

SOLENOID CONTROLLED HYDROMETER

Model IR-910-ME-LS-3W-KX

The BERMAD Hydrometer with solenoid control combines a turbine Woltman-type water meter and a hydraulically operated, diaphragm-actuated control valve. It functions as both a mainline flow meter and a solenoid-operated valve, opening and closing in response to an electric command from a control system. 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 IR-910-ME-3W-KX On/Off solenoid controlled hydrometer with pulse output for flow & volume
- [2] Smart Irrigation Controller-OMEGA
- [3] Combination Air Valve Model IR-C10
- [4] Kinetic Air Valve Model IR-K10

Features & Benefits

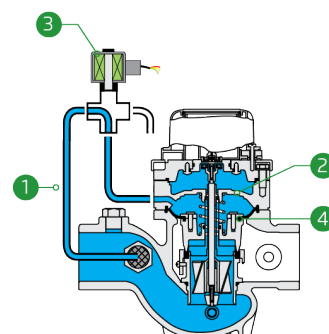
- Integrated "All-in-One" Control Valve & Flow Meter
 - Saves space, cost and maintenance
- Hydraulic Hydrometer with Solenoid Control
 - Line pressure driven
 - Electrically controlled On/Off
 - Suitable also for remote and/or elevated systems
- Magnetic Drive with BERMAD Universal E-Register
 - Support 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

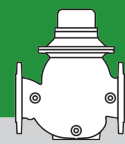
Typical Applications

- Automated Irrigation Systems
- Remote Systems
- Remote Flow Data Read-Out
- Flow Monitoring & Leakage Control

Operation:

Line pressure [1] is applied to the Control Chamber [2] through the 3-Way Normally Open Solenoid [3], generating a hydraulic force that moves the Diaphragm Assembly [4] to the closed position. When the solenoid is electrically activated, it switches to release pressure from the control chamber, allowing the Hydrometer to open and measure flow. The solenoid also features a manual override for opening and closing.





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

Tubing and Fittings:
Polyethylene and Polypropylene

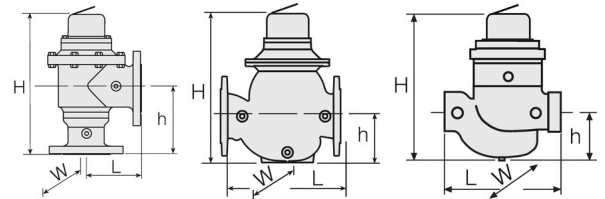
**For other solenoids please consult [BERMAD](#)*

AC solenoid:
S-390-T-3W

DC latch solenoid:
S-392-T-3W P.B
S-982-3W P.B.

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

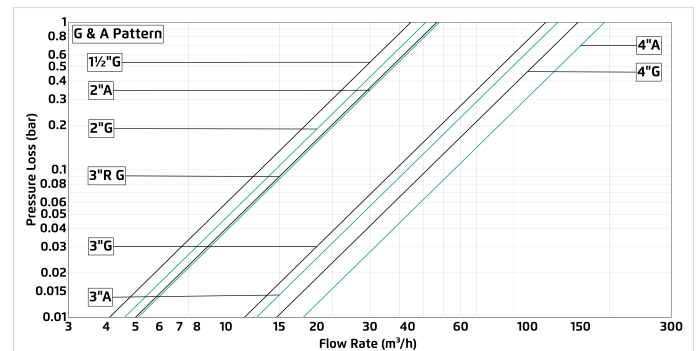
*ISO 4604

Pulse Option

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

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

Flow Chart



Differential Pressure & Flow Calculation

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

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