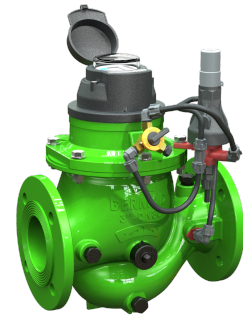


PRESSURE SUSTAINING HYDROMETER

Model IR-930-M0-3W-KXZ

The BERMAD pressure sustaining Hydrometer with manual selector combines a Woltman-type turbine water meter with a hydraulically operated, diaphragm-actuated control valve. Functioning as both a mainline flow meter and a pressure sustaining valve, it sustains a preset minimum upstream pressure (P1) or opens fully when P1 exceeds setpoint. The Hydrometer features a vacuum-sealed register for precise volume measurement. An optional pulse output is available to further enhance system capabilities.



- [1] BERMAD Model IR-930-M0-3W-KXZ sustains supply system pressure, prevents system emptying and measures flow.
- [2] Combination Air Valve Model C30
- [3] Quick Pressure Relief Valve Model IR-13Q-2W
- [4] Pressure Reducing Valve (Top Pilot) Model IR-12T-55-3W-X
- [5] Kinetic Air Valve Model K10
- [6] Smart Irrigation Controller-OMEGA

Features & Benefits

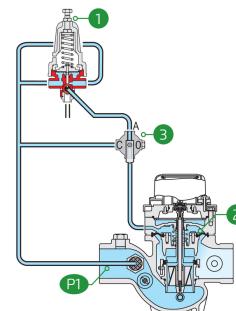
- Integrated "All-in-One" Control Valve & Flow Meter
 - Saves space, cost and maintenance
- Hydraulic Pressure Control
 - Line pressure driven
 - Prioritizes pressure zones
 - Controls system fill-up
 - Opens fully upon line pressure rise
- Magnetic Drive with Vacuum-Sealed Register
 - Water-free gear train mechanism
 - Reed-switch tension free pulse output
 - Various pulse combinations
- Internal Inlet & Outlet Flow Straighteners
 - Saves on straightening distances
 - Maintains accuracy
- Integrated Flow Metering Calibration Device
 - Precise measurement
- User-Friendly Design
 - Easy pressure setting
 - Simple in-line inspection and service

Typical Applications

- Remote Flow Data Read-Out
- Flow Monitoring & Leakage Control
- Line Fill-Up Control Solutions
- Line Emptying Prevention
- Systems Subject to Varying Supply Pressure
- Infield Filters Backwash Pressure Sustaining

Operation:

The Pressure Sustaining Pilot (PSP) [1] hydraulically connects to the Hydrometer Control Chamber [2] through the Manual Selector [3]. When Manual Selector is set to AUTO, the PSP throttles the Hydrometer closed if upstream pressure [P1] drops below setpoint and to open fully when P1 exceeds the setpoint. Switching the Manual Selector to CLOSE shuts the Hydrometer.





Technical Data

Pressure Rating:

150 psi

Operating Pressure Range:

7-150 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

PS Pilot: PC-SHARP-X-P

Spring	Spring Color	Setting range
J	Green	3-25 bar
K	Gray	7-43 bar
N	Natural	12-95 psi
V	Blue & White	15-150 bar

Standard spring - marked in bold

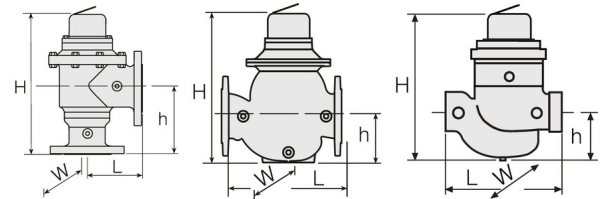
Tubing and Fittings:

Polyethylene and Polypropylene

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	9¾	10¾	3¾	5¾	0.04	47
2" ; DN50	Globe	Threaded	16.1	9¾	10¾	3¾	5¾	0.04	53
2" ; DN50	Angle 90°	Threaded	17.8	4¾	13¾	6¾	5¾	0.04	59
3"R ; DN80R	Globe	Threaded	16.1	9¾	10¾	3¾	5¾	0.04	58
3"R ; DN80R	Globe	Flanged	35.3	12¾	11¾	4	7¾	0.04	58
3" ; DN80	Globe	Flanged	50.7	11¾	15	4¾	8¾	0.13	133
3" ; DN80	Angle 90°	Flanged	56.9	6	15¾	7¾	8¾	0.13	146
4" ; DN100	Globe	Flanged	68.3	13¾	17¾	5¾	9¾	0.26	170
4" ; DN100	Angle 90°	Flanged	79.6	7¾	19	8¾	9¾	0.26	208

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	Accuracy	DN40	DN50	DN80R	DN80	DN100
Q @ (gpm)		1½"	2"	3"R	3"	4"
Q1 Minimum Flow	±5%	3.5	3.5	5.3	5.3	7.9
Q2 Transitional Flow	±2%	5.7	5.7	13.2	13.2	19.8
Q3 Permanent Flow	±2%	110	176	440	440	704
Q4 Maximum Flow (Short Time)	±2%	136	220	550	550	880

*ISO 4604

Pulse Option

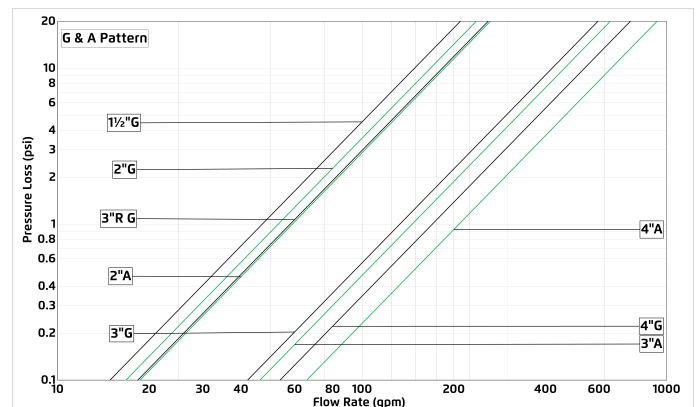
Register Type	Electronic			
Size	One pulse per			
	1 Gal	10 Gal	100 Gal	1000 Gal
1½"-4" ; DN40-100	✓	✓	✓	

- 1 Gallon pulse (only available with electronic register) suitable for flows up to 790 gpm.
- Two parallel pulses are transmitted. other pulse rates are available on request.

Additional Features

Code	Description
ME	Electronic register (upgrade kit is available)

Flow Chart



Differential Pressure & Flow Calculation

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

Cv = gpm @ ΔP of 1 psi

Q = gpm

ΔP = psi