

# Flow Control Hydrometer

Magnetic Drive with Solenoid Control

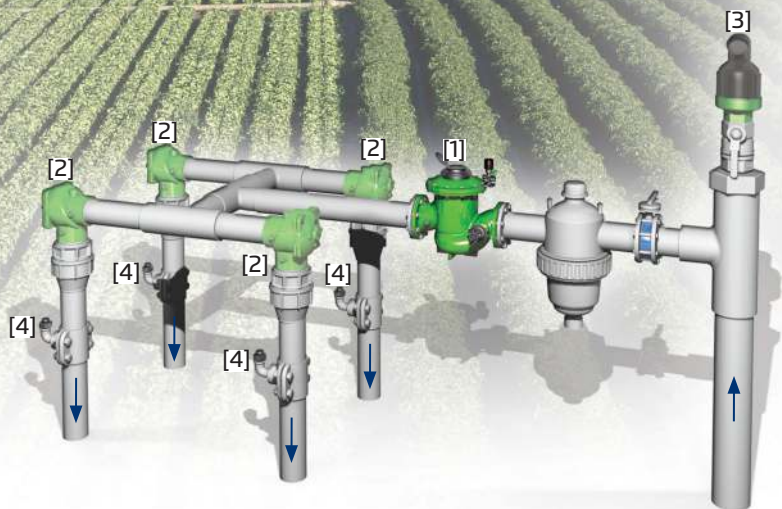
## IR-970-M0-55-KV

The BERMAD Model IR-970-M0-55-KV integrates a vertical turbine Woltman-type water meter and 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 the flow 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
- Line Pressure Driven, Electrically Controlled On/Off
  - Limits fill-up rate and consumer over-demand
- 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
- User-Friendly Design
  - Easy pressure setting
  - Simple in-line inspection and service



### Typical Applications

- Computerized Irrigation Systems
- Flow Monitoring & Leakage Control
- Remote and/or Elevated Plots
- Multiple Independent Consumer Systems
- Line Fill-Up Control Solutions
- Distribution Centers

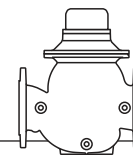
[1] BERMAD Model IR-970-M0-55-KV opens in response to electric signals, sustains pressure to protect supply system, and measures flow.

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

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

[4] BERMAD Vacuum Breaker Model ½"-ARV

# BERMAD Irrigation



## IR-970-MO-55-KV

For full technical details, refer to Engineering Section.

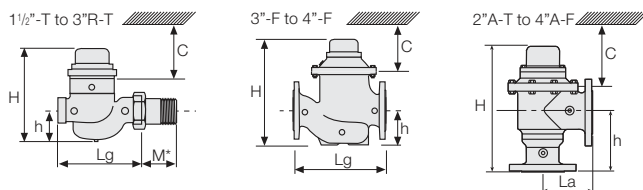
## 900 Series

Flow 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.	250 9.8	310 12.2	300 11.8	N.A.	350 13.8	N.A.
La	mm inch	N.A.	N.A.	120 4.7	N.A.	N.A.	N.A.	150 5.9	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 8.3	210 8.3	210 8.3	210 8.3	225 8.9	285 11.2	285 11.2	365 14.4	365 14.4
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.
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"R; 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: 1-5 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.

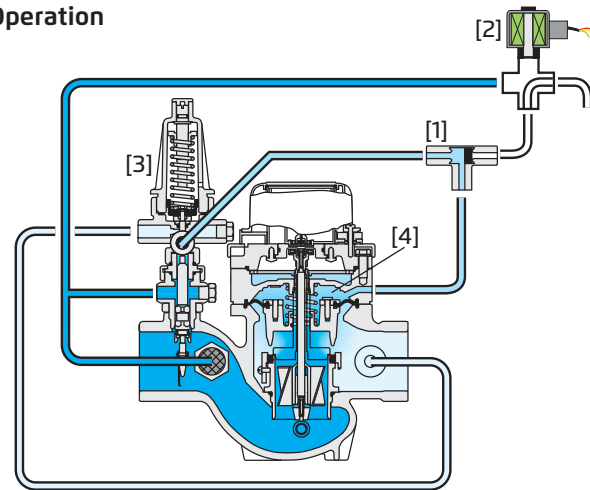
### How to Order

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"	970	MO	55	G	I	BP	PG	4AC	PP	WAT	R12	KV
Other sizes available on request.													
Globe	A	9VDC	-	Latch	9DS	R.S.	10 Lit	R01	R.S.	1 Gal	RG3		K
Angle 90°	G	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	24VDC	-	N.O.	4DC	R.S.	1 m <sup>3</sup> +1100 Lit	R23	R.S.	100+10 Gal	G45		
ISO-16	16	24VAC	-	N.O.	4A0	O.E.	1 Lit	P01	O.E.	0.1 Gal	PG2		
ISO-10	10	24VAC, Lightning Proof	-N.C.	4RC	4RC	O.E.	10 Lit	P10	O.E.	1 Gal	PG3		
ISO-14 (ISO-10/4 Holes)	14	24VAC, Lightning Proof	-N.O.	4R0	4R0	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					R.S.	No Pulse	RNP	R.S.	No Pulse Gal	RNG		
BST-D	BD	Plastic Tubing & Fittings			PP								
		Plastic Tubing & Brass Fittings			PB								

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

#### Operation



The Shuttle Valve [1] hydraulically connects the Solenoid [2] or the Paddle Flow Pilot (PFP) [3] to the Hydrometer Control Chamber [4]. When the solenoid is closed, the PFP commands the Hydrometer to throttle closed should demand rise above setting. In response to an electric signal, the solenoid switches, directing line pressure through the shuttle valve into the control chamber, thereby causing the Hydrometer to shut. The solenoid also features local manual closing.



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