

## Hydrometer

with Magnetic Drive

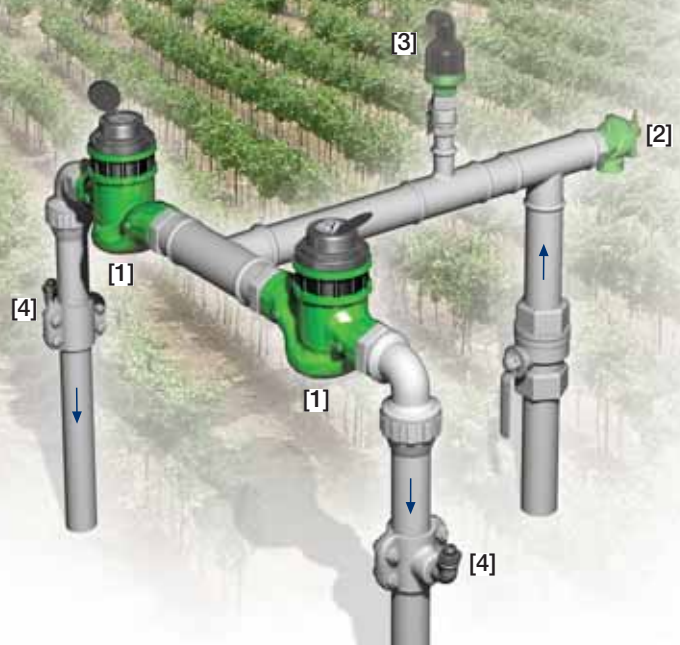
IR-900-M0-Z

The BERMAD Hydrometer with Magnetic Drive integrates a vertical turbine Woltman-type water meter with a diaphragm actuated hydraulic control valve. The impeller drive is magnetically coupled to a vacuum-sealed meter register in the control head. Serving as Flow Meter and Main Valve, the BERMAD Model IR-900-M0-Z controls irrigation together with the irrigation controller. It opens and shuts in response to remote hydraulic commands or locally by its manual selector.



### Features and Benefits

- Integrated "All-in-One" Control Valve
  - Saves space, cost and maintenance
- Hydraulically Controlled Hydrometer
  - Line pressure driven
- Magnetic Drive with Vacuum-Sealed Register
  - Water-free gear train mechanism
  - Reed-switch and Opto pulse-generating modes
  - Various pulse combinations
- Internal Inlet & Outlet Flow Straighteners
  - Saves on straightening distances
  - Maintains accuracy
- Integrated Flow Metering Calibration Device
  - Precise measurement
- User-Friendly Design
  - Simple in-line inspection and service

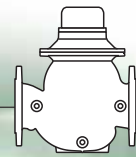


### Typical Applications

- Computerized Irrigation Systems
- Distribution Centers
- Remote Flow Data Read-Out
- Flow Monitoring & Leakage Control
- Water Treatment Systems
- Volumetric Irrigation Systems

- [1] BERMAD Model IR-900-M0-Z measures flow.
- [2] BERMAD Relief Valve Model IR-43Q-R
- [3] BERMAD Air Valve Model ARC-A-P-I
- [4] BERMAD Vacuum Breaker Model 1/2"-ARV

# BERMAD Irrigation



## IR-900-MO-Z

For full technical details, refer to Engineering Section.

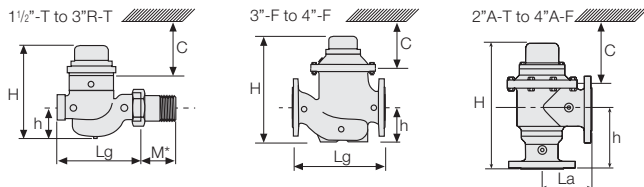
## 900 Series

On/Off Control

### Technical Specifications

#### Dimensions and Weights

Size	DN Inch	40-T 1 1/2-T	50-T 2-T	50A-T 2A-T	80R-T 3R-T	80R-F 4R-F	80-F 3-F	80A-F 3A-F	100-F 4-F	100A-F 4A-F
Lg	mm inch	250 9.8	250 9.8	N.A. N.A.	250 9.8	310 12.2	300 11.8	N.A. N.A.	350 13.8	N.A. N.A.
La	mm inch	N.A. N.A.	N.A. N.A.	120 4.7	N.A. N.A.	N.A. N.A.	N.A. N.A.	150 5.9	N.A. N.A.	180 7.1
H	mm inch	270 10.6	277 10.9	300 11.8	277 10.9	298 11.7	382 15.0	402 15.8	447 17.6	481 18.9
C	mm inch	210 9	210 9	210 9	210 9	225 9	285 11	285 11	365 15	365 15
h	mm inch	95 3.7	95 3.7	125 4.9	79 3.1	100 3.9	123 4.8	196 7.7	137 5.4	225 8.9
M*	mm inch	67 2.6	77 3.0	N.A. N.A.	N.A. N.A.	N.A. N.A.	N.A. N.A.	N.A. N.A.	N.A. N.A.	N.A. N.A.
Weight	Kg lb.	6.8 15	8.8 19.4	8.1 17.4	7.3 16.1	16 35.3	26.0 57.3	25.8 56.2	37.0 81.6	36.1 78.9



