# Flow Control Valve

with Solenoid Control

IR-170-55-bD

The BERMAD Normally Closed, Flow Control Valve with Hydraulic Remote Control is a hydraulically operated, diaphragm actuated control valve that limits system demand to a constant preset maximum flow rate. It either opens or shuts in response to an electric signal.

Features and Benefits

- Line Pressure Driven, Electrically Controlled On/Off
  - Limits fill-up rate and consumer over-demand
- Adjustable Servo Flow Pilot Controlled
  - Dynamic integrated needle valve
  - Easy flow setting
- Engineered Plastic Valve with Industrial Grade Design
  - Highly durable, chemical and cavitation resistant
  - No internal bolts and nuts
- hYflow 'Y' Valve Body with "Look Through" Design
  - Ultra-high flow capacity - Low pressure loss
- Unitized Flexible Super Travel (FST) Diaphragm and Guided Plug
  - Accurate and stable regulation with smooth closing
  - Requires low actuation pressure
  - Prevents diaphragm erosion and distortion
- Internal "Differential Pressure Duct" Flow Sensor
  - No moving parts
 - Saves space and simplifies installation
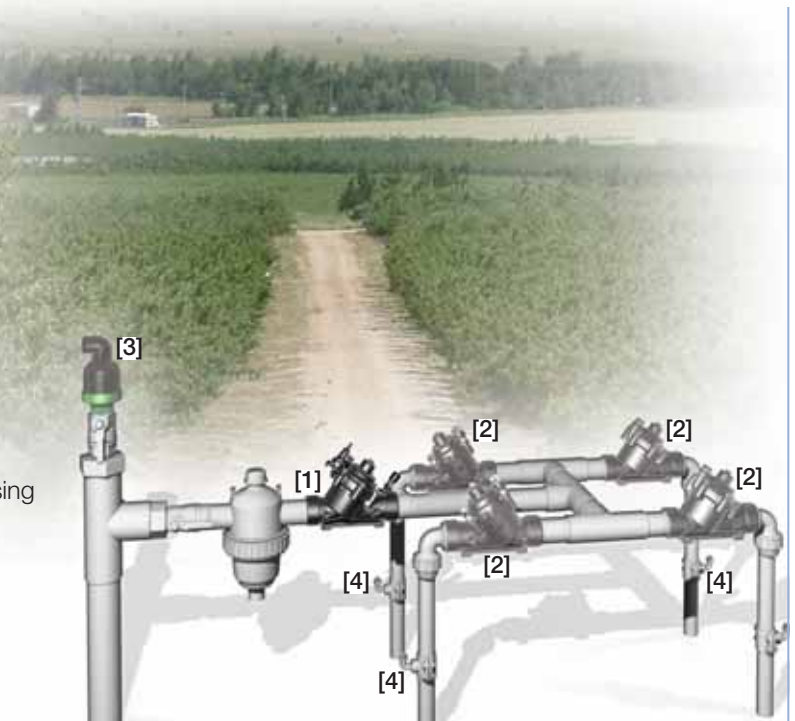
Typical Applications

- Computerized Irrigation Systems
- Line Fill-Up Control
- Multiple Independent Consumer Systems
- Systems Subject to Varying Supply Pressure
- Remote and/or Elevated Plots
- Energy Saving Irrigation Systems
- Distribution Centers

[1] BERMAD Model IR-170-55-bD opens in response to an electric signal, protects supply system from excessive flow, and limits lateral and distribution line fill-up.
[2] BERMAD Solenoid Controlled Valve Model IR-110-N1-2W
[3] BERMAD Air Valve Model ARA-A-P-P
[4] BERMAD Vacuum Breaker Model ½"-ARV

BERMAD Irrigation
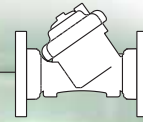
IR-170-55-bD
For full technical details, refer to Engineering Section.

100 Series hYflow
Flow Control

Technical Specifications

Dimensions and Weights

Pattern		Angle	Y (Oblique)			
Size	DN Inch	80-T 3-T	50-T 2-T	65-T* 21/2-T*	80-T 3-T	80L-T 3L-T
L (L1)	mm	187 (130)	230	230	298	300
	inch	7.4 (5.1)	9.1	9.1	11.7	11.8
H (Hf)	mm	235 (245)	170 (185)	170 (185)	180 (195)	240
	inch	9.3 (9.6)	6.7 (7.3)	6.7 (7.3)	7.1 (7.7)	9.5
C	mm	53	140	140	140	180
	inch	2.1	6	6	6	8
h	mm	117	40	40	50	60
	inch	4.6	1.6	1.6	2.0	2.4
A; B	mm	320	135	135	190	190
	inch	12.6	6	6	8	8
Weight	Kg	1.6	1.35	1.4	1.6	3.0
	ib.	3.5	3.0	3.1	3.5	6.6

