

Pressure Reducing and Sustaining Hydrometer

Magnetic Drive
Normally Closed with Hydraulic Control

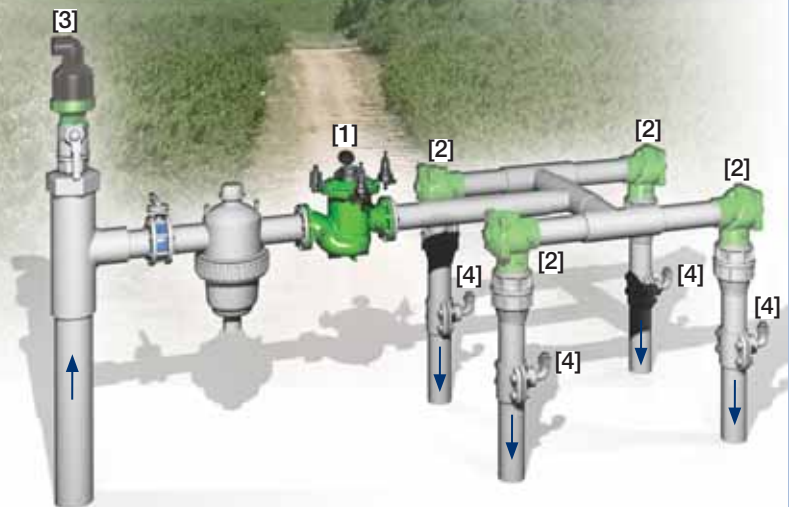
IR-923-M0-54-KX

The BERMAD Model IR-923-M0-54-KX 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 sustains minimum preset upstream (back) pressure and reduces downstream pressure to a constant preset maximum. It is a Normally Closed Hydrometer, which opens in response to a 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
 - Protects downstream system
 - Prioritizes pressure zones
 - 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
- Simple In-Line Inspection and Service



Typical Applications

- Computerized Irrigation Systems
- Flow Monitoring & Leakage Control
- Remote and/or Elevated Plots
- Line Fill-Up Control Solutions
- Pressure Reducing Systems
- Infield Filter Backwash Pressure Sustaining

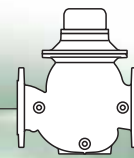
[1] BERMAD Model IR-923-M0-54-KX opens upon pressure rise command, sustains supply pressure, protects downstream systems, and measures flow.

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

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

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

BERMAD Irrigation



IR-923-MO-54-KX

For full technical details, refer to Engineering Section.

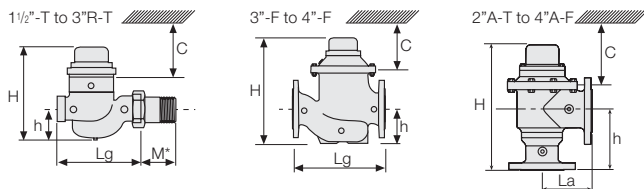
900 Series

Pressure Reducing & Sustaining

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		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: 1-7 bar; 15-100 psi
 Setting ranges vary according to specific pilot spring. Please consult factory.

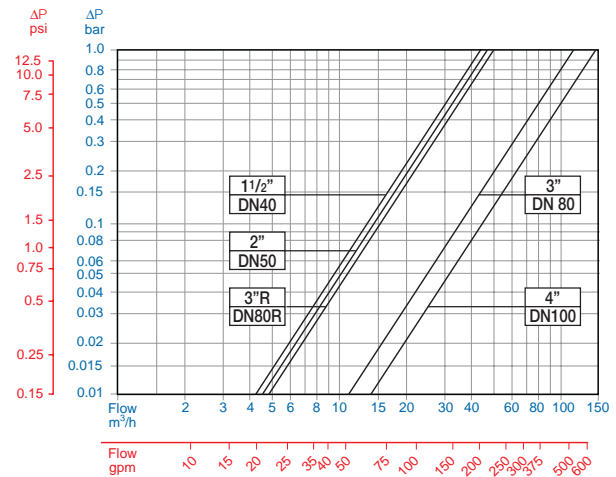
How to Order

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

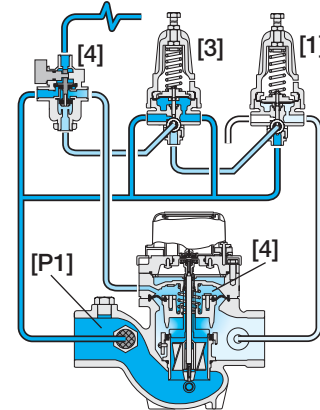
Sector	Size	Primary Feature	Control Categories	Additional Feature	Pattern	Construction Materials	End Connections	Coating	Voltage & Position	Tubing & Fittings	Dial Capacity	Pulse Rate	Additional Attributes
IR	1 1/2-4"	923	M0	54	G	I	BP	PG	-	PP	WAT	R12	KX
Other sizes available on request.													
Globe	G	Plastic Tubing & Fittings		PP	R.S.	10 Lit	R01	R.S.	1 Gal	RG3	Plastic Control Accessories		
Angle 90°	A	Plastic Tubing & Brass Fittings		PB	R.S.	100 Lit	R02	R.S.	10 Gal	RG4	3-Way Control		
120° (2 1/2" & 4" only)	H				R.S.	1 m ³	R03	R.S.	100 Gal	RG5	Homologation Approved		
BSP (1 1/2, 2 & 3"R only)	BP				R.S.	100 Lit+10 Lit	R12	R.S.	10+1 Gal	G34	Other attributes available on request		
NPT (1 1/2, 2 & 3"R only)	NP				R.S.	1 m ³ +1100 Lit	R23	R.S.	100+10 Gal	G45			
ISO-16	16				O.E.	1 Lit	P01	O.E.	0.1 Gal	PG2			
ISO-10	10				O.E.	10 Lit	P10	O.E.	1 Gal	PG3			
ISO-14 (ISO-10/4 Holes)	14				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 ³	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												

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

Flow Chart



Operation



The Pressure Reducing Pilot (PRP) [1] is hydraulically connected to the Hydrometer Control Chamber [2] through the Pressure Sustaining Pilot (PSP) [3] and the 3-Way Hydraulic Relay Valve (3W-HRV) [4]. The PSP commands the Hydrometer to throttle closed should Upstream Pressure [P1] drop below setting. When [P1] rises, the PSP switches and allows the PRP to control the Hydrometer, commanding it to reduce Downstream Pressure [P2]. Upon a pressure drop command, the 3W-HRV switches, directs line pressure into the control chamber, shutting the Hydrometer.



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