

# SOLENOID CONTROLLED VALVE

## Model IR-110-3W-X

The BERMAD Solenoid Controlled Valve is a hydraulically operated, diaphragm actuated control valve that opens and shuts in response to an electric signal.



- [1] BERMAD Model IR-110-3W-X opens in response to an electric signal.
- [2] Kinetic Air Valve Model K10
- [3] Combination Air Valve Model C10
- [4] Smart Irrigation Controller-OMEGA

### Features & Benefits

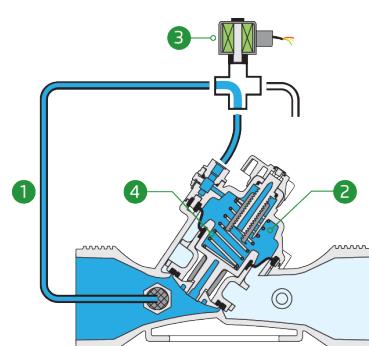
- Hydraulic Control Valve
  - Line pressure driven
  - Electrically controlled On/Off
- Engineered Composite Valve with Industrial Grade Design
  - Adaptable on-site to a wide range of end connection
  - Articulated flange connections that eliminate line bending and hydraulic stresses
  - Highly durable, chemical and cavitation resistant
- hYflow 'Y' Valve Body with "Look Through" Design
  - Ultra-high flow capacity at low pressure loss
- Utilized "Flexible Super Travel" (FST) Diaphragm and Guided Plug
  - Smooth closing
  - Requires low actuation pressure
  - Prevents diaphragm erosion and distortion
- User-Friendly Design
  - Simple in-line inspection and service

### Typical Applications

- Automated Irrigation Systems
- Remote and/or Elevated Systems
- Distribution Centers
- Low Supplied Pressure Irrigation Systems
- Energy Saving Irrigation Systems

### Operation:

Line Pressure [1] is applied to the Control Chamber [2] through the opened 3-Way Solenoid [3]. This creates a superior closing force that moves the Diaphragm Assembly [4] toward a closed position. Closing the solenoid causes it to discharge pressure from the control chamber, thereby opening the valve.





## 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

**Tubing and Fittings:**  
Polyethylene and  
Polypropylene

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

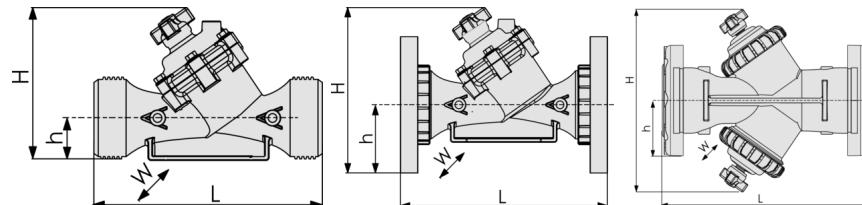
**AC solenoid:**  
S-390-T-3W

**DC solenoid:**  
S-390-T-3W

**DC latch solenoid:**  
S-982-3W P.B.

## Technical Specifications

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



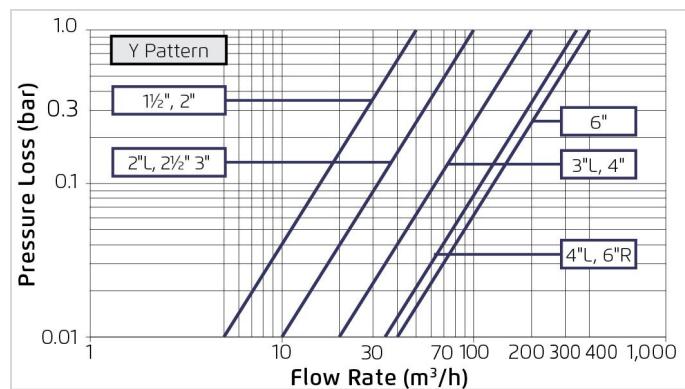
Size	Pattern	End Connection	Weight (Kg)	L (mm)	H (mm)	h (mm)	W	CCDV (Lit)	KV
1½" ; DN40	Oblique	Threaded	1.1	200	173	40	97	0.12	50
2" ; DN50	Oblique	Threaded	1.2	230	173	40	97	0.12	50
2½" ; DN50L	Oblique	Threaded	1.5	230	187	43	135	0.15	100
2½" ; DN65	Oblique	Threaded	1.5	230	187	43	135	0.15	100
3" ; DN80	Oblique	Threaded	1.6	298	199	55	135	0.15	100
3" ; DN80	Oblique	Plastic Flanges	2.5	308	244	100	200	0.15	100
3" ; DN80	Oblique	Metal Flanges	4.4	308	244	100	200	0.15	100
3½" ; DN80L	Oblique	Threaded	3	298	278	60	168	0.62	200
3½" ; DN80L	Oblique	Plastic Flanges	3.7	308	317	100	200	0.62	200
3½" ; DN80L	Oblique	Metal Flanges	4.6	308	317	100	200	0.62	200
4" ; DN100	Oblique	Plastic Flanges	4.6	350	329	112	224	0.62	200
4" ; DN100	Oblique	Metal Flanges	7.4	350	329	112	224	0.62	200
4" ; DN100L	Oblique	Plastic Flanges	9.2	442	340	112	226	1.15	340
4" ; DN100L	Oblique	Metal Flanges	11.2	442	340	112	226	1.15	340
6"R ; DN150R	Oblique	Metal Flanges	16.5	470	377	149	287	1.15	340
6" ; DN150	Boxer	Grooved	11	480	387	100	475	2x0.62	400
6" ; DN150	Boxer	Plastic Flanges	12.5	504	387	143	475	2x0.62	400

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"R, 6"R)	1½"-6" / DN40-150
5	Plastic Test Point	1½"-4" / DN40-100
Z	Manual Selector	1½"-4" / DN40-100
V3	Victaulic PVC Adaptors 3"	3" / DN80
V4	Victaulic PVC Adaptors 4"	4" / DN100

## Flow Chart



## Differential Pressure & Flow Calculation

$$\Delta P = \left( \frac{Q}{Kv} \right)^2 \quad Kv = m^3/h @ \Delta P of 1 bar$$

$$Q = m^3/h \quad \Delta P = bar$$