#### Accuracy & Flow Data

Size	Accuracy	DN inch	40 1 1/2	50 2	80R 3R	80 3	100 4
ISO 4064-1 Class			A	A		B	B
Q min (Minimum flow)	5%	m <sup>3</sup>	0.8	0.8	1.2	1.2	1.8
		gpm	3.5	3.5	5.3	5.3	7.9
Qn, ISO 4064-1 (Nominal flow)	2%	m <sup>3</sup>	15	15	17	40	60
		gpm	66	66	75	176	264
Qper=Q3 (Permanent flow)	2%	m <sup>3</sup>	25	40	40	100	160
		gpm	110	176	176	440	704

#### Pulse Option

Size	One pulse per	Liter ; Gallon			
		1; 0.1	10; 1	100; 10	1000; 100
1 1/2-4"; DN50-100		■	▲	▲	▲

▲ R.S. = Reed-Switch    ■ O.E. = Opto-Electric  
Two parallel pulses are transmitted. Other pulse rates are available on request.

### Technical Data

#### End Connections:

Threaded: 1 1/2, 2 & 3"R; DN40, 50 & 80R

Flanged: 3R, 3 & 4"; DN80R, 80 & 100

Pressure Rating: 16 bar; 232 psi

Minimum Operating Pressure: 0.5 bar; 7 psi

For lower pressure requirements, consult factory

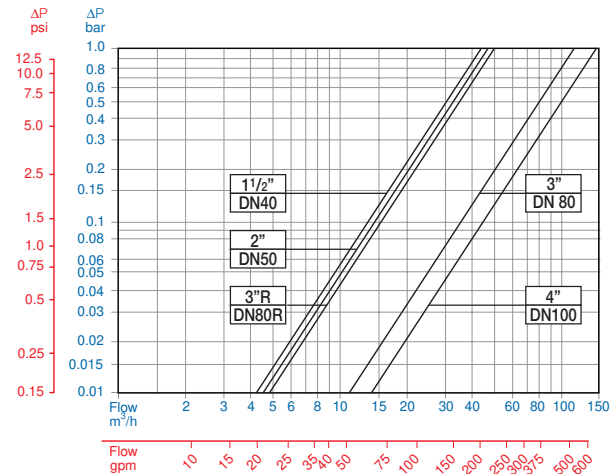
### How to Order

Please specify the requested valve in the following sequence: (for more options, refer to Ordering Guide.)

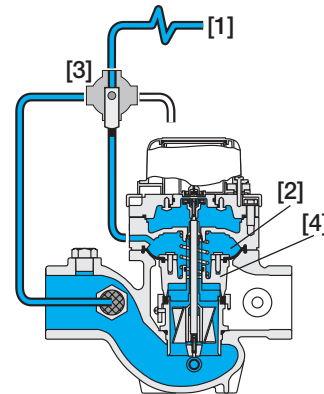
Sector	Size	Primary Feature	Control Categories	Additional Feature	Pattern	Construction Materials	End Connections	Coating	Voltage & Position	Tubing & Fittings	Dial Capacity	Pulse Rate	Additional Attributes
IR	1 1/2-4"	900	MO	00	G	I	BP	PG	-	PP	WAT	R12	Z
Other sizes available on request.													
Globe	G		Plastic Tubing & Fittings			R.S.	10 Lit	R01	R.S.	1 Gal	RG3		Z
Angle 90°	A		Plastic Tubing & Brass Fittings			R.S.	100 Lit	R02	R.S.	10 Gal	RG4		L
120° (2 1/2" & 4" only)	H					R.S.	1 m <sup>3</sup>	R03	R.S.	100 Gal	RG5		
						R.S.	100 Lit+10 Lit	R12	R.S.	10+1 Gal	G34		
						R.S.	1 m <sup>3</sup> +1100 Lit	R23	R.S.	100+10 Gal	G45		
BSP (1 1/2, 2 & 3"R only)	BP					O.E.	1 Lit	P01	O.E.	0.1 Gal	PG2		
NPT (1 1/2, 2 & 3"R only)	NP					O.E.	10 Lit	P10	O.E.	1 Gal	PG3		
ISO-16	16					O.E.+R.S.	1+100 Lit	PQ1	O.E.+R.S.	0.1+10 Gal	P4G		
ISO-10	10					O.E.+R.S.	10 Lit+1 m <sup>3</sup>	P13	O.E.+R.S.	1+100 Gal	P5G		
ISO-14 (ISO-10/4 Holes)	14					R.S.	No Pulse	RNP	R.S.	No Pulse Gal	RNG		
ANSI-125	A1												
JIS-10	J1												
BST-D	BD												

R.S. = Reed-Switch    O.E. = Opto-Electric

#### Flow Chart



#### Operation



Hydraulic Command [1] is applied to the Control Chamber [2], through the Manual Selector [3]. This creates a superior closing force that moves the Diaphragm Assembly [4] to a closed position. Discharging pressure from the control chamber, by turning the manual selector, causes the line pressure acting on the lower side of the diaphragm assembly to move the Hydrometer to an open position, and measure the flow rate.



info@bermad.com • www.bermad.com

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