



PRESSURE REDUCING & SUSTAINING VALVE

Model IR-123-55-3W-X

The BERMAD Model IR-123-55-3W-X is a hydraulically operated, diaphragm actuated control valve that sustains minimum preset upstream (back) pressure and reduces downstream pressure to a constant preset maximum. It either opens or shuts in response to an electric signal.



- [1] BERMAD Model IR-123-55-3W-X opens in response to electric signal, sustains supply pressure, controls laterals and distribution line fill-up, and reduces their operating pressure.
- [2] Electromagnetic Flow Meter
- [3] Combination Air Valve Model IR-C10
- [4] Smart Irrigation Controller-OMEGA
- [5] Hydraulic Control Valve Model IR-105-Z
- [6] Kinetic Air Valve Model IR-K10

Features & Benefits

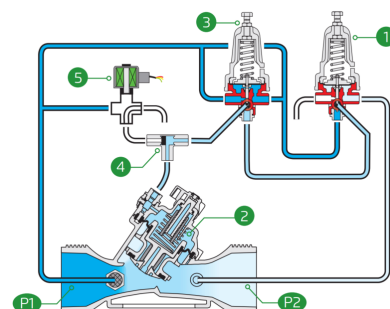
- Line Pressure Driven, Electrically Controlled On/Off
 - Protects downstream systems
 - Prioritizes pressure zones
 - Controls system fill-up
 - Sustains upstream line pressure
- Engineered Composite Valve with Industrial Grade Design
 - Highly durable, chemical and cavitation resistant
 - No internal 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
- User-Friendly Design
 - Easy pressure setting
 - Simple in-line inspection and service

Typical Applications

- Automated Irrigation Systems
- Line Fill-Up Control Solutions
- Pressure Reducing Systems
- Remote and/or Elevated Plots
- Infield Filters Backwash Pressure Sustaining
- Energy Saving Irrigation Systems

Operation:

The Pressure Reducing Pilot (PRP) [1] is hydraulically connected to the Valve Control Chamber [2] through the Pressure Sustaining Pilot (PSP) [3] and the Shuttle Valve [4]. The PSP commands the valve to throttle closed should Upstream Pressure [P1] drop below setting. When [P1] rises above setting, the PSP switches and allows the PRP to control the valve, commanding it to reduce Downstream Pressure [P2]. In response to an electric signal, the Solenoid [5] switches and pressurizes the shuttle valve, which then blocks the pilots and transmits the line pressure into the control chamber, shutting the valve.





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-SHARP-X-P

PS Pilot: PC-SHARP-X-P

Pilot Spring Range:

Spring	Spring Color	Setting range
J	Green	3-25 psi
K	Gray	7-43 psi
N	Natural	12-95 psi
V	Blue & White	15-150 psi

Standard spring - marked in bold

Tubing and Fittings:

Polyethylene and Polypropylene

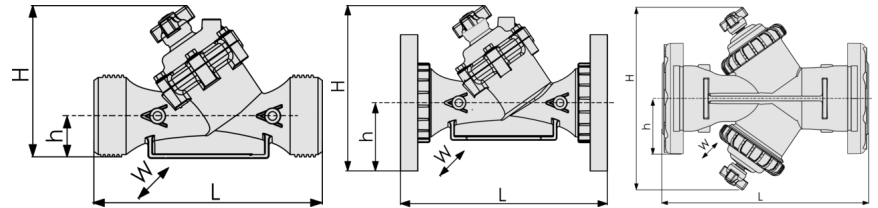
DC latch solenoid:

S-982-3W P.B.

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

Technical Specifications

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



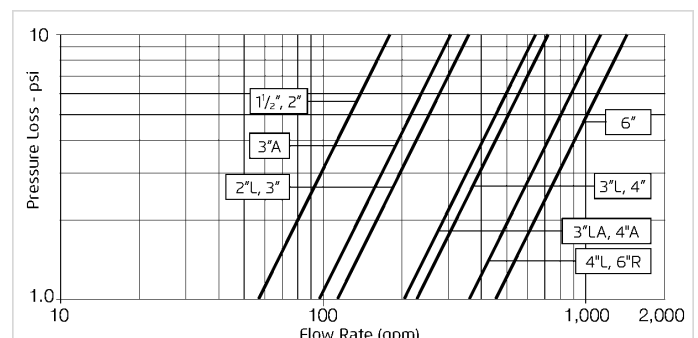
Size	Pattern	End Connection	Weight (Lb)	L (in)	H (in)	h (in)	W	CCDV (Gal)	CV
1½" ; DN40	Oblique	Threaded	2.4	7⅞	6⅞	1⅞	3⅞	0.026	58
2" ; DN50	Oblique	Threaded	2.7	9⅞	6⅞	1⅞	3⅞	0.026	58
2"L ; DN50L	Oblique	Threaded	3	9⅞	7⅞	1⅞	5⅞	0.033	116
2½" ; DN65	Oblique	Threaded	3	9⅞	7⅞	1⅞	5⅞	0.033	116
3" ; DN80	Oblique	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	17½	13⅞	4½	9	0.253	393
4"L ; DN100L	Oblique	Metal Flanges	24.7	17½	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

CCDV = Control Chamber Displacement Volume • **Threaded** = BSP & NPT are available. External thread is available for 2" and 2½" 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)	1½"-6"
S	Plastic Test Point	1½"-4"
Z	Manual Selector	1½"-4"L
V3	Victaulic PVC Adaptors 3"	3"
V4	Victaulic PVC Adaptors 4"	4"

Flow Chart



Differential Pressure & Flow Calculation

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

Cv = gpm @ ΔP of 1 psi
 Q = gpm
 ΔP = psi