Flow Control Hydrometer

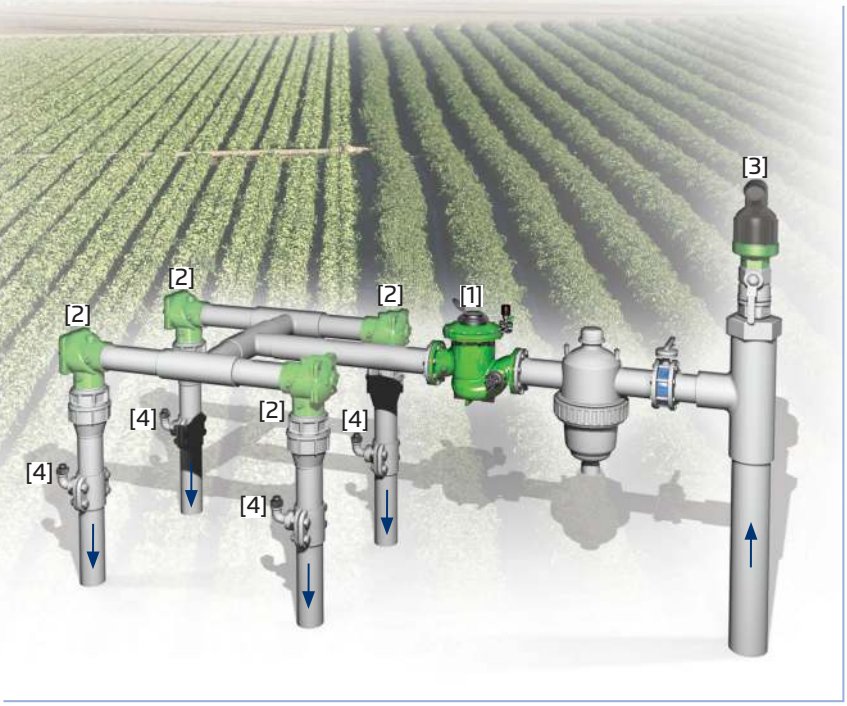
Magnetic Drive with Solenoid Control

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

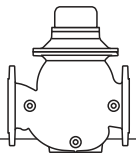


Typical Applications

- 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



900 Series

Flow Control

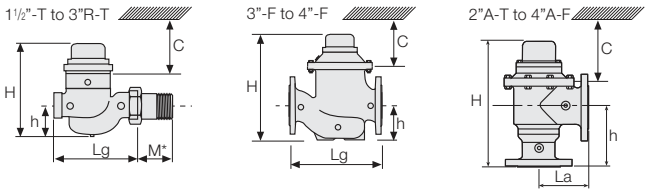
IR-970-M0-55-KV

For full technical details, refer to Engineering Section.

Technical Specifications

Dimensions and Weights

Size	DN Inch	40-T 1½-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	250	250	N.A.	250	310	300	N.A.	350	N.A.
	inch	9.8	9.8	N.A.	9.8	12.2	11.8	N.A.	13.8	N.A.
La	mm	N.A.	N.A.	120	N.A.	N.A.	N.A.	150	N.A.	180
	inch	N.A.	N.A.	4.7	N.A.	N.A.	N.A.	5.9	N.A.	7.1
H	mm	270	277	300	277	298	382	402	447	481
	inch	10.6	10.9	11.8	10.9	11.7	15.0	15.8	17.6	18.9
C	mm	210	210	210	210	225	285	285	365	365
	inch	9	9	9	9	9	11	11	15	15
h	mm	95	95	125	79	100	123	196	137	225
	inch	3.7	3.7	4.9	3.1	3.9	4.8	7.7	5.4	8.9
M*	mm	67	77	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	inch	2.6	3.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Weight	Kg	6.8	8.8	8.1	7.3	16	26.0	25.8	37.0	36.1
	lb.	15	19.4	17.4	16.1	35.3	57.3	56.2	81.6	78.9



Accuracy & Flow Data

Size	Accuracy	DN inch	40 1½	50 2	80R 3R	80 3	100 4
ISO 4064-1 Class			A	A		B	B
Q min (Minimum flow)	5%	m^3	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^3	15	15	17	40	60
		gpm	66	66	75	176	264
Qper=Q3 (Permanent flow)	2%	m^3	25	40	40	100	160
		gpm	110	176	176	440	704

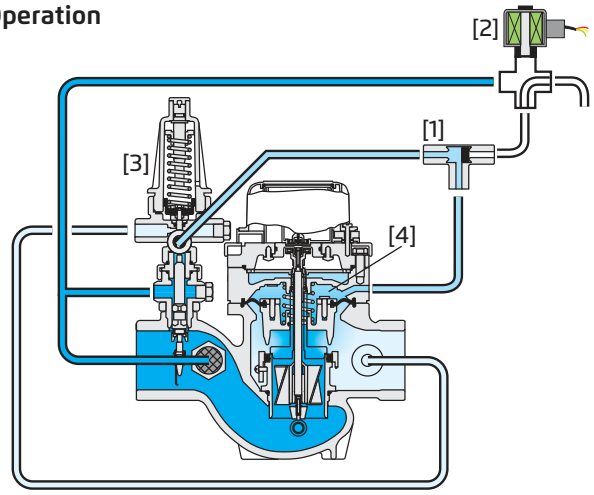
Pulse Option

Size \ One pulse per	Liter ; Gallon			
	1; 0.1	10; 1	100; 10	1000; 100
1½-4"; DN50-100	■	▲	▲	▲
	■		▲	
				▲

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

Two parllel pulses are transmitted. other pulse rates are avaiable on request.

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.

Technical Data

End Connections:
Threaded: 1½, 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	Additonal Attributes
IR	1½-4"	970	M0	55	G	I	BP	PG	4AC	PP	WAT	R12	KV

Other sizes available on request.

Globe	G
Angle 90°	A
120° (2½" & 4" only)	H

BSP (1½, 2 & 3"R only)	BP
NPT (1½, 2 & 3"R only)	NP
ISO-16	16
ISO-10	10
ISO-14 (ISO-10/4 Holes)	14
ANSI-125	A1
JIS-10	J1
BST-D	BD

9VDC	–	Latch	9DS
12VDC	–	Latch	1DS
24VDC	–	N.C.	4DC
24VDC	–	N.O.	4DO
24VAC	–	N.C.	4AC
24VAC	–	N.O.	4AO
24VAC, Lightning Proof	–	N.C.	4RC
24VAC, Lightning Proof	–	N.O.	4RO

Plastic Tubing & Fittings	PP
Plastic Tubing & Brass Fittings	PB

R.S.	10 Lit	R01	R.S.	1 Gal	RG3
R.S.	100 Lit	R02	R.S.	10 Gal	RG4
R.S.	1 m^3	R03	R.S.	100 Gal	RG5
R.S.	100 Lit+10 Lit	R12	R.S.	10+1 Gal	G34
R.S.	1 m3+1100 Lit	R23	R.S.	100+10 Gal	G45
O.E.	1 Lit	P01	O.E.	0.1 Gal	PG2
O.E.	10 Lit	P10	O.E .	1 Gal	PG3
O.E.+R.S.	1+100 Lit	PQ1	O.E.+R.S.	0.1+10 Gal	P4G
O.E.+R.S.	10 Lit+1 m^3	P13	O.E.+R.S.	1+100 Gal	P5G
R.S.	No Pulse	RNP	R.S.	No Pulse Gal	RNG

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

Plastic Control Accessories	K
Paddle Flow Control Pilot	V
omologation Approved	L

Other attributes available on request

info@bermad.com • www.bermad.com

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