

PRESSURE SUSTAINING HYDROMETER

Model IR-930-ME-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 an electronic register for precise volume and flow measurement and a pulse output for enhanced monitoring and control applications.



- [1] BERMAD Model IR-930-ME-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

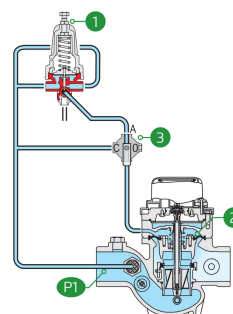
- Integrated "All-in-One" Control Valve & Flow Meter
 - Saves space, cost and maintenance
- Hydraulic Pressure Control
 - Line pressure driven
 - Prioritizes pressure zones
 - Controls system fill-up
- Magnetic Drive with Vacuum-Sealed Register
 - Support metric & imperial units of measurement
 - Instant 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
 - 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:

10 bar

Operating Pressure Range:

0.5-10 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

PS Pilot: PC-SHARP-X-P

Spring	Spring Color	Setting range
J	Green	0.2-1.7 bar
K	Gray	0.5-3.0 bar
N	Natural	0.8-6.5 bar
V	Blue & White	1.0-10.0 bar

Standard spring - marked in bold

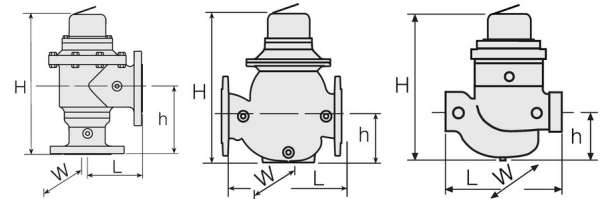
Tubing and Fittings:

Polyethylene and Polypropylene

Technical Specifications

For other patterns and end connection types,

Please refer to [BERMAD](#) full engineering page.



Size	Pattern	End Connection	Weight (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

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	Accuracy	DN40	DN50	DN80R	DN80	DN100
Q @ (m³/h)		1½"	2"	3"R	3"	4"
Q1 Minimum Flow	±5%	0.8	0.8	1.2	1.2	1.8
Q2 Transitional Flow	±2%	1.3	1.3	3	3	4.5
Q3 Permanent Flow	±2%	25	40	100	100	160
Q4 Maximum Flow (Short Time)	±2%	31	50	125	125	200

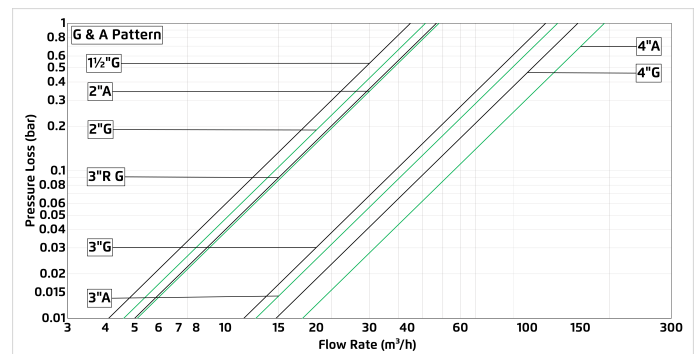
*ISO 4604

Pulse Option

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

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

Flow Chart



Differential Pressure & Flow Calculation

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

$K_v = m^3/h \text{ @ } \Delta P \text{ of 1 bar}$
 $Q = m^3/h$
 $\Delta P = \text{bar}$