

# Flow Control Hydrometer

Magnetic Drive

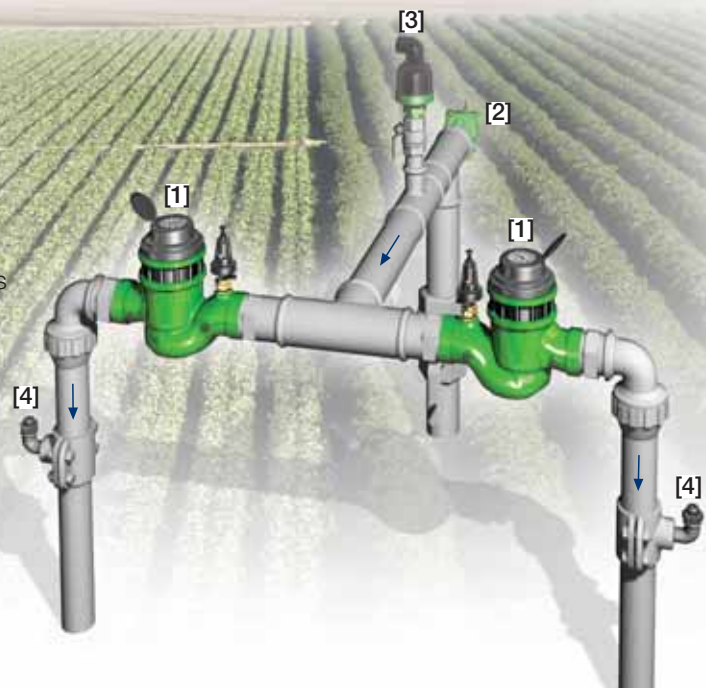
IR-970-M0-KVZ

The BERMAD Model IR-970-M0-KVZ 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.



## Features and Benefits

- Integrated "All-in-One" Control Valve
  - Saves space, cost and maintenance
- Hydraulic Pressure Control
  - Line pressure driven
  - 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
- Paddle-Type Hydro-Mechanical Flow Pilot
  - No added head loss
  - Wide setting range
- Simple In-Line Inspection and Service

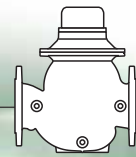


## Typical Applications

- Computerized Irrigation Systems
- Remote Flow Data Read-Out
- Flow Monitoring & Leakage Control
- Multiple Independent Consumer Systems
- Line Fill-Up Control Solutions
- Distribution Centers

- [1] BERMAD Model IR-970-M0-KVZ limits fill-up rate and over-demand, and measures flow.
- [2] BERMAD Relief Valve Model IR-43Q-R
- [3] BERMAD Air Valve Model ARC-A-P-I
- [4] BERMAD Vacuum Breaker Model 1/2"-ARV

# BERMAD Irrigation



## IR-970-MO-KVZ

For full technical details, refer to Engineering Section.

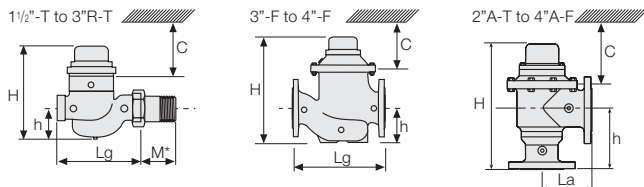
## 900 Series

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	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:** 1-5 m/sec; 3.3-16.5 f/sec

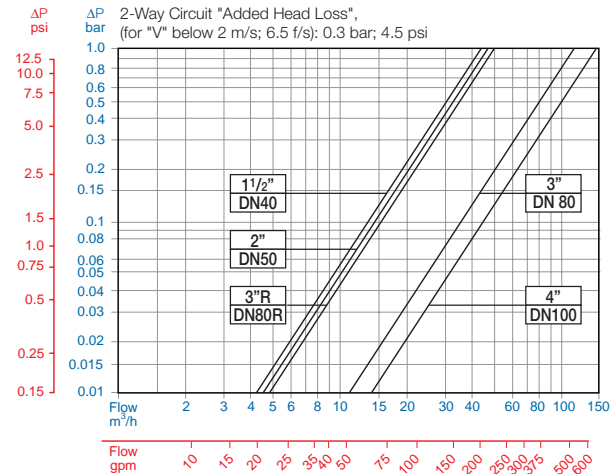
### How to Order

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

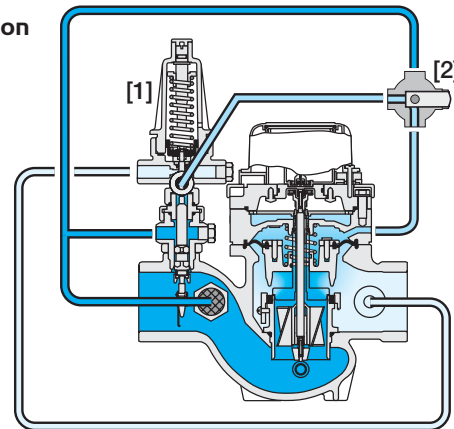
Sector	Size	Primary Feature	Control Categories	Additional Feature	Pattern	Construction Materials	End Connections	Coating	Voltage & Position	Tubing & Fittings	Dial Capacity	Pulse Rate	Additional Attributes
IR	1 1/2-4"	970	MO	00	G	I	BP	PG	-	PP	WAT	R12	KVZ
Other sizes available on request. Globe Angle 90° 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 PQ1 P13 RNP	R.S. R.S. R.S. R.S. O.E. O.E. O.E.+R.S. O.E.+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 Paddle Flow Control Pilot Manual Selector Homologation Approved Other attributes available on request	K V Z 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											

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

### Flow Chart



### Operation



The Hydrometer continuously transmits flow data to the irrigation controller. The Paddle Flow Pilot [1] commands the Hydrometer to throttle closed should demand rise above setting, and to modulate open when demand drops below setting. The Manual Selector [2] enables local manual closing.



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