

# Flow Control and Pressure Reducing Hydrometer, Magnetic Drive

with Solenoid Control

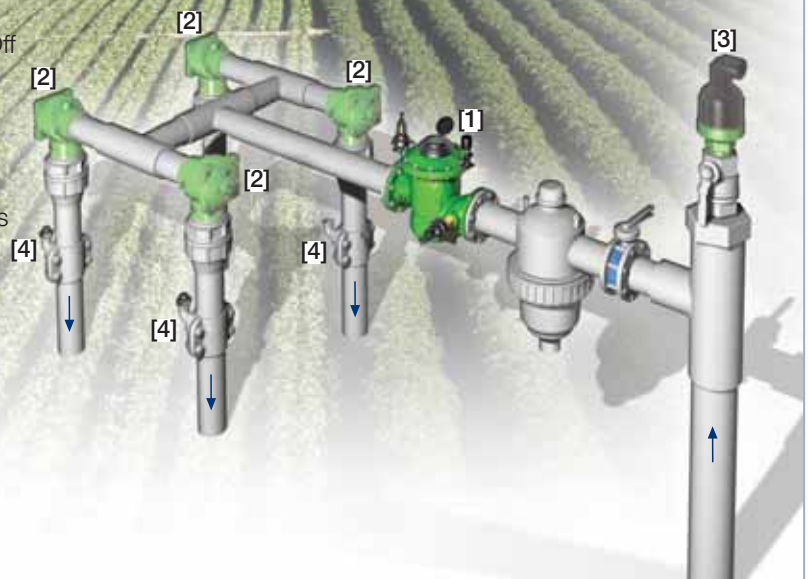
**IR-972-M0-55-KV**

The BERMAD Model IR-972-M0-55-KV integrates a vertical turbine Woltman-type water meter with a diaphragm actuated hydraulic control valve. Serving as Flow Meter and Main Valve, it controls irrigation together with the irrigation controller. The BERMAD Hydrometer limits demand and reduces downstream pressure to constant preset maximum values. It either opens or shuts in response to an electric signal.



## Features and Benefits

- Integrated "All-in-One" Control Valve
  - Saves space, cost and maintenance
- Line Pressure Driven, Electrically Controlled On/Off
  - Limits fill-up rate and consumer over-demand
  - Protects downstream system
- 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
- Paddle-Type Hydro-Mechanical Flow Pilot
  - No added head loss
  - Wide setting range
- Simple In-Line Inspection and Service



## Typical Applications

- Computerized Irrigation Systems
- Remote Flow Data Read-Out
- Flow Monitoring & Leakage Control
- Remote and/or Elevated Plots
- Line Fill-Up Control Solutions
- Pressure Reducing Systems
- Multiple Independent Consumer Systems

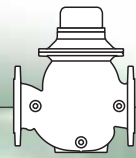
[1] BERMAD Model IR-972-M0-55-KV opens in response to electric signal, limits consumer over-demand, controls laterals and distribution line fill-up while reducing pressure, and measures flow.

[2] BERMAD On/Off Control Valve Model IR-405-Z

[3] BERMAD Air Valve Model ARC-A-P-I

[4] BERMAD Vacuum Breaker Model 1/2"-ARV

# BERMAD Irrigation



## IR-972-MO-55-KV

For full technical details, refer to Engineering Section.

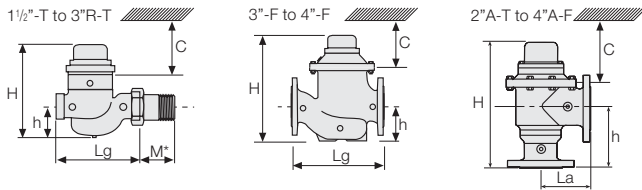
## 900 Series

Flow Control & Pressure Reducing

### 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> gpm	0.8 3.5	0.8 3.5	1.2 5.3	1.2 5.3	1.8 7.9
Qn, ISO 4064-1 (Nominal flow)	2%	m <sup>3</sup> gpm	15 66	15 66	17 75	40 176	60 264
Qper-Q3 (Permanent flow)	2%	m <sup>3</sup> gpm	25 110	40 176	40 176	100 440	160 704

#### 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"; DN40, 50 & 80R  
Flanged: 3R, 3 & 4"; DN80R, 80 & 100  
Pressure Rating: 10 bar; 145 psi

