



PRESSURE REDUCING VALVE

With 2/3-Way (Servo) Control & 3-Way Trio Solenoid Control

Model IR-120-55-b

The BERMAD Model IR-120-55-b is a hydraulically operated, diaphragm actuated control valve that accurately reduces higher upstream pressure to very low and stable preset downstream pressure regardless of fluctuating demand or varying upstream pressure. It either opens or shuts in response to an electric signal.



[1] BERMAD Model IR-120-55-b opens in response to electric signal, and establishes reduced pressure zone protecting laterals and distribution line.

Features & Benefits

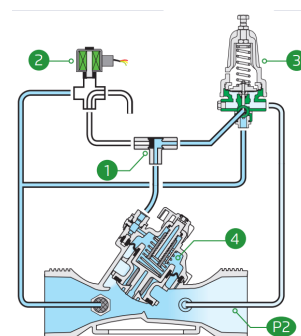
- Line Pressure Driven, Electrically Controlled On/Off
 - Protects downstream systems
- Pressure Reducing Servo Pilot Controlled
 - Dynamic integrated needle valve
 - Settable to 0.5 bar; 7 psi
 - Very low hysteresis
- Engineered Composite Valve with Industrial Grade Design
 - Highly durable, chemical 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 opening and actuation pressure
 - Prevents diaphragm erosion and distortion

Typical Applications

- Automated Irrigation Systems
- Drip-Tape Systems
- Low Set Pressure Applications
- Remote and/or Elevated Plots
- Distribution Centers
- Low Supplied Pressure Irrigation Systems
- Energy Saving Irrigation Systems

Operation:

The Shuttle Valve [1] hydraulically connects the Solenoid [2] or the Pressure Reducing Servo Pilot (PRSP) [3] to the Valve Control Chamber [4]. When the solenoid is closed, the PRSP commands the Valve to throttle closed, preventing Downstream Pressure [P2] from rising above pilot setting. In response to an electric signal, the solenoid switches, directing line pressure through the shuttle valve into the control chamber. This causes the Valve to shut. The solenoid also features local manual closing.





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

PR Pilot: PC-S-A-P

Pilot Spring Range:

Spring	Spring Color	Setting range
J	Green	3-25 psi
K	Gray	7-43 psi

Standard spring - marked in bold

Tubing and Fittings:

Polyethylene and Polypropylene

AC solenoid:

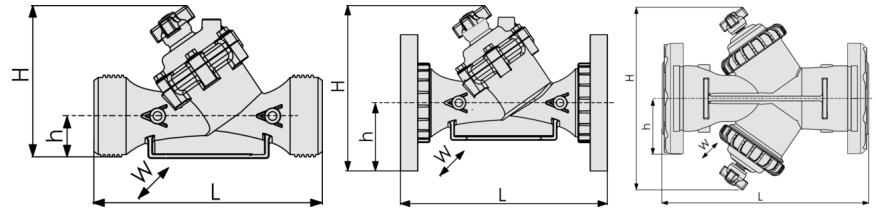
S-390-T-3W P.B.-24 V AC

DC latch solenoid:

S-392-T-3W-9-20 V DC Latch

Technical Specifications

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

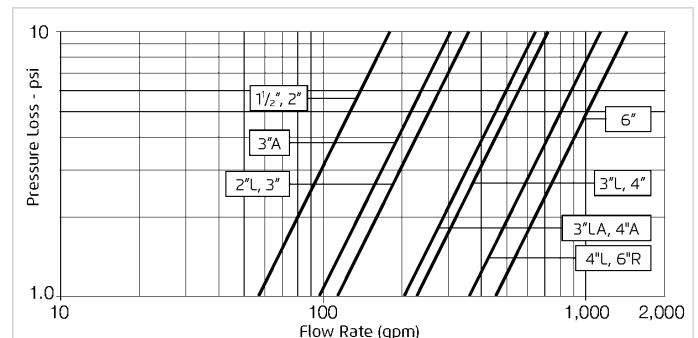


Size	Pattern	End Connection	Weight (Lb)	L (In)	H (In)	h (In)	W	CCDV (Gal)	CV
1½" ; DN40	Oblique	Threaded	2.4	7⅞	6⅞	1⅞	3⅞	0.026	58
2" ; DN50	Oblique	Threaded	2.7	9⅞	6⅞	1⅞	3⅞	0.026	58
2" L ; DN50L	Oblique	Threaded	3	9⅞	7⅞	1⅞	5⅞	0.033	116
2½" ; DN65	Oblique	Threaded	3	9⅞	7⅞	1⅞	5⅞	0.033	116
3" ; DN80	Oblique	Threaded	4	11⅞	7⅞	2⅞	5⅞	0.033	116
3" ; DN80	Oblique	Plastic Flanges	6	12⅞	9⅞	4	7⅞	0.033	116
3" ; DN80	Oblique	Metal Flanges	10	12⅞	9⅞	4	7⅞	0.033	116
3" L ; DN80L	Oblique	Threaded	7	11⅞	9⅞	2⅞	6⅞	0.136	231
3" L ; DN80L	Oblique	Plastic Flanges	8.2	12⅞	12½	4	7⅞	0.136	231
3" L ; DN80L	Oblique	Metal Flanges	10.1	12⅞	12½	4	7⅞	0.136	231
4" ; DN100	Oblique	Plastic Flanges	10	13⅞	13	4½	8⅞	0.136	231
4" ; DN100	Oblique	Metal Flanges	16.3	13⅞	13	4½	8⅞	0.136	231
4" L ; DN100L	Oblique	Plastic Flanges	20.2	17⅞	13⅞	4½	9	0.253	393
4" L ; DN100L	Oblique	Metal Flanges	24.7	17⅞	13⅞	4½	9	0.253	393
6" R ; DN150R	Oblique	Metal Flanges	36	18½	14⅞	5⅞	11⅞	0.253	393
6" ; DN150	Boxer	Grooved	26	19	15⅞	4	18⅞	2x0.136	462
6" ; DN150	Boxer	Plastic Flanges	27.6	19⅞	15⅞	5⅞	18⅞	2x0.136	462

Additional Features

Code	Description	Size Range
M	Flow Stem (*Exclude sizes 4"L, 6"R)	1½"-6"
5	Plastic Test Point	1½"-4"
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 = gpm @ ΔP of 1 psi

Q = gpm

ΔP = psi