BASIC HYDROMETER

Model IR-900-ME-3W-RXZ

The BERMAD Hydrometer with manual selector combines a Woltman-type turbine water meter and a hydraulically operated, diaphragm-actuated control valve. It functions as both a flow meter and main valve, opening or shutting in response to local or remote hydraulic command. The Hydrometer features a magnetically coupled, vacuum-sealed electronic register for precise volume and flow measurement, and includes a pulse output for enhanced monitoring and control.

[1] BERMAD Model IR-900-ME-3W-RXZ measures flow.
[2] Combination Air Valve Model C30
[3] Pressure Reducing Valve Model IR-120-50-3W-XZ
[4] Combination Air Valve Model C10
[5] Smart Irrigation Controller-OMEGA

Features & Benefits

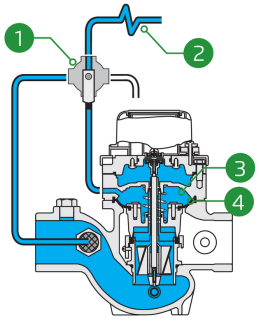
- Integrated "All-in-One" Control Valve & Flow Meter
  - Saves space, cost and maintenance
- Hydraulically Controlled Hydrometer
  - Line pressure driven
- Magnetic Drive with BERMAD Universal E-Register
  - Support metric & imperial units of measurement
  - Instant flow rate display
  - Forward and reverse flow indication
  - Data logging capabilities
  - Fast pulse output rate
- Internal Inlet & Outlet Flow Straighteners
  - Saves on straightening distances
  - Maintains accuracy
- User-Friendly Design
  - Simple In-Line Inspection and Service

Typical Applications

- Automated Irrigation Systems
- Distribution Centers
- Remote Flow Data Read-Out
- Flow Monitoring & Leakage Control
- Water Treatment Systems
- Volumetric Irrigation Systems

Operation:

When the Manual Selector [1] is set to AUTO, a remote hydraulic command [2] regulates the pressure in the Control Chamber [3]. Increasing the remote command pressure, or switching the Manual Selector to CLOSE, generates a superior closing force, moving the Diaphragm Assembly [4] to the closed position. Releasing pressure from the Control Chamber, either via the remote command or by switching the Manual Selector to OPEN, allows the line pressure beneath the Diaphragm Assembly to open the Hydrometer and measure the flow.



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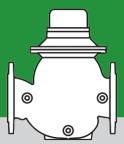


Technical Data

Pressure Rating:
250 psi

Operating Pressure Range:
7-250 psi

Materials

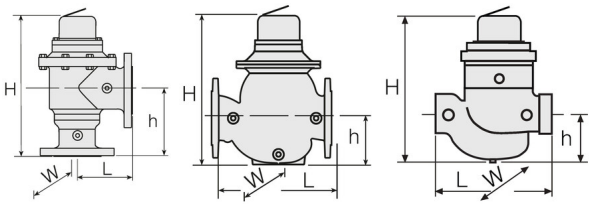
Body & Cover: Ductile Iron
Diaphragm: NR, Nylon fabric reinforced
Seals: NR, Nylon fabric reinforced
Spring: Stainless Steel
Internals: Stainless Steel & Plastic Reinforced Nylon
Impeller: Polypropylene
Pivots and Bearings: Polypropylene
**Other materials are available on request*

Control Loop Accessories

Tubing and Fittings:
Reinforced Nylon and Brass

Technical Specifications

For other patterns and end connection types,
Please refer to BERMAD full engineering page.



Size	Pattern	End Connection	Weight (Lb)	L (In)	H (In)	h (In)	W	CCDV (Gal)	CV
1½" ; DN40	Globe	Threaded	15.9	9⅞	10⅝	3¾	5⅝	0.04	47
2" ; DN50	Globe	Threaded	16.1	9⅞	10⅞	3¾	5⅝	0.04	53
2" ; DN50	Angle 90°	Threaded	17.8	4¾	13⅞	6⅛	5⅝	0.04	59
3"R ; DN80R	Globe	Threaded	16.1	9⅞	10⅞	3⅛	5⅝	0.04	58
3"R ; DN80R	Globe	Flanged	35.3	12¼	11¾	4	7⅞	0.04	58
3" ; DN80	Globe	Flanged	50.7	11⅞	15	4⅞	8¼	0.13	133
3" ; DN80	Angle 90°	Flanged	56.9	6	15⅞	7¾	8¼	0.13	146
4" ; DN100	Globe	Flanged	68.3	13¾	17⅝	5⅜	9⅞	0.26	170
4" ; DN100	Angle 90°	Flanged	79.6	7⅛	19	8⅞	9⅞	0.26	208
6" ; DN150	Globe	Flanged	156.5	19¾	23¾	8½	15	1	497
6" ; DN150	Angle 90°	Flanged	169.1	9⅞	23	12	15	1	547
8" ; DN200	Globe	Flanged	205	23⅝	24⅜	9	15	1	636
8" ; DN200	Angle 90°	Flanged	181.8	9⅞	23	11	15	1	699
10" ; DN250	Globe	Flanged	310	23⅝	24⅜	9	16	1	636

CCDV = Control Chamber Displacement Volume • Threaded = BSP & NPT are available.
• Extra length for male Threaded: 1½" Globe= 2.6 (Inch) ; 2" Globe & Angle= 3 (Inch)

Flow Properties

Size Q @ (gpm)	Accuracy	DN40 1½"	DN50 2"	DN80R 3"R	DN80 3"	DN100 4"	DN150 6"	DN200 8"	DN250 10"
Q1 Minimum Flow	±5%	3.5	3.5	5.3	5.3	7.9	17.6	27.7	27.7
Q2 Transitional Flow	±2%	5.7	5.7	13.2	13.2	19.8	44	69.6	69.6
Q3 Permanent Flow	±2%	110	176	440	440	704	1100	1761	1761
Q4 Maximum Flow (Short Time)	±2%	136	220	550	550	880	1378	2201	2201

**ISO 4604*

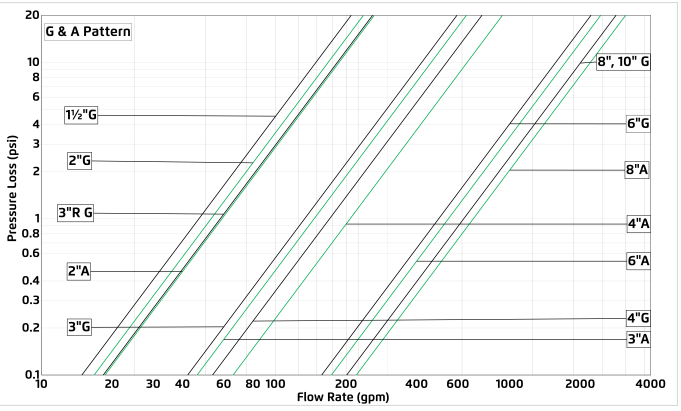
Pulse Option

Register Type	Electronic			
Size	One pulse per			
	1 Gal	10 Gal	100 Gal	1000 Gal
1½"-4" ; DN40-100	✓	✓	✓	
6"-10" ; DN150-250		✓	✓	✓

- *1 Gallon pulse suitable for flows up to 790 gpm.*

Flow Chart

2-Way circuit "Added Head Loss" (for "V" below 6.5 f/s): 4.5 psi



Differential Pressure & Flow Calculation

$$\Delta P = \left(\frac{Q}{Cv}\right)^2$$

Cv = gpm @ ΔP of 1 psi
Q = gpm
ΔP = psi