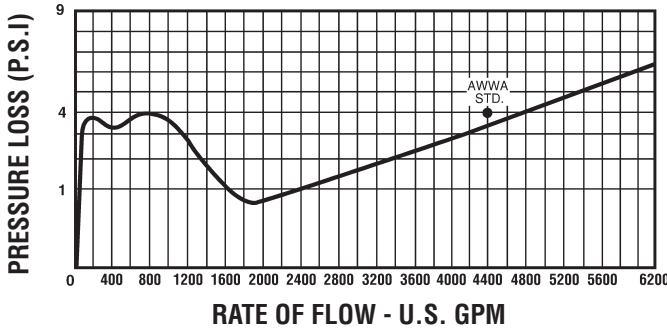
Head loss - 8" MFM II with 4" MVR



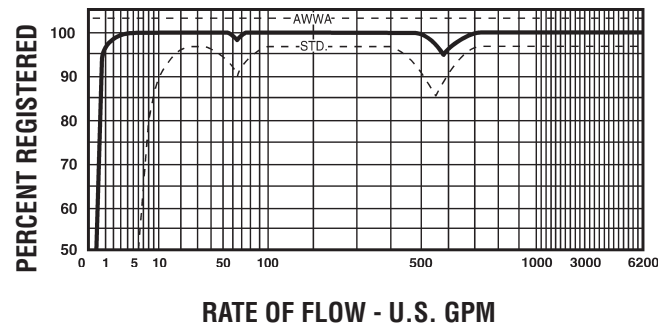
Accuracy - 8" MFM II with 4" MVR



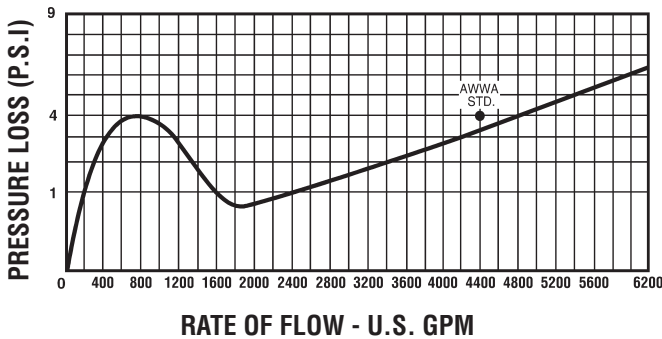
Head loss - 10" MFM II with 6" MCT II



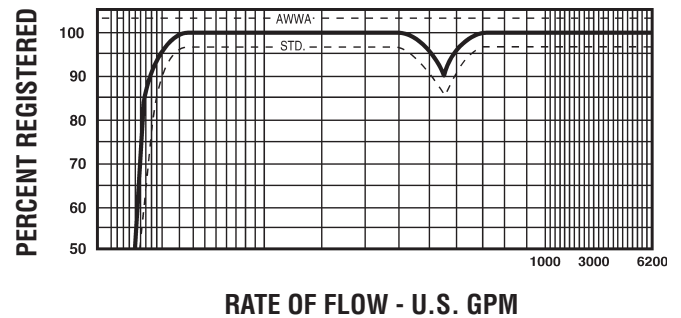
Accuracy - 10" MFM II with 6" MCT II



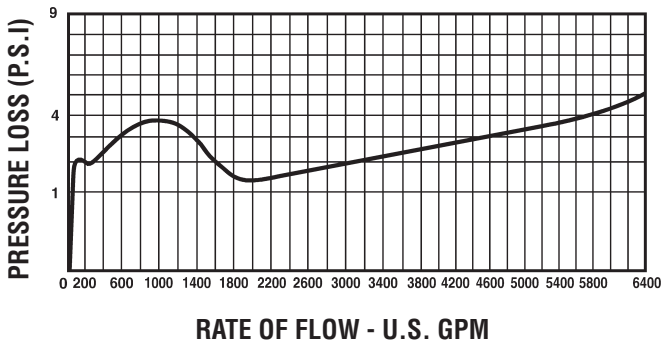
Head loss - 10" MFM II with 6" MVR



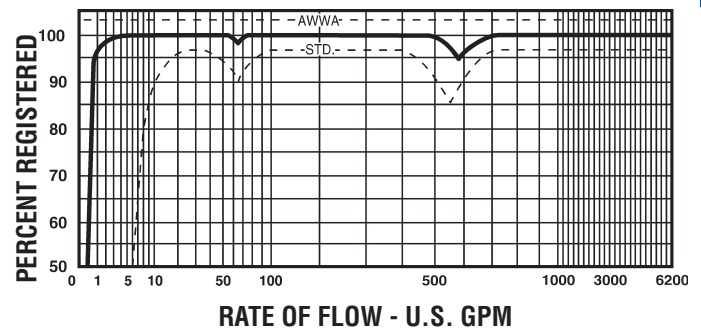
Accuracy - 10" MFM II with 6" MVR



Head loss - 12" MFM II with 6" MCT II



Accuracy - 12" MFM II with 6" MCT II



\*Performance curves are typical only and not a guarantee of performance.

