

# Flow Control and Pressure Reducing Hydrometer

**Magnetic Drive with Solenoid Control**

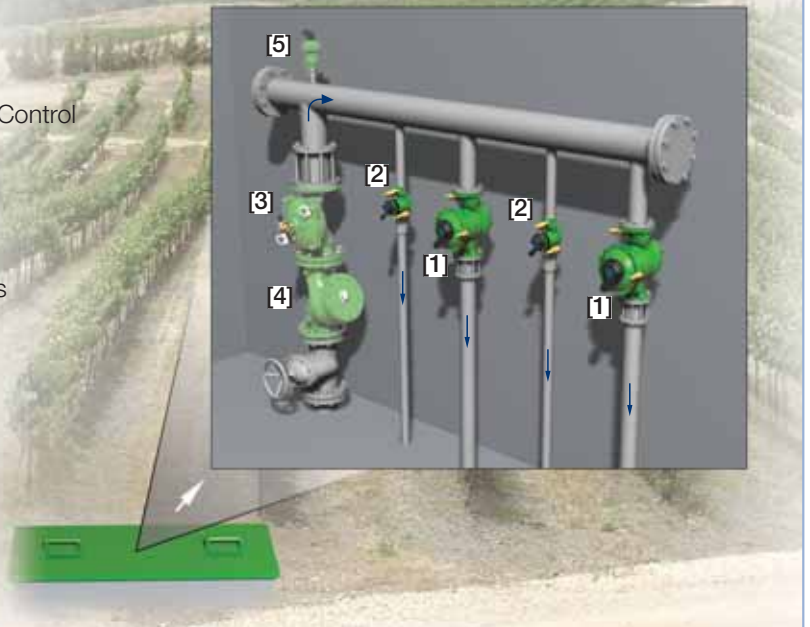
**IR-972-M0-55-RV**

The BERMAD Model IR-972-M0-55-RV integrates a vertical turbine Woltman-type water meter with a diaphragm actuated hydraulic control valve. As the system's Flow Meter and Main Valve, it controls irrigation together with the irrigation controller. The BERMAD Hydrometer limits the flow and downstream pressure to a constant preset maximum. 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
- Hydraulic Flow & Pressure Control with Solenoid Control
  - Limits fill-up rate & consumers over-demand
  - Protects downstream systems
- Magnetic Drive with Vacuum-Sealed Register
  - Water-free gear train mechanism
  - Reed-switch and Opto pulse-generating modes
  - Varios pulse combinations
- Internal Inlet & Outlet Flow Straighteners
  - Saves on straightening distances
  - Maintains accuracy
- Integrated Flow Metering Calibration Device
- Pedal-Type Hydro-Mechanic Flow Pilot
  - No added head loss
  - Easy flow and pressure setting
  - With wide setting range

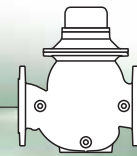


## Typical Applications

- Computerized Irrigation Systems
- Flow Monitoring and Leakage Control
- Multiple Independent Consumer Systems
- Pressure Reducing Stations
- Distribution Centers

- [1] BERMAD Model IR-972-M0-55-RV opens in response to an electric signal, limiting over demand, and establishing reduced pressure zones.
- [2] BERMAD Pressure Reducing & Flow Control Hydrometer Model IR-972-M0-55-RV (3"R; DN80R and smaller)
- [3] BERMAD Main Valve with Solenoid Control Model IR-410-R
- [4] BERMAD Strainer Model 70F
- [5] BERMAD Air Valve Model ARC-A-I-I

# BERMAD Irrigation



## IR-972-MO-55-RV

For full technical details, refer to Engineering Section.

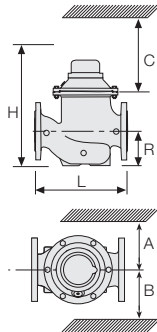
## 900 Series

Flow Control

### Technical Specifications

#### Dimensions and Weights

Size	DN Inch	80 3	100 4	150 6	200 8	250 10
L	mm	300	350	500	600	600
	inch	11.8	13.8	19.7	23.6	23.6
H	mm	382	447	602	617	617
	inch	15	17.6	23.7	24.3	24.3
C	mm	290	340	450	465	465
	inch	11.4	13.4	17.7	18.3	18.3
R	mm	123	137	216	228	228
	inch	4.8	5.4	8.5	9	9
A; B	mm	305	325	390	390	415
	inch	12	12.8	15.4	15.4	16.3
Weight	Kg	23	31	71	93	141
	lb.	57.7	68.3	156.5	205	310.9



Data is for Globe Flanged PN 16, Hydrometer.  
For full data, refer to Engineering Section.

