



# SOLENOID CONTROLLED VALVE

## Model IR-21T-2W-M

The BERMAD 2-Way Solenoid Controlled Valve with Trio integrated Open-Auto-Close manual selector, is a hydraulically operated, diaphragm actuated control valve with internal hydraulic Feed & Bleed control loop. The Trio Integrated selector allows for open or close, manually overriding the electric signal.

\*This valve is designated for irrigation use only and not for other uses! Manufacturer warranty is limited to the permitted use only.



[1] The BERMAD Model IR-21T opens and closes drip-tight in response to an electric signal, which causes the solenoid to open or close the valve's internal hydraulic loop.

### Features & Benefits

- Line Pressure Driven, Hydraulically Controlled On/Off
- Smooth Valve Opening and Closing
  - Accurate and stable regulation
  - Low operating pressure requirements
- Composite Hydro-Efficient Globe Valve
  - Unobstructed flow path
  - Single moving part
  - High flow capacity
  - Highly durable, chemical and cavitation resistant
- Unitized Flexible Diaphragm and Guided Plug
  - Prevents diaphragm erosion and distortion
- Fully Supported & Balanced Diaphragm
  - Requires low actuation pressure
- User-Friendly Design
  - Simple in-line inspection and service

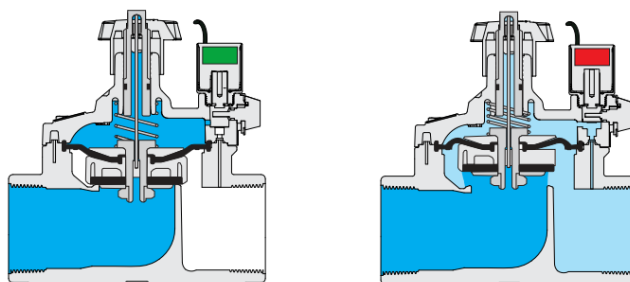
### Typical Applications

- Automated Irrigation Systems
- Drip Systems
- Greenhouses Irrigation
- Systems Subject to Varying Supply Pressure
- Landscape
- Energy Saving Irrigation Systems

### Operation:

**Closed Position:** The internal restriction continuously allows line pressure into the control chamber. The solenoid controls outflow from the control chamber. When the solenoid is closed it causes pressure to accumulate in the control chamber, thereby forcing the valve to close.

**Opened Position:** Opening the Solenoid releases more flow from the control chamber than the restriction can allow in. This causes the accumulated pressure in the control chamber to drop, enabling the line pressure acting on the plug to open the valve.





## Technical Data

### Pressure Rating:

150 psi

### Operating Pressure Range:

10-150 psi

### Materials

#### Body & Cover:

Polyamide 6 &amp; 30% GF

#### Diaphragm:

NBR

#### Spring:

Stainless Steel

### Control Loop Accessories

#### Tubing and Fittings:

Polyethylene and  
Polypropylene

#### AC solenoid:

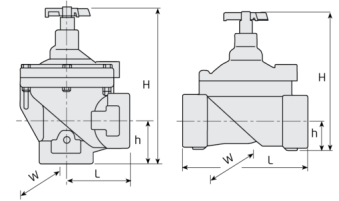
S-390-T-2W

#### DC latch solenoid:

S-392-T-2W

## Technical Specifications

For other end connection types,

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


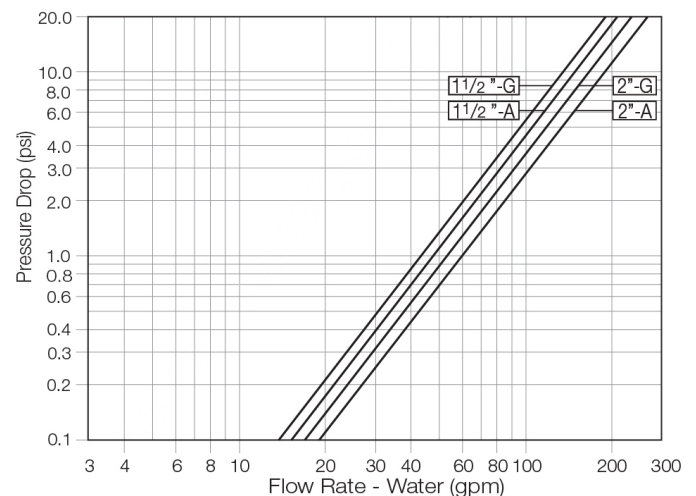
Size	Pattern	End Connection	Weight (Lb)	L (In)	H (In)	h (In)	W	CCDV (Gal)	CV
3/4" ; DN20	Globe	Threaded	0.8	4 3/8	4 3/8	7/8	3 1/8	0.003	10
1" ; DN25	Globe	Threaded	0.7	4 3/8	4 3/8	7/8	3 1/8	0.003	10
1 1/2" ; DN40	Globe	Threaded	2.2	6 3/8	7 1/8	1 3/8	5	0.016	43
1 1/2" ; DN40	Angle	Threaded	2.1	3 1/8	7 1/8	1 3/8	5	0.016	47
2" ; DN50	Globe	Threaded	2.4	6 3/8	12 3/8	1 1/2	5	0.016	54
2" ; DN50	Angle	Threaded	2	3 1/8	8 3/8	2 3/8	5	0.016	60

CCDV = Control Chamber Displacement Volume

### Additional Features

Code	Description	Size Range
5	Plastic Test Point	1 1/2"-2"

### Flow Chart



2-Way circuit "Added Head Loss" (for "V" below 6.5 f/s): 4.5 psi

### Differential Pressure & Flow Calculation

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

Cv = gpm @ ΔP of 1 psi

Q = gpm

ΔP = psi