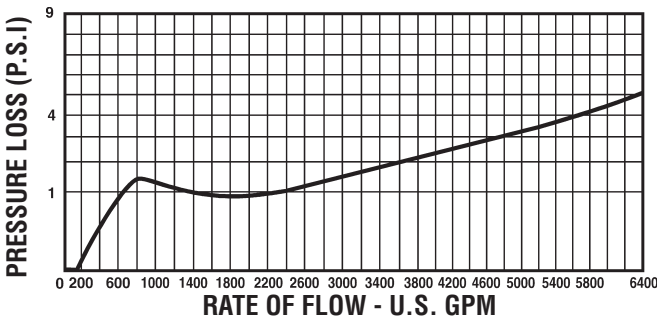
# Model MFM II™

Hersey® Meters

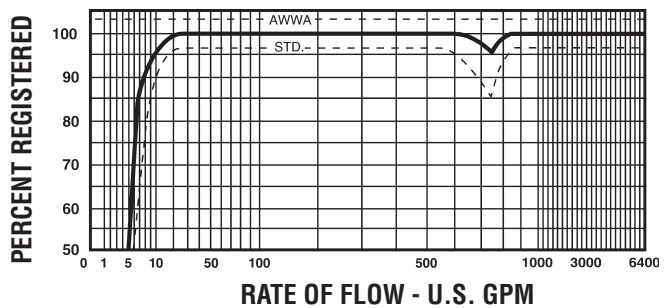
Fire Line and Master Detector Meters  
 Sizes 3", 4", 6", 8", 10", 12"

## Performance\*

Head loss - 12" MFM II with 6" MVR

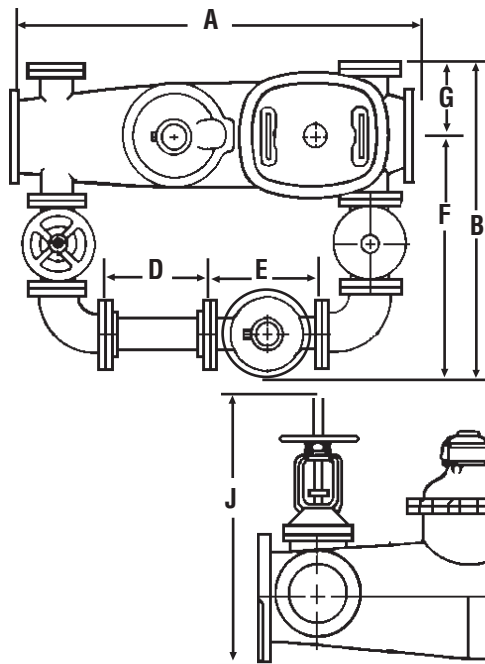


Accuracy - 12" MFM II with 6" MVR

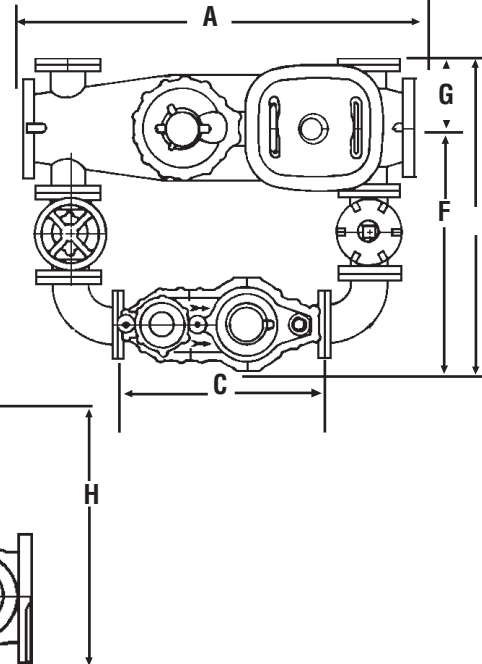


## Dimensions & Weights

Model MFM II with Vertical Turbine Bypass



Model MFM II with MCT II Compound Bypass



Compressed Size	3" x 2"	4" x 2"	6" x 2"	6" x 3"	8" x 4"	10" x 6"	12" x 6"
A	33"	33"	45"	45"	53"	68"	68"
B-MCT II	28.5"	29"	N/A	37"	43-1/4"	55-1/2"	55-1/2"
B-Vertical Turbine	27"	28"	34-1/2"	35"	41-3/4"	53-1/4"	53-1/4"
C-MCT II	17"	17"	N/A	24"	29"	36-1/2"	36-1/2"
D-Vertical Turbine Spool	7"	7"	N/A	12"	15"	18-1/2"	18-1/2"
E-Vertical Turbine	10"	10"	10"	12"	14"	18"	18"
F-MCT II	21"	21-7/4"	N/A	28-1/2"	32-7/8"	42"	42"
F-Vertical Turbine	20-1/2"	20-3/4"	26	26-1/2"	32-7/8"	39-3/4"	39-3/4"
G	6-1/5"	7-1/4"	8-1/2"	8-1/2"	10-3/8"	13-1/2"	13-1/2"
H	15-1/2"	17-1/2"	23-1/2"	23-1/2"	30-1/2"	36-1/2"	40"
J Open	18"	19"	N/A	25	31-1/2"	41"	43"
Net wt. with MCT II	453	500	970	994	1854	3250	3400
Net wt. with Vertical Turbine	360	433	1030	878	1602	2860	2925