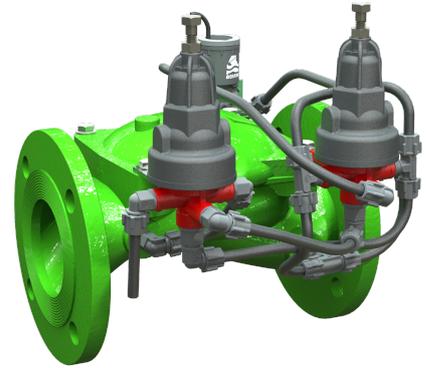


# PRESSURE REDUCING & SUSTAINING VALVE

## Model IR-423-55-3W-KX

The BERMAD Model IR-423-55-3W-KX is a hydraulically operated, diaphragm actuated control valve that sustains minimum preset upstream (back) pressure and reduces downstream pressure to a constant preset maximum. It either opens or shuts in response to an electric signal.



- [1] BERMAD Model IR-423-55-3W-KX opens in response to electric signal, sustains filters back flush pressure and establishes reduced pressure zone.
- [2] Hydrometer Model IR-900-M0-Magnetic Drive
- [3] Combination Air Valve Model IR-C10
- [4] Combination Air Valve Model IR-C30
- [5] Smart Irrigation Controller-OMEGA

### Features & Benefits

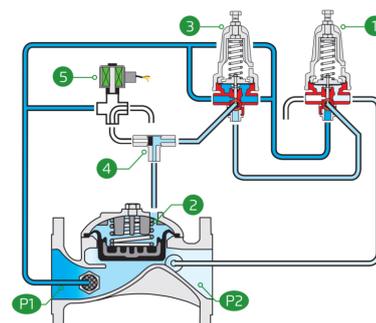
- Line Pressure Driven, Electrically Controlled On/Off
  - Protects downstream systems
  - Prioritizes pressure zones
  - Controls system fill-up
  - Sustains upstream line pressure
- Advanced Hydro-Efficient Globe Design
  - Unobstructed flow path
  - Single moving part
  - High flow capacity
- Fully Supported & Balanced Diaphragm
  - Requires low actuation pressure
  - Excellent low flow regulation performances
  - Progressively restrains valve closing
  - Prevents diaphragm distortion
- User-Friendly Design
  - Easy pressure setting
  - Simple in-line inspection and service

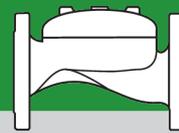
### Typical Applications

- Automated Irrigation Systems
- Line Fill-Up Control Solutions
- Pressure Reducing Systems
- Remote and/or Elevated Plots
- Infield Filters Backwash Pressure Sustaining
- Systems Subject to Varying Supply Pressure
- Distribution Centers

### Operation:

The Pressure Reducing Pilot (PRP) [1] is hydraulically connected to the Valve Control Chamber [2] through the Pressure Sustaining Pilot (PSP) [3] and the Shuttle Valve [4]. The PSP commands the valve to throttle closed should Upstream Pressure [P1] drop below setting. When [P1] rises above setting, the PSP switches and allows the PRP to control the valve, commanding it to reduce Downstream Pressure [P2] to a maximum preset value. In response to an electric signal, the Solenoid [5] switches and pressurizes the shuttle valve, which then blocks the pilots and transmits line pressure into the control chamber, shutting the valve.





### Technical Data

**Pressure Rating:**  
10 bar

**Operating Pressure Range:**  
0.5-10 bar

#### Materials

**Body & Cover:**  
Cast Iron

**Diaphragm:**  
NR, Nylon fabric reinforced

**Spring:**  
Stainless Steel

*\*Other materials are available on request*

#### Control Loop Accessories

**PR Pilot:** PC-SHARP-X-P

**PS 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
<b>N</b>	<b>Natural</b>	<b>0.8-6.5 bar</b>
V	Blue & White	1.0-10.0 bar

