

PRESSURE REDUCING HYDROMETER

Model IR-920-ME-3W-KXZ5

The BERMAD pressure reducing Hydrometer with manual selector combines a Woltman-type turbine water meter and a hydraulically operated, diaphragm-actuated control valve. It functions as both a mainline flow meter and a pressure-reducing valve, reducing a higher upstream pressure to a constant downstream pressure and opening fully if line pressure drops below the setting. 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-920-ME-3W-KXZ establishes reduced pressure zone, protecting laterals and distribution line.

Features & Benefits

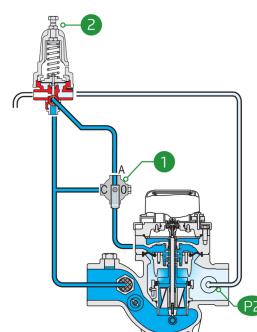
- Integrated "All-in-One" Control Valve & Flow Meter
 - Saves space, cost and maintenance
- Hydraulic Pressure Control
 - Line pressure driven
 - Protects downstream systems
 - Opens fully upon line pressure drop
- Magnetic Drive with BERMAD Universal E-Register
 - Support metric & imperial units of 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
 - Easy pressure setting
 - Simple in-line inspection and service

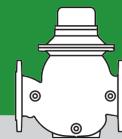
Typical Applications

- Remote Flow Data Read-Out
- Flow Monitoring & Leakage Control
- Pressure Reducing Systems
- Systems Subject to Varying Supply Pressure
- Volumetric Irrigation Systems

Operation:

When the Manual Selector [1] is set to AUTO, the Hydrometer opens, and the Pressure Reducing Pilot (PRP) [2] regulates flow by commanding the Hydrometer to throttle closed if Downstream Pressure [P2] rise above pilot setting and to open fully when it drops below setting. Switching the selector to CLOSE shuts the Hydrometer completely.





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

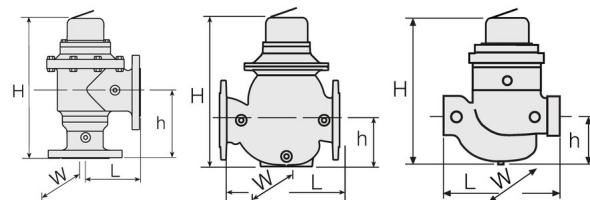
Other materials are available on request*Control Loop Accessories****PR Pilot:** PC-SHARP-X-P

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 Q @ (m³/h)	Accuracy	DN40 1½"	DN50 2"	DN80R 3"R	DN80 3"	DN100 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

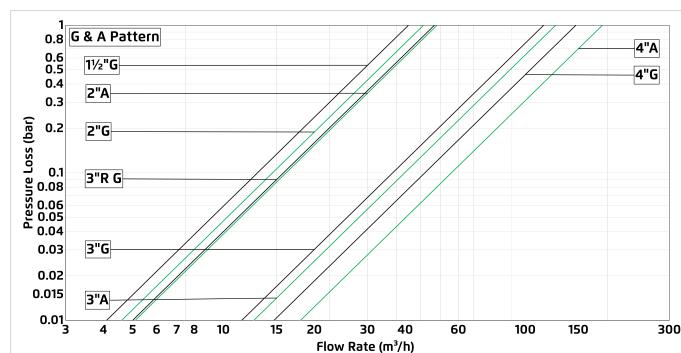
*ISO 4604

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

$$\Delta P = \left(\frac{Q}{Kv} \right)^2 \quad Kv = m^3/h @ \Delta P \text{ of 1 bar}$$

$$Q = m^3/h \quad \Delta P = \text{bar}$$

