

## Pressure Sustaining Hydrometer

**Magnetic Drive**  
**Normally Closed with Hydraulic Control**

### IR-930-M0-54-KX

The BERMAD Model IR-930-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 opens fully when line pressure is in excess of setting. It is a Normally Closed Hydrometer, which opens in response to a remote pressure rise command and shuts in the absence of that command.

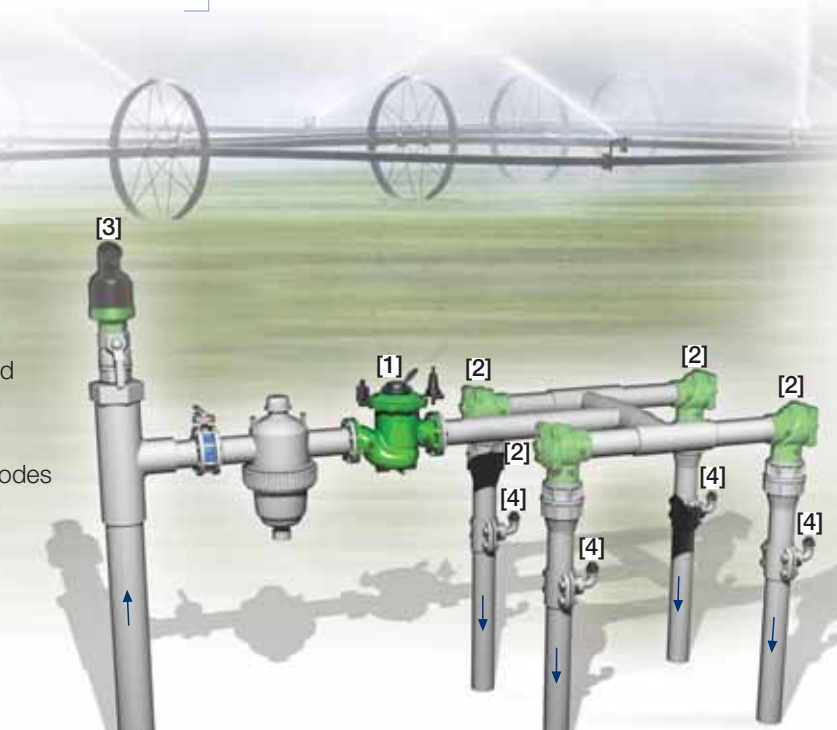


### Features and Benefits

- Integrated "All-in-One" Control Valve
  - Saves space, cost and maintenance
- Line pressure driven, Normally Closed
  - Closes upon control failure
  - Prioritizes pressure zones
  - Controls system fill-up
  - Opens fully upon line pressure rise
  - 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
- Line Emptying Prevention
- Systems Subject to Varying Supply Pressure
- Infield Filters Backwash Pressure Sustaining



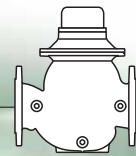
[1] BERMAD Model IR-930-M0-54-KX opens upon pressure rise command, sustains pressure to protect supply system and measures flow.

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

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

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

# BERMAD Irrigation



## IR-930-M0-54-KX

For full technical details, refer to Engineering Section.

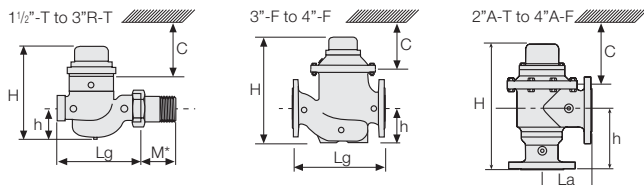
## 900 Series

Pressure 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	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 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 <sup>3</sup>	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 <sup>3</sup>	15	15	17	40	60
		gpm	66	66	75	176	264
Qper=Q3 (Permanent flow)	2%	m <sup>3</sup>	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
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.

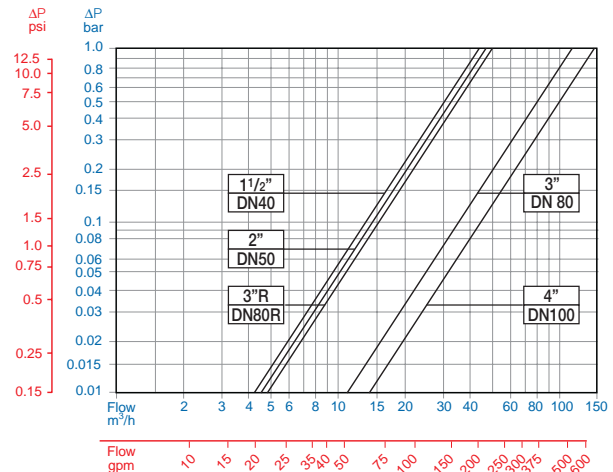
### How to Order

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

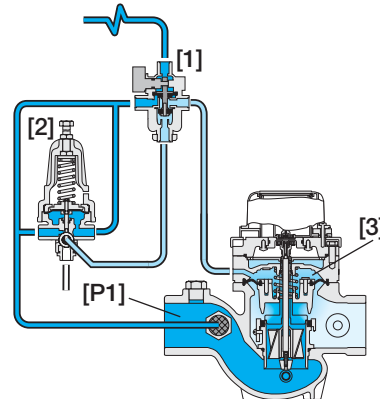
Sector	Size	Primary Feature	Control Categories	Additional Feature	Pattern	Construction Materials	End Connections	Coating	Voltage & Position	Tubing & Fittings	Dial Capacity	Pulse Rate	Additional Attributes
IR	1 1/2-4"	930	M0	54	G	I	BP	PG	-	PP	WAT	R12	KX
Globe Angle 90° 120° (2 1/2" & 4" only)		G A H	Plastic Tubing & Fittings Plastic Tubing & Brass Fittings		PP PB	R.S. 10 Lit R.S. 100 Lit R.S. 1 m <sup>3</sup> R.S. 100 Lit+10 Lit R.S. 1 m <sup>3</sup> +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 <sup>3</sup> R.S. No Pulse	R01 R02 R03 R12 R23 P01 P10 P01 P13 RNP	R.S. R.S. R.S. R.S. R.S. O.E. O.E. O.E.+R.S. O.E.+R.S. R.S.	1 Gal 10 Gal 100 Gal 10+1 Gal 100+10 Gal 0.1 Gal 1 Gal 0.1+10 Gal 1+100 Gal No Pulse Gal	RG3 RG4 RG5 G34 G45 PG2 PG3 P4G P5G RNG	Plastic Control Accessories 3-Way Control Homologation Approved L	K X 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											Other attributes available on request

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

### Flow Chart



### Operation



The 3-Way Hydraulic Relay Valve (3W-HRV) [1] hydraulically connects the Pressure Sustaining Pilot (PSP) [2] to the Hydrometer Control Chamber [3]. The PSP commands the Hydrometer to throttle closed should Upstream Pressure [P1] drop below setting, and to open fully when [P1] rises above 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.



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