**Minimum Operating Pressure:** 0.5 bar; 7 psi  
For lower pressure requirements, consult factory  
**Setting Range:** 1-7.0 bar; 15-100 psi  
**Flow Setting Range:** 1-5 m/sec; 3.3-16.5 f/sec

#### Solenoid Voltage Range:

**S-390 & S-400:** 24 VAC, 24 VDC  
**S-392 & S-402:** 9-20 VDC, Latch  
**S-982 & S-985:** 12-50 VDC, Latch

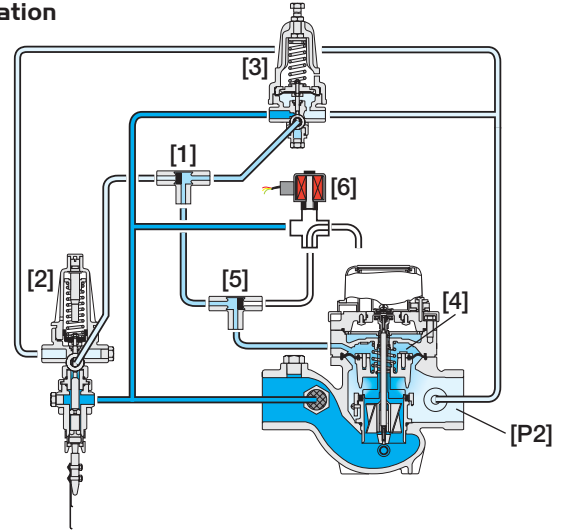
Other voltages available.  
For Full electric data, refer to Accessories Section.

### 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"	972	MO	55	G	I	BP	PG	4AC	PP	WAT	R12	KV	
Globe	G	9VDC -	Latch	9DS	R.S.	10 Lit	R01	R.S.	1 Gal	RG3	Plastic Control Accessories Paddle Flow Control Pilot omologation Approved Other attributes available on request	K		
Angle 90°	A	12VDC -	Latch	1DS	R.S.	100 Lit	R02	R.S.	10 Gal	RG4		V		
120° (2 1/2" & 4" only)	H	24VDC -	N.C.	4DC	R.S.	1 m <sup>3</sup>	R03	R.S.	100 Gal	RG5		L		
BSP (1 1/2, 2 & 3" R only)	BP	24VDC -	N.O.	4DC	R.S.	100 Lit+10 Lit	R12	R.S.	10+1 Gal	G34				
NPT (1 1/2, 2 & 3" R only)	NP	24VAC -	N.C.	4AC	R.S.	1 m3+1100 Lit	R23	R.S.	100+10 Gal	G45				
ISO-16	16	24VAC -	N.O.	4AO	O.E.	1 Lit	P01	O.E.	0.1 Gal	PG2				
ISO-10	10	24VAC, Lightning Proof -	N.C.	4RC	O.E.	10 Lit	P10	O.E.	1 Gal	PG3				
ISO-14 (ISO-10/4 Holes)	14	24VAC, Lightning Proof -	N.O.	4RO	O.E.+R.S.	1+100 Lit	PQ1	O.E.+R.S.	0.1+10 Gal	P4G				
ANSI-125	A1	Other electrical ratings are available			O.E.+R.S.	10 Lit+1 m <sup>3</sup>	P13	O.E.+R.S.	1+100 Gal	P5G				
JIS-10	J1	Plastic Tubing & Fittings		PP	R.S.	No Pulse	RNP	R.S.	No Pulse Gal	RNG				
BST-D	BD	Plastic Tubing & Brass Fittings		PB	R.S. = Reed-Switch    O.E. = Opto-Electric									

### Operation



Shuttle Valve [1] (SV-1) hydraulically connects the Paddle Flow Pilot (PFP) [2] or the Pressure Reducing Pilot (PRP) [3] to the Hydrometer Control Chamber [4] through Shuttle Valve [5] (SV-5). When the Solenoid [6] is closed, the PFP commands the AMV to throttle closed should demand rise above setting. The PRP commands the AMV to reduce Downstream Pressure [P2] to pilot setting. In response to an electric signal, the Solenoid switches and pressurizes SV-5, which thereby directs line pressure into the control chamber, shutting the Hydrometer.



info@bermad.com • www.bermad.com

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