#### Accuracy & Flow Data (ISO 4064-I, Class B)

Size	Accuracy	DN inch	80 3	100 4	150 6	200 & 250 8 & 10
Q min (Minimum flow)	5%	m <sup>3</sup> gpm	1.2 5.3	1.8 7.9	4 17.6	6.3 27.7
Qn, ISO 4064-1 (Nominal flow)	2%	m <sup>3</sup> gpm	40 176	60 264	150 660	250 1100
Qper=Q3 (Permanent flow)	2%	m <sup>3</sup> gpm	100 440	160 704	250 1100	400 1760

#### Pulse Option

Size	One pulse per	Liter ; Gallon				m <sup>3</sup> ; Gallon	
		1; 0.1	10; 1	100; 10	1; 100	10; 1000	
3-4"; DN80-100	■			▲	▲		
	■			▲	▲		
6-10"; DN150-250	■			▲	▲		
	■			▲	▲		

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

### Technical Data

#### Patterns and Sizes:

Globe: 3-10"; DN80-250  
Angle 90°: 3-8"; DN80-200  
Angle 120°: 4"; DN100

#### End Connections:

Flanged: 3-10"; DN80-250

Pressure Ratings: 16 bar; 232 psi

#### Minimum Operating Pressure:

0.5 bar; 7 psi

For lower pressure requirements, consult factory

Setting Range: 1-10 bar; 15-145 psi

#### Flow Setting Range:

1-5 m/sec; 3.3-16.5 f/sec

#### Materials:

##### Body and Cover:

Polyester Coated Cast or Ductile Iron

##### Internals:

St. St. & Glass Fiber Reinforced Nylon

Impeller: Polypropylene

##### Elastomers:

Reinforced NR Diaphragm & NBR (Buna-N) Seals

Pivots and Bearings: Tungsten Carbide

Control Accessories: Brass

Tubing and Fittings: Reinforced Plastic and Brass

#### Solenoid Voltage Range:

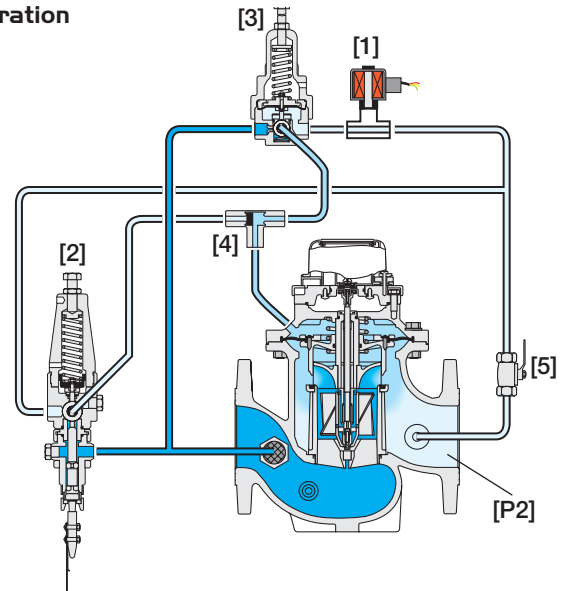
S-390 & S-400: 24 VAC, 24 VDC

S-392 & S-402: 9-20 VDC, Latch

S-982 & S-985: 12-50 VDC, Latch

Other Voltages available

### Operation



Opening the Solenoid [1] opens the Hydrometer. The Flow Pilot [2] commands the Hydrometer to throttle closed should demand rise above setting, and to modulate open when demand drops. The Pressure Reducing Pilot [3] controls the Hydrometer, preventing Downstream Pressure [P2] from rising above setting. The Shuttle Valve [4] directs the pilots commands into the Hydrometer Control chamber. Closing the solenoid causes the Hydrometer to shut. The downstream Cock Valve [5] enables manual closing.

### 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	3-10"	972	MO	55	G	I	16	PG	4AC	PB	WAT	R23	RV
Globe	G	9VDC - Latch	9DS	R.S.	100 Lit	R02	R.S.	10 Gal	RG4	Metal Control Accessories	R		
Angle	A	12VDC - Latch	1DS	R.S.	1 m <sup>3</sup>	R03	R.S.	100 Gal	RG5	Paddle Flow Control Pilot	V		
120° (4"; DN100 only)	H	24VDC - N.C.	4DC	R.S.	10 m <sup>3</sup>	R04	R.S.	1000 Gal	RG6	Homologation Approved	L		
		24VAC - N.C.	4AC	R.S.	100 Lit + 1 m <sup>3</sup>	R23	R.S.	10+100 Gal	G45	Other attributes available on request			
		24VAC - N.O.	4AO	R.S.	1 m <sup>3</sup> +10 m <sup>3</sup>	R34	R.S.	100+1000 Gal	G56				
ISO-16	16	24VAC, Lightning Proof - N.C.	4RC	O.E.	1 Lit	P01	O.E.	0.1 Gal	PG2				
ISO-10	10	24VAC, Lightning Proof - N.O.	4RO	O.E.	10 Lit	P10	O.E.	1 Gal	PG3				
ISO-14 (ISO-10/4 Holes)	14	Other electrical ratings are available.		O.E.+R.S.	1+100 Lit	PQ1	O.E.+R.S.	0.1+10 Gal	P4G				
ANSI-125	A1			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 & Brass Fittings	PB	R.S.	No Pulse	RNP	R.S.	No Pulse Gal	RNG				
BST-D	BD	Copper Tubing & Brass Fittings	CB										



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