



# 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

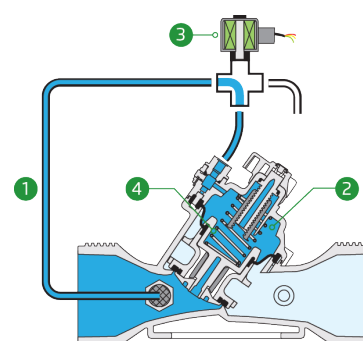
- Hydraulic Control Valve
  - Line pressure driven
  - Electrically controlled On/Off
- Engineered Composite Valve with Industrial Grade Design
  - Adaptable on-site to a wide range of end connection
  - Articulated flange connections that eliminate line bending and hydraulic stresses
  - Highly durable, chemical and cavitation resistant
- hYflow 'Y' Valve Body with "Look Through" Design
  - Ultra-high flow capacity at low pressure loss
- Unitized "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

#### AC solenoid:

S-390-T-3W

#### DC solenoid:

S-390-T-3W

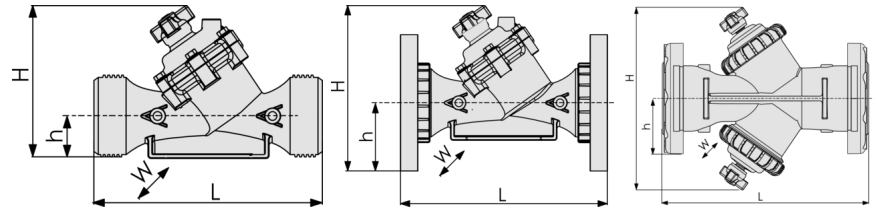
#### DC latch solenoid:

S-982-3W P.B.

*\*For other solenoids please consult [BERMAD](http://www.bermad.com)*

## Technical Specifications

For other patterns and end connection types, Please refer to [BERMAD](http://www.bermad.com) full engineering page.



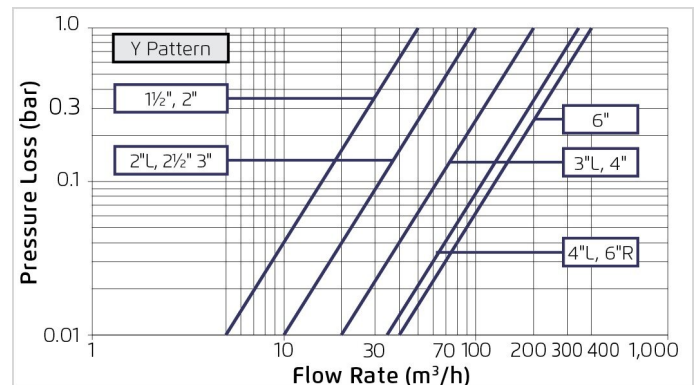
Size	Pattern	End Connection	Weight (Kg)	L (mm)	H (mm)	h (mm)	W	CCDV (Lit)	KV
1½" ; DN40	Oblique	Threaded	1.1	200	173	40	97	0.12	50
2" ; DN50	Oblique	Threaded	1.2	230	173	40	97	0.12	50
2"L ; DN50L	Oblique	Threaded	1.5	230	187	43	135	0.15	100
2½" ; DN65	Oblique	Threaded	1.5	230	187	43	135	0.15	100
3" ; 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
3"L ; DN80L	Oblique	Threaded	3	298	278	60	168	0.62	200
3"L ; DN80L	Oblique	Plastic Flanges	3.7	308	317	100	200	0.62	200
3"L ; 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"L ; DN100L	Oblique	Plastic Flanges	9.2	442	340	112	226	1.15	340
4"L ; 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"L, 6"R)	1½"-6" / DN40-150
S	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

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

$K_v = m^3/h$  @  $\Delta P$  of 1 bar

$Q = m^3/h$

$\Delta P = \text{bar}$