



# SOLENOID CONTROL VALVE, DOUBLE CHAMBER

## Model IR-110-DC-X

The BERMAD Model IR-110-DC-X Solenoid Controlled Valve is a double chambered, hydraulically operated, diaphragm actuated control valve that opens and closes drip-tight in response to an electric signal.

The valve comprises two major components: the body and the actuator assembly. The actuator assembly is removable from the body as an integral unit. It consists of both upper and lower control chambers, providing Isolated and protected diaphragm

The double chambered valve operation is independent of valve differential pressure. This develops maximum power, ensuring immediate valve response combined with inherent soft closing

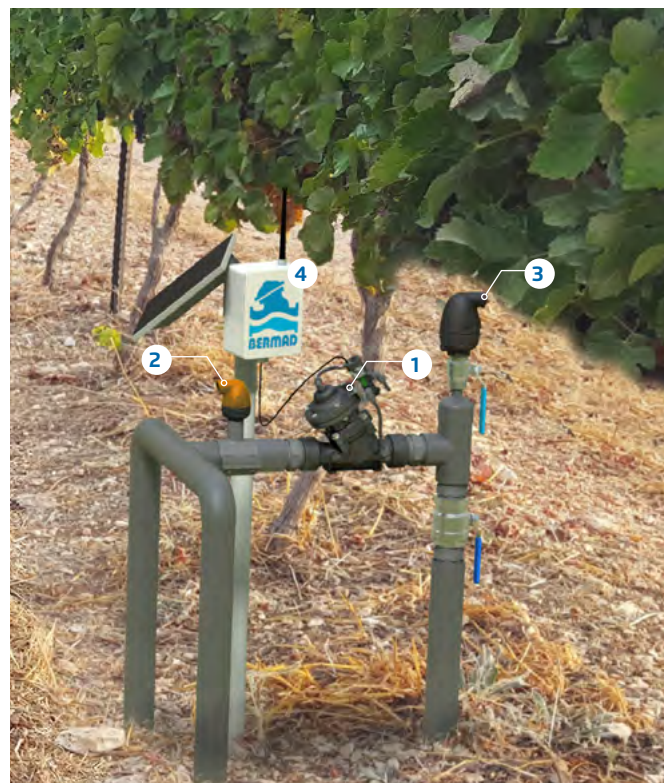


## Features & Benefits

- Hydraulic Control Valve with Solenoid Control.
  - Line Pressure Driven .
  - Electrically controlled On/Off.
  - Suitable also for remote and/or elevated systems
- Double chamber design
  - Full powered opening and closing.
  - Non-slam closing characteristic.
  - Protected diaphragm
- Engineered Plastic Valve with Industrial Grade Design
  - hYflow 'Y' Valve Body with "Look Through" Design.
  - Ultra-high flow capacity - Low pressure loss
- User-Friendly Design
  - Simple in-line inspection and service. Easy maintenance
  - Simple in-line conversion from single to double chamber

## Typical Applications

- Computerized Irrigation Systems
- Drip Systems
- Sprinklers & Micro-Sprinklers
- Greenhouses Irrigation
- Low Pressure Systems
- End-line Flushing (Distribution Line, Irrigation Machine) - "Flush-'n-Stop"
- Proportional Pressure Reducing
- Non-slam Closing (or moderate closing)
- Active Double Chambered (B) - full Powered Opening & Closing



- [1] BERMAD Model IR-110-DC-X Opens in response to electric signal
- [2] BERMAD Kinetic Air Valve Model IR-K10
- [3] BERMAD Combination Air Valve Model IR-C10
- [4] BERMAD RF RTU Battery Operated with Solar Kit

