

FLOW CONTROL VALVE

With Solenoid Control

Model IR-170-55-Db

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.



[1] BERMAD Model IR-170-55-Db opens in response to electric signal, protects supply system from excessive flow, limits lateral and distribution line fill-up, and reduces their operating pressure

Features & Benefits

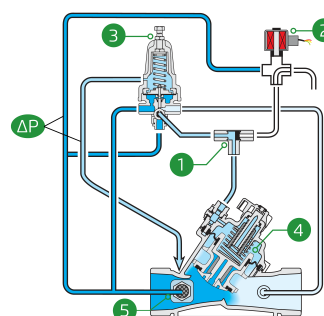
- Line Pressure Driven, Electrically Controlled On/Off
 - Limits fill-up rate and consumer excessive demand
- Adjustable Servo Flow Pilot Controlled
 - Dynamic integrated needle valve
 - Easy flow setting
- Engineered Composite Valve with Industrial Grade Design
 - Highly durable, chemical and cavitation resistant
 - No internal bolts and nuts
- hYflow 'Y' Valve Body with "Look Through" Design
 - Ultra-high flow capacity at 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

- Automated 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

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.



All images in this catalog are for illustration only



Technical Data

Pressure Rating:
150 psi

Operating Pressure Range:
7-150 psi

Materials

Body & Cover:
Polyamide 6 & 30% GF

Diaphragm:
NR, Nylon fabric reinforced

Spring:
Stainless Steel

Control Loop Accessories

FC Pilot: PC-SD-A-P

Pilot Spring Range:

Spring	Spring Color	Setting range
J	Green	3-25 psi

Tubing and Fittings:
Polyethylene and Polypropylene

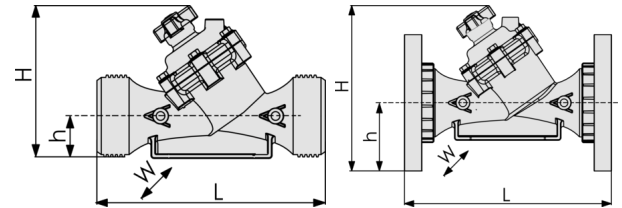
AC solenoid:
S-390-T-3W P.B.-24 V AC

DC latch solenoid:
S-392-T-3W-9-20 V DC Latch

**For other solenoids please consult [BERMAD](#)*

Technical Specifications

For other patterns and end connection types,
Please refer to [BERMAD](#) full engineering page.



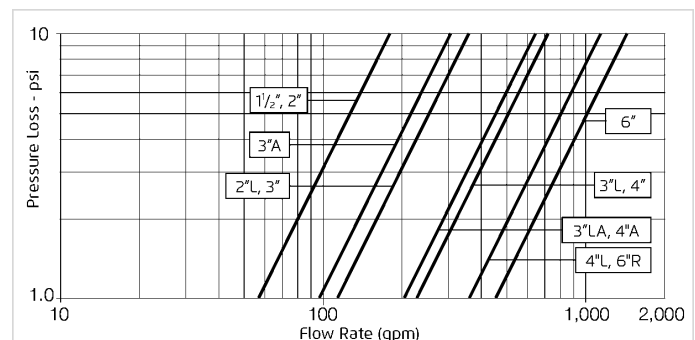
Size	Pattern	End Connection	Weight (Lb)	L (In)	H (In)	h (In)	W	CCDV (Gal)	CV
2" ; DN50	Oblique	Threaded	2.7	9 1/8	6 3/8	1 3/8	3 3/8	0.026	58
2"L ; DN50L	Oblique	Threaded	3	9 1/8	7 3/8	1 3/8	5 3/8	0.033	116
2 1/2" ; DN65	Oblique	Threaded	3	9 1/8	7 3/8	1 3/8	5 3/8	0.033	116
3" ; DN80	Oblique	Threaded	4	11 3/8	7 3/8	2 1/8	5 3/8	0.033	116
3" ; DN80	Oblique	Plastic Flanges	6	12 3/8	9 3/8	4	7 3/8	0.033	116
3" ; DN80	Oblique	Metal Flanges	10	12 3/8	9 3/8	4	7 3/8	0.033	116
3"L ; DN80L	Oblique	Threaded	7	11 3/8	9 3/8	2 3/8	6 3/8	0.136	231
3"L ; DN80L	Oblique	Plastic Flanges	8.2	12 3/8	12 1/2	4	7 3/8	0.136	231
3"L ; DN80L	Oblique	Metal Flanges	10.1	12 3/8	12 1/2	4	7 3/8	0.136	231
4" ; DN100	Oblique	Plastic Flanges	10	13 3/8	13	4 1/2	8 3/8	0.136	231
4" ; DN100	Oblique	Metal Flanges	16.3	13 3/8	13	4 1/2	8 3/8	0.136	231
4"L ; DN100L	Oblique	Plastic Flanges	20.2	17 1/2	13 3/8	4 1/2	9	0.253	393
4"L ; DN100L	Oblique	Metal Flanges	24.7	17 1/2	13 3/8	4 1/2	9	0.253	393
6"R ; DN150R	Oblique	Metal Flanges	36	18 1/2	14 3/8	5 3/8	11 3/8	0.253	393

CCDV = Control Chamber Displacement Volume • **Threaded** = BSP & NPT are available. External thread is available for 2" and 2 1/2" only. • Other End Connections are available on request. For dimensions and weights of adapters or valves with adapters please consult with customer service.

Additional Features

Code	Description	Size Range
M	Flow Stem (*Exclude sizes 4"L, 6"R)	1 1/2"-6"
5	Plastic Test Point	1 1/2"-4"
Z	Manual Selector	1 1/2"-4"L
V3	Victaulic PVC Adaptors 3"	3"
V4	Victaulic PVC Adaptors 4"	4"

Flow Chart



2-Way circuit "Added Head Loss" (for "V" below 6.5 f/s): 4.5 psi

Differential Pressure & Flow Calculation

$$\Delta P = \left(\frac{Q}{CV} \right)^2$$

$CV = \text{gpm @ } \Delta P \text{ of 1 psi}$
 $Q = \text{gpm}$
 $\Delta P = \text{psi}$