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

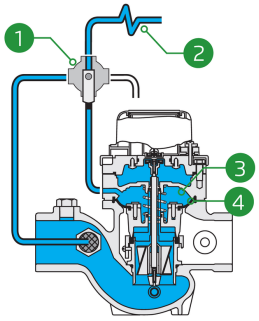
- Integrated "All-in-One" Control Valve & Flow Meter
  - Saves space, cost and maintenance
- Hydraulically Controlled Hydrometer
  - Line pressure driven
- Magnetic Drive with BERMAD Universal E-Register
  - Support metric & imperial units of measurement
  - Instant flow rate display
  - Forward and 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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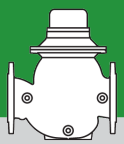


Technical Data

Pressure Rating:
16 bar

Operating Pressure Range:
0.5-16 bar

Materials

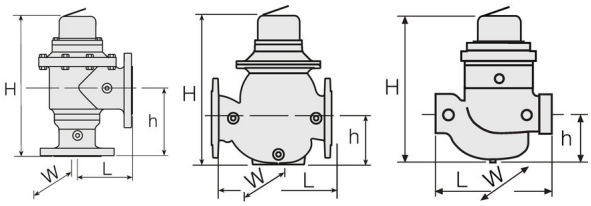
Body & Cover: Ductile Iron
Diaphragm: NR, Nylon fabric reinforced
Seals: NR, Nylon fabric reinforced
Spring: Stainless Steel
Internals: Stainless Steel & Plastic Reinforced Nylon
Impeller: Polypropylene
Pivots and Bearings: Polypropylene
**Other materials are available on request*

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 (Kg)	L (mm)	H (mm)	h (mm)	W	CCDV (Lit)	KV
1½" ; DN40	Globe	Threaded	7.2	250	270	95	143	0.16	41
2" ; DN50	Globe	Threaded	7.3	250	277	95	143	0.16	46
2" ; DN50	Angle 90°	Threaded	8.1	120	353	155	143	0.16	51
3"R ; DN80R	Globe	Threaded	7.3	250	277	79	143	0.16	50
3"R ; DN80R	Globe	Flanged	16	310	298	100	200	0.16	50
3" ; DN80	Globe	Flanged	23	300	382	123	210	0.49	115
3" ; DN80	Angle 90°	Flanged	25.8	150	402	196	210	0.49	126
4" ; DN100	Globe	Flanged	31	350	447	137	250	1	147
4" ; DN100	Angle 90°	Flanged	36.1	180	481	225	250	1	180
6" ; DN150	Globe	Flanged	71	500	602	216	380	3.8	430
6" ; DN150	Angle 90°	Flanged	76.7	250	585	306	380	3.8	473
8" ; DN200	Globe	Flanged	93	600	617	228	380	3.8	550
8" ; DN200	Angle 90°	Flanged	82.5	250	585	280	380	3.8	605
10" ; DN250	Globe	Flanged	140.5	600	617	228	405	3.8	550

CCDV = Control Chamber Displacement Volume • Threaded = BSP & NPT are available.
• Extra length for male Threaded: 1½" Globe= 67(mm) ; 2" Globe & Angle= 77(mm)

Flow Properties

Size Q @ (m³/h)	Accuracy	DN40 1½"	DN50 2"	DN80R 3"R	DN80 3"	DN100 4"	DN150 6"	DN200 8"	DN250 10"
Q1 Minimum Flow	±5%	0.8	0.8	1.2	1.2	1.8	4	6.3	6.3
Q2 Transitional Flow	±2%	1.3	1.3	3	3	4.5	10	15.8	15.8
Q3 Permanent Flow	±2%	25	40	100	100	160	250	400	400
Q4 Maximum Flow (Short Time)	±2%	31	50	125	125	200	313	500	500

**ISO 4604*

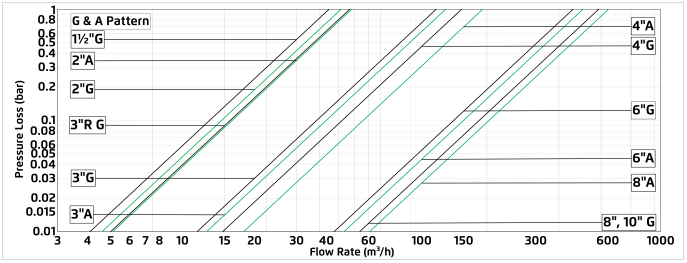
Pulse Option

Register Type	Electronic			
Size	One pulse per			
	10L	100L	1m³	10m³
1½"-4" ; DN40-100	✓	✓	✓	
6"-10" ; DN150-250		✓	✓	✓

- *10L pulse suitable for flows up to 180 m³/h.*

Flow Chart

2-Way circuit "Added Head Loss" (for "V" below 2 m/s): 0.3 bar



Differential Pressure & Flow Calculation

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

Kv = m³/h @ ΔP of 1 bar
Q = m³/h
ΔP = bar