

PRESSURE REDUCING VALVE - DOUBLE CHAMBER

Model IR-120-DC-55-3W-X

The BERMAD Model IR-120-DC-55-3W-X Pressure Reducing Control Valve with solenoid control is a double chambered, hydraulically operated, diaphragm actuated control valve that reduces higher upstream pressure to lower constant downstream pressure and opens fully upon line pressure drop, regardless of fluctuating demand, and opens fully upon line pressure drop. The valve either opens or shuts in response to an electric signal. The Double Chamber Valve is a high performance valve, specially designed for quick response and challenging regulation requirements.



- [1] BERMAD Model IR-120-DC-55-3W-XZ opens in response to electric signal, and establishes reduced pressure zone protecting laterals and distribution line.
- [2] Combination Air Valve Model IR-C30
- [3] Combination Air Valve Model IR-C10
- [4] Hydrometer Model IR-900-M0-Magnetic Drive
- [5] Smart Irrigation Controller-OMEGA

Features & Benefits

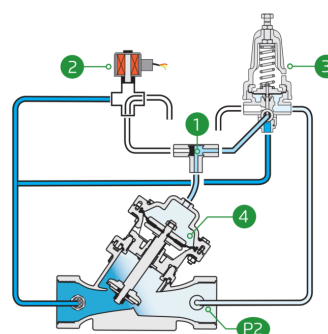
- Hydraulic Pressure Control with Solenoid Control
 - Line pressure driven
 - Protects downstream systems
 - Opens fully upon line pressure drop
 - Electrically controlled On/Off
- Double Chamber Design
 - Full powered opening and closing
 - Decreased pressure loss
 - Low throttling noise
 - Non-slam closing characteristic
 - Protected diaphragm
- Engineered Composite Valve with Industrial Grade Design
- hYflow 'Y' Valve Body with "Look Through" Design
 - Ultra-high flow capacity at low pressure loss
- User-Friendly Design
 - Simple in-line inspection and service

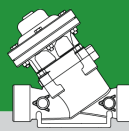
Typical Applications

- Automated Irrigation Systems
- Pressure Reducing Systems
- Systems Subject to Varying Supply Pressure
- Remote and/or Elevated Plots
- Distribution Centers
- Energy Saving Irrigation Systems

Operation:

The Shuttle Valve [1] hydraulically connects the Solenoid [2] or the Pressure Reducing Pilot (PRP) [3] to the Valve Control Chamber [4]. When the solenoid is closed, the PRP commands the Valve to throttle closed should Downstream Pressure [P2] rise above setting and to open fully when [P2] is below setting. In response to an electric signal, the solenoid switches, directing line pressure through the shuttle valve into the control chamber, shutting the Valve. The solenoid also features local manual closing.





Technical Data

Pressure Rating:

10 bar

Operating Pressure Range:

0.5-10 bar

Materials

Body & Cover:

Polyamide 6 & 30% GF

Diaphragm:

NR, Nylon fabric reinforced

Spring:

Stainless Steel

Control Loop Accessories

PR Pilot: PC-SHARP-X-P

Pilot Spring Range:

Spring	Spring Color	Setting range
J	Green	0.2-1.7 bar
K	Gray	0.5-3.0 bar
N	Natural	0.8-6.5 bar
V	Blue & White	1.0-10.0 bar

Standard spring - marked in bold

Tubing and Fittings:

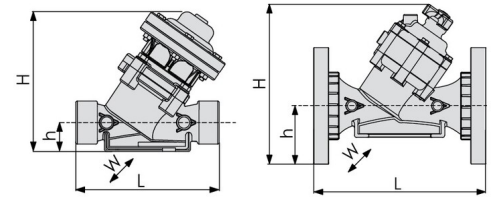
Polyethylene and Polypropylene

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

Technical Specifications

For other patterns and end connection types,

Please refer to [BERMAD](#) full engineering page.



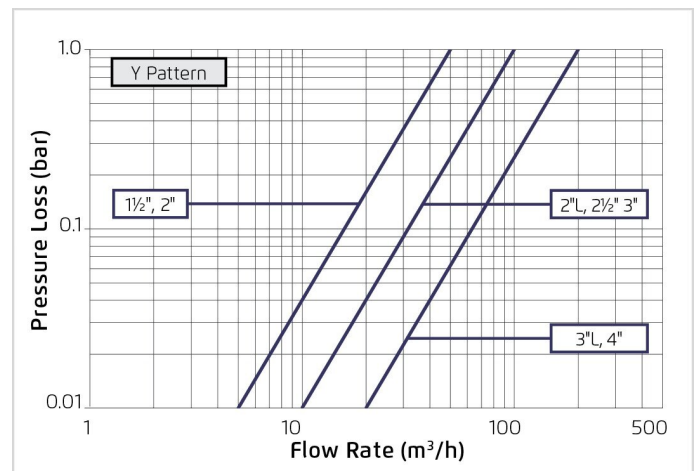
Size	Pattern	End Connection	Weight (Kg)	L (mm)	H (mm)	h (mm)	W	CCDV (Lit)	KV
1½" ; DN40	"Y" (pattern)	Threaded	1.7	200	194	40	126	0.13	50
2" ; DN50	"Y" (pattern)	Threaded	1.7	230	196	40	126	0.13	50
2"L ; DN50L	"Y" (pattern)	Threaded	2.2	230	220	43	135	0.17	100
2½" ; DN50L	"Y" (pattern)	Threaded	2.2	230	220	43	135	0.17	100
3" ; DN80	"Y" (pattern)	Threaded	2.3	298	232	55	135	0.17	100
3" ; DN80	"Y" (pattern)	Metal Flanges	5.1	308	277	100	200	0.17	100
3" ; DN80	"Y" (pattern)	Plastic Flanges	3.2	308	277	100	200	0.17	100
3"L ; DN80L	"Y" (pattern)	Threaded	6	338	356	60	210	0.55	200
3"L ; DN80L	"Y" (pattern)	Metal Flanges	7.4	343	395	100	210	0.55	200
3"L ; DN80L	"Y" (pattern)	Plastic Flanges	6.5	343	395	100	210	0.55	200
4" ; DN100	"Y" (pattern)	Metal Flanges	9.5	364	407	112	224	0.55	200
4" ; DN100	"Y" (pattern)	Plastic Flanges	7.6	364	407	112	224	0.55	200

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
Z	Manual Selector	1½"-4" / DN40-100
K/L	Auxiliary Closing / Lifting Spring (for 100-DC models only)	1½"-4" / DN40-100
5	Plastic Test Point	1½"-4" / DN40-100
7	½" Anti Vacuum at Valve Downstream	1½"-4" / DN40-100

Flow Chart



Differential Pressure & Flow Calculation

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

Kv = m³/h @ ΔP of 1 bar

Q = m³/h

ΔP = bar