*Standard spring - marked in bold*

#### Tubing and Fittings:

Polyethylene and Polypropylene

#### AC solenoid:

S-390-T-3W

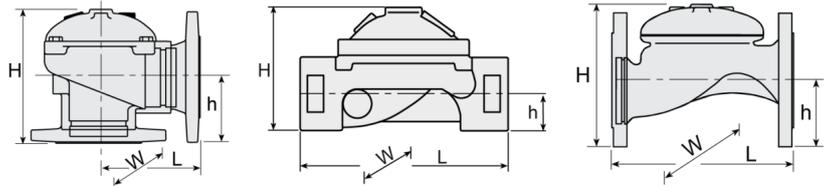
#### DC latch solenoid:

S-392-T-3W P.B

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

### Technical Specifications

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



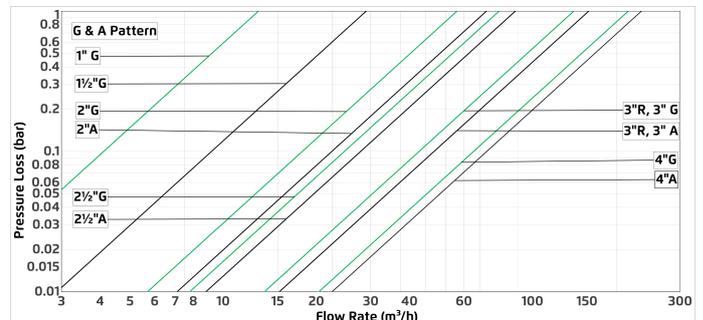
Size	Pattern	End Connection	Weight (Kg)	L (mm)	H (mm)	h (mm)	w	CCDV (Lit)	KV
1" ; DN25	Globe	Threaded	1.1	115	68	34	71	0.02	13
1½" ; DN40	Globe	Threaded	2	153	87	29	98	0.06	29
2" ; DN50	Globe	Threaded	4	180	114	39	119	0.113	57
2" ; DN50	Globe	Flanged	9	205	155	78	155	0.113	57
2" ; DN50	Globe	Grooved	5	205	108	31	119	0.113	57
2" ; DN50	Angle	Threaded	4.4	86	136	61	119	0.113	71
2" ; DN50	Angle	Flanged	9	120	160	83	155	0.113	71
2½" ; DN65	Globe	Threaded	5.7	210	132	45	129	0.179	78
2½" ; DN65	Globe	Flanged	10.5	205	178	89	178	0.179	78
2½" ; DN65	Angle	Threaded	5.8	110	180	93	131	0.179	88
3R" ; DN80R	Globe	Threaded	5.8	210	140	53	129	0.291	136
3R" ; DN80R	Globe	Flanged	12.1	210	200	100	200	0.291	136
3R" ; DN80R	Angle	Threaded	7	110	178	91	131	0.291	152
3" ; DN80	Globe	Threaded	13	255	165	55	170	0.291	136
3" ; DN80	Globe	Flanged	19	250	210	100	200	0.291	136
3" ; DN80	Globe	Grooved	10.6	250	155	46	170	0.291	136
3" ; DN80	Angle	Threaded	11	110	184	80	170	0.291	152
3" ; DN80	Angle	Flanged	17	153	205	101	200	0.291	152
3" ; DN80	Angle	Grooved	10	120	194	90	170	0.291	152
4" ; DN100	Globe	Flanged	28	320	242	112	223	0.668	204
4" ; DN100	Globe	Grooved	16.2	320	191	61	204	0.668	204
4" ; DN100	Angle	Flanged	26	160	223	112	223	0.668	225
4" ; DN100	Angle	Grooved	16	160	223	112	204	0.668	225

CCDV = Control Chamber Displacement Volume • **Threaded** = BSP & NPT are available.

#### Additional Features

Code	Description	Size Range
I	Position Indicator Assembly	1½"-4" / DN40-100
M	Flow Stem	1½"-4" / DN40-100
5	Plastic Test Point	1½"-4" / DN40-100

#### Flow Chart



#### Differential Pressure & Flow Calculation

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

$Kv = m^3/h @ \Delta P \text{ of } 1 \text{ bar}$   
 $Q = m^3/h$   
 $\Delta P = \text{bar}$