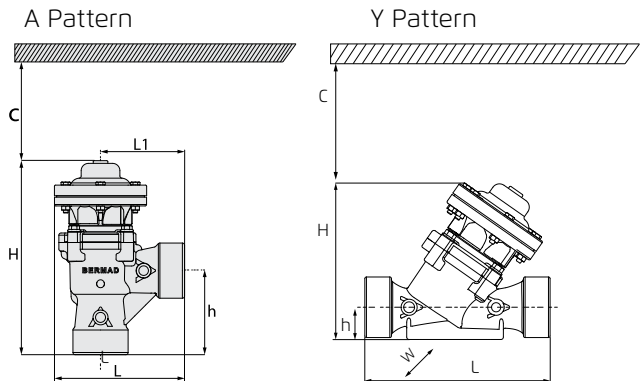


## Technical Specifications

### Dimensions and Weights

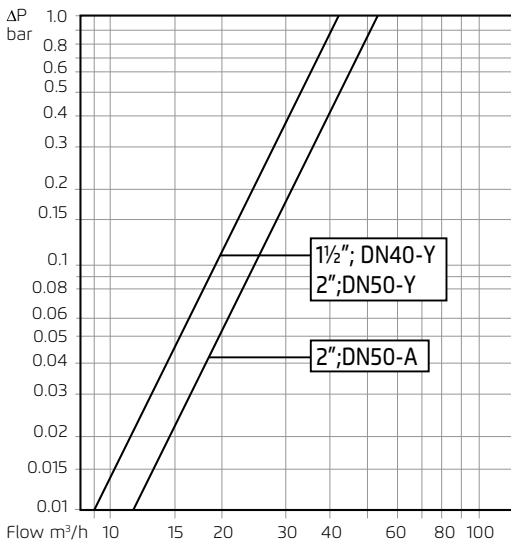
Size	DN	50-A	40-Y	50-Y
	Inch	2-A	1½-Y	2-Y
L	mm	178	200	200
L1	mm	114	-	-
H	mm	267	196	196
W	mm	126	126	126
h	mm	112	40	40
Weight	Kg	1.7	1.7	1.7
CCDV	Liter	0.13	0.13	0.13

Note: CCDV = Control Chamber Displacement Volume



C = Half of H

## Flow Chart



Size	DN	Flow Coefficient		
		A	Y	50
50	2	52	42	42

Valve flow coefficient, Kv or Cv  $\Delta P = \left( \frac{Q}{K_v; C_v} \right)^2$

Where:

Kv = Valve flow coefficient

Cv = Valve flow coefficient (flow in gpm at Diff. Press. 1 psi)

Q = Flow rate (m³/h; gpm)

P = Differential pressure (bar; psi)

**Cv = 1.155 Kv**

## Technical Data

**Patterns:** Oblique (Y): DN40-DN50; 1½"-2"

Angle (A): DN50; 2"

**End Connections:** BSP or NPT

**Pressure Rating:** 10 bar; 145 psi

**Operating Pressure Range:** 0.5-10 bar; 7-145 psi

**Temperature Range:** Water up to 50°C; 82°F

## Standard Materials:

**Body:** Glass-Filled Nylon

**Actuator:** Plastic & Stainless Steel

**Diaphragm:** Nylon Fabric Reinforced Natural Rubber

**Seals:** NBR

**Spring:** Stainless Steel

**Cover Bolts:** Stainless Steel

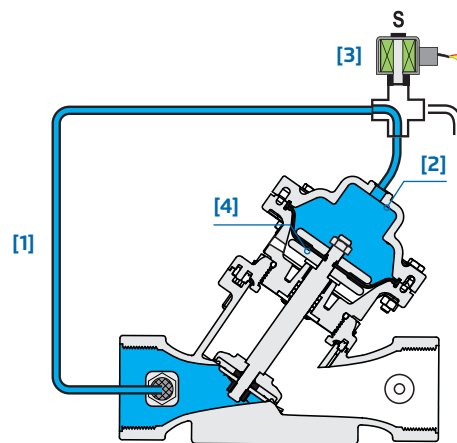
## Solenoid Voltage Range:

**S-390 & S-400:** 24 VAC, 24 VDC

**S-392 & S-402:** 9-20 VDC, Latch

**S-982 & S-985:** 12-50 VDC, Latch

## Operation



Line Pressure [1] is applied to the Control Chamber [2], through the opened 3-Way Solenoid [3]. This creates superior closing force that moves the Diaphragm Assembly [4] to a closed position. Energizing the Solenoid causes it to switch, discharging pressure from the control chamber and thereby opening the main Valve.

