

Flow Control Hydrometer

Magnetic Drive
Normally Closed with Hydraulic Control

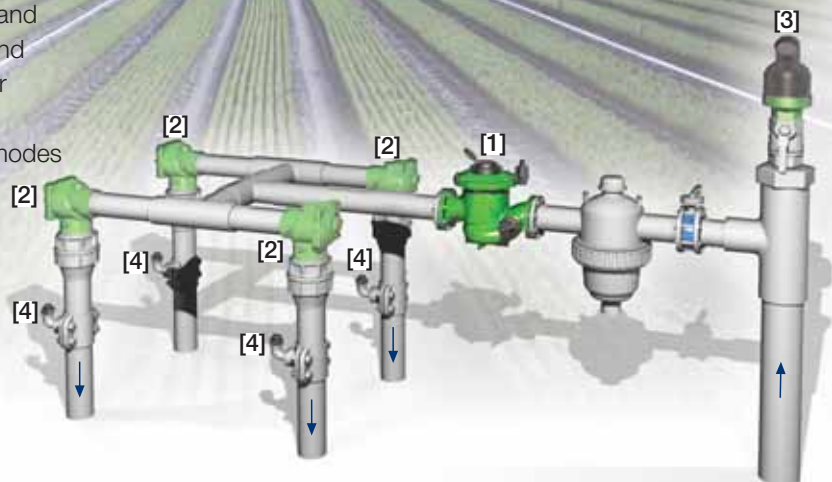
IR-970-M0-54-KV

The BERMAD Model IR-970-M0-54-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 the flow to a constant preset maximum. It is a Normally Closed Hydrometer, which opens in response to a remote pressure rise command and shuts in the absence of that command.



Features and Benefits

- Integrated "All-in-One" Control Valve
 - Saves space, cost and maintenance
- Line Pressure Driven, Normally Closed
 - Closes upon control failure
 - Limits fill-up rate and consumer over-demand
 - Amplifies and relays weak remote command
- 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
- Flow Monitoring & Leakage Control
- Remote and/or Elevated Plots
- Multiple Independent Consumer Systems
- Line Fill-Up Control Solutions
- Distribution Centers

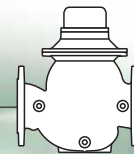
[1] BERMAD Model IR-970-M0-54-KV opens upon pressure rise command, limits fill-up rate and consumer over-demand, and measures flow.

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

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

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

BERMAD Irrigation



IR-970-M0-54-KV

For full technical details, refer to Engineering Section.

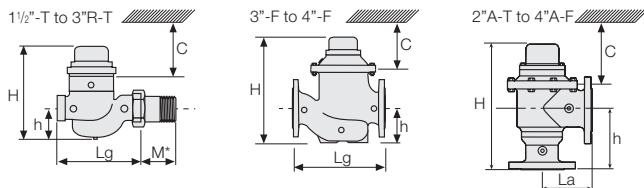
900 Series

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 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.
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	A	B	B
Q min (Minimum flow)	5%	m ³ 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 ³ gpm	15 66	15 66	17 75	40 176	60 264
Qper=Q3 (Permanent flow)	2%	m ³ 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

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

How to Order

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

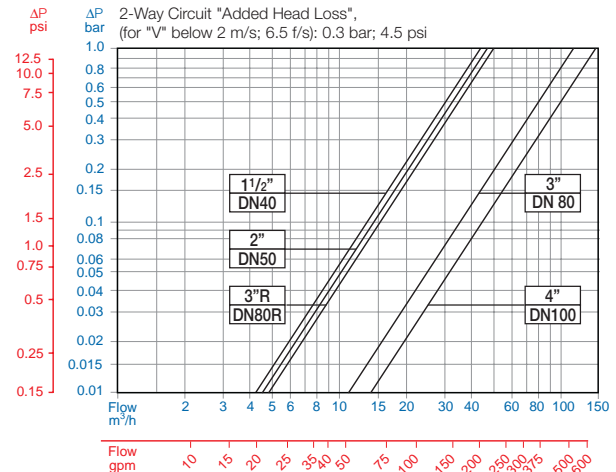
Sector	Size	Primary Feature	Control Categories	Additional Feature	Pattern	Construction Materials	End Connections	Coating	Voltage & Position	Tubing & Fittings	Dial Capacity	Pulse Rate	Additional Attributes
IR	1 1/2-4"	970	M0	54	G	I	BP	PG	-	PP	WAT	R12	KV
Globe Angle 90° 120° (2 1/2" & 4" only)		G A H	Plastic Tubing & Fittings Plastic Tubing & Brass Fittings		PP PB	R.S. 10 Lit R.S. 100 Lit R.S. 1 m ³ R.S. 100 Lit+10 Lit R.S. 1 m ³ +1100 Lit O.E. 1 Lit O.E. 10 Lit O.E.+R.S. 1+100 Lit O.E.+R.S. 10 Lit+1 m ³ R.S. No Pulse	R01 R02 R03 R12 R23 P01 P10 P01 P13 RNP	R.S. 1 Gal R.S. 10 Gal R.S. 100 Gal R.S. 10+1 Gal R.S. 100+10 Gal O.E. 0.1 Gal O.E. 1 Gal O.E.+R.S. 0.1+10 Gal O.E.+R.S. 1+100 Gal R.S. No Pulse Gal	RG3 RG4 RG5 G34 G45 PG2 PG3 P4G P5G RNG	Plastic Control Accessories Paddle Flow Control Pilot Homologation Approved Other attributes available on request	K V L		
BSP (1 1/2, 2 & 3"R only) NPT (1 1/2, 2 & 3"R only) ISO-16 ISO-10 ISO-14 (ISO-10/4 Holes) ANSI-125 JIS-10 BST-D		BP NP 16 10 14 A1 J1 BD	Globe Angle 90° 120° (2 1/2" & 4" only)		G A H								



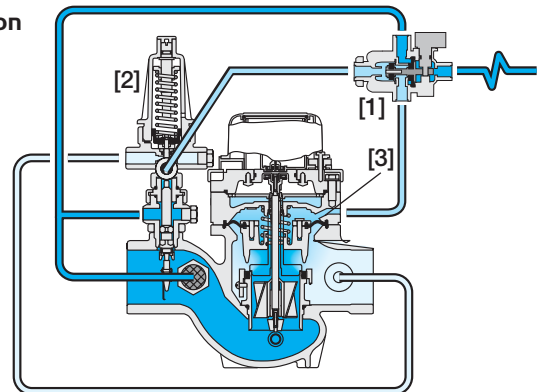
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Flow Chart



Operation



The 3-Way Hydraulic Relay Valve (3W-HRV) [1] hydraulically connects the Paddle Flow Pilot (PFP) [2] to the Hydrometer Control Chamber [3]. The PFP commands the Hydrometer to throttle closed should demand rise above setting, and to modulate open when demand drops below setting. The 3W-HRV switches upon pressure drop command, directing line pressure into the control chamber, and thereby causing the Hydrometer to shut. The 3W-HRV also features local manual closing.