* 2$\frac{1}{2}$"; DN65 Male Thread BSP-F, for PVC glue Unions.
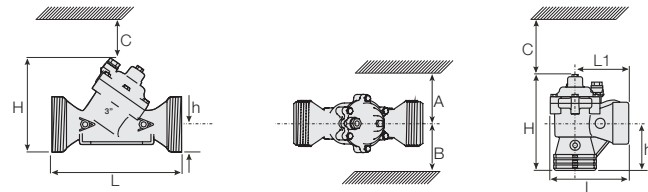
Technical Data

Valve Configurations & Size:
Oblique: 2, 2½, 3, 3L 4 & 6"; DN50, 65, 80, 80L, 100 & 150
Angle: 3"; DN80

End Connections:
Threaded: 2, 2½, 3 & 3"L; DN50, 65, 80 & 80L
Flanged: 3, 3L, 4, & 6"; DN80, 80L, 100 & 150
Grooved: 6"; DN150

Pressure Rating: 10 bar; 145 psi
Operating Pressure Range: 0.35-10 bar; 5-145 psi
Setting Range: ±20% from valve predetermined flow
The "Differential Pressure Duct" is pre-determined in accordance with the desired flow.

Materials:
Body, Cover and Plug: Glass-Filled Nylon
Diaphragm: NR, Nylon Fabric Reinforced
Seals: NR
Spring: Stainless Steel
Cover Bolts: Stainless Steel
Control Accessories: Plastic
Tubing and Fittings: Plastic

Solenoid Voltage Range:
S-390 & S-400: 24 VAC, 24 VDC
S-392 & S-402: 9-20 VDC, Latch
S-982 & S-985: 12-50 VDC, Latch
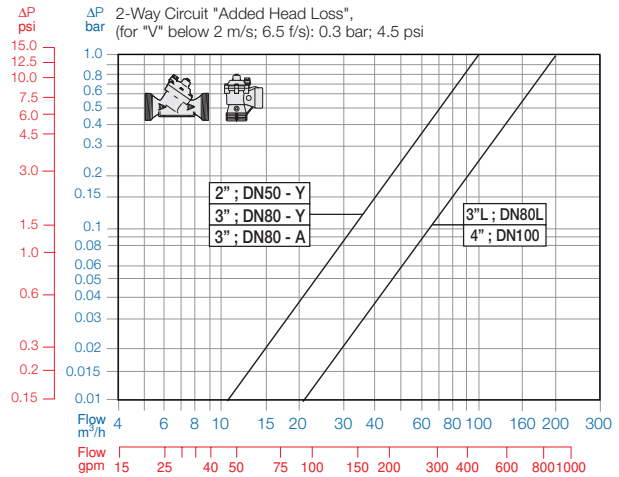Other voltages available.

Flow Chart

2-Way Circuit "Added Head Loss", (for "V" below 2 m/s; 6.5 f/s): 0.3 bar; 4.5 psi

2" ; DN50 - Y
3" ; DN80 - Y
3" ; DN80 - A
3"L ; DN80L
4" ; DN100

Operation

The Shuttle Valve **[1]** hydraulically connects the Solenoid **[2]** or the Flow Pilot **[3]** to the Valve Control Chamber **[4]**. Pressure Differential **[ΔP]** across the Differential Pressure Duct **[5]** is in direct proportion to demand. When the solenoid is closed, the Flow Pilot, continuously sensing **[ΔP]**, commands the Valve to throttle closed should demand rise above setting. In response to an electric signal the solenoid switches, directing line pressure through the shuttle valve into the control chamber, and thereby causing the main Valve to shut. The solenoid also features local manual closing.

How to Order

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

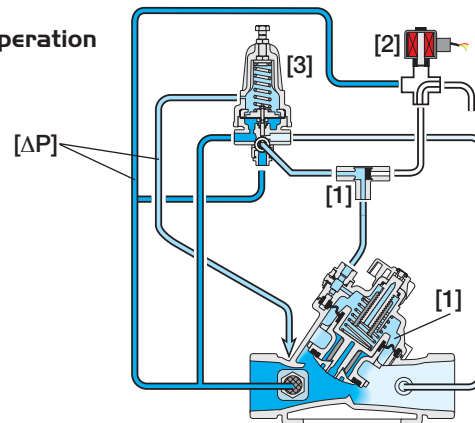| Sector	Size	Primary Feature	Additional Feature	Pattern	Construction Materials	End Connections	Control Type	Voltage -Main Valve Position	Additonal Attributes
IR	2-4"	170	55	Y	P	FF	2W/3W	4AC	bD

Other sizes available on request.

Oblique	Y
Angle (3"; DN80 Only)	A

Threaded BSP (Female)	BP
Threaded NPT (Female)	NP
Plastic Flanges*	FF
Metal Flanges* ("Corona")	CC

* Comply to: ISO PN10, ANSI #125/150, Jis K-10, BS-D

9VDC	– Latch	9DS
12VDC	– Latch	1DS
24VDC	– N.C.	4DC
24VDC	– N.O.	4DC
24VAC	– N.C.	4AC
24VAC	– N.O.	4AO
24VAC, Lightning Proof	– N.C.	4RC
24VAC, Lightning Proof	– N.O.	4RO

Other electrical ratings available on request.

Servo	b
Differential Pressure Duct	D

Other attributes available on request