Flow Control and Pressure Reducing Hydrometer, Magntic Drive

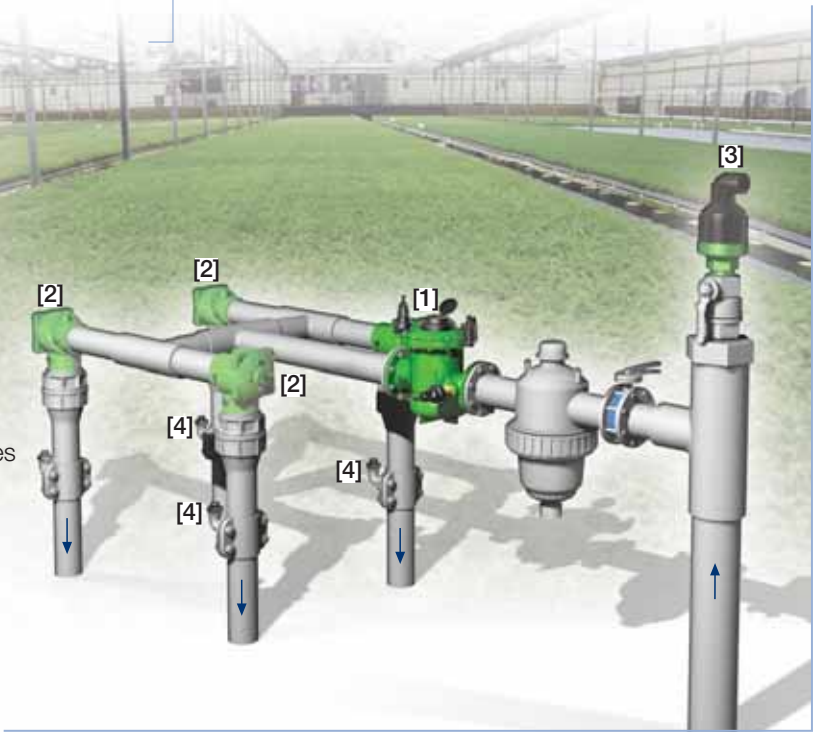
Normally Closed with Hydraulic Control

IR-972-M0-54-KV

The BERMAD Model IR-972-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 demand and reduces downstream pressure to constant preset maximum values. 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
  - Protects downstream system
  - 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

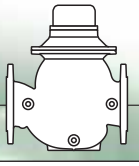


Typical Applications

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

[1] BERMAD Model IR-972-M0-54-KV opens upon pressure rise command, 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 ½"-ARV

BERMAD Irrigation



IR-972-M0-54-KV

900 Series
Flow Control & Pressure Reducing

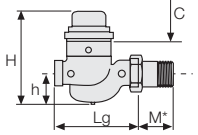
For full technical details, refer to Engineering Section.

Technical Specifications

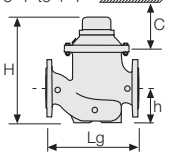
Dimensions and Weights

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

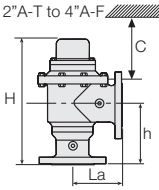
1½"-T to 3"R-T



3"-F to 4"-F



2"A-T to 4"A-F



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%	m³	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%	m³	15	15	17	40	60
		gpm	66	66	75	176	264
Qper=Q3 (Permanent flow)	2%	m³	25	40	40	100	160
		gpm	110	176	176	440	704

Pulse Option

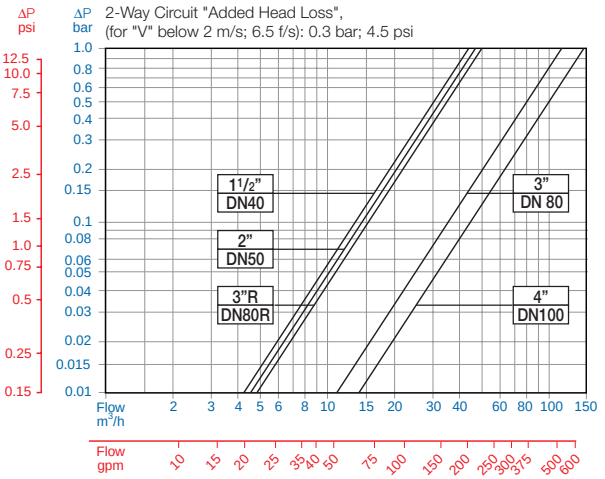
Size \ One pulse per	Liter ; Gallon			
	1; 0.1	10; 1	100; 10	1000; 100
1½-4"; DN50-100	■ ■	▲	▲ ▲	▲ ▲

▲ R.S. = Reed-Switch ■ O.E. = Opto-Electric
Two parllel pulses are transmitted. other pulse rates are avaiable on request.

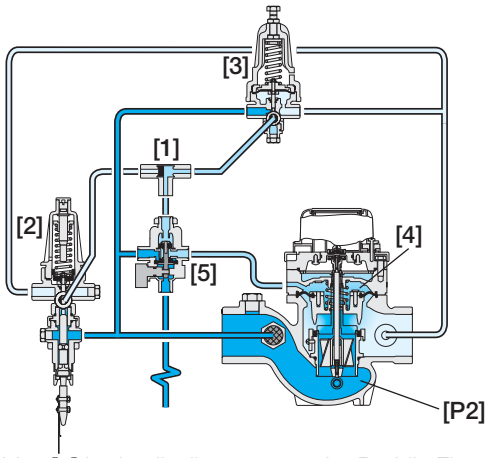
Technical Data

Pressure Rating: 10 bar; 145 psi
Minimum Operating Pressure: 0.5 bar; 7 psi
For lower pressure requirements, consult factory
Setting Range: 1-7 bar; 15-100 psi
Flow Setting Range: 1-5 m/sec; 3.3-16.5 f/sec

Flow Chart



Operation



The Shuttle Valve **[1]** hydraulically connects the Paddle Flow Pilot (PFP) **[2]** or the Pressure Reducing Pilot (PRP) **[3]** to the Hydrometer Control Chamber **[4]** through the opened 3-Way Hydraulic Relay Valve (3W-HRV) **[5]**. 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. Upon a pressure drop command, the 3W-HRV switches, and directs line pressure into the control chamber, shutting the Hydrometer.

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"	972	M0	54	G	I	BP	PG	-	PP	WAT	R12	KV

Other sizes available on request.

Primary Feature

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

End Connections

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

Tubing & Fittings

Plastic Tubing & Fittings	PP
Plastic Tubing & Brass Fittings	PB

Pulse Rate

R.S.	10 Lit	R01	R.S.	1 Gal	RG3
R.S.	100 Lit	R02	R.S.	10 Gal	RG4
R.S.	1 m³	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 m³	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

Additonal Attributes

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

Other attributes available on request

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