PRESSURE SUSTAINING VALVE

Model IR-430-55-3W-KX

The BERMAD Pressure Sustaining Valve with Solenoid Control is a hydraulically operated, diaphragm actuated control valve that sustains minimum preset upstream pressure and opens fully when line pressure is above setting. It either opens or shuts in response to an electric signal.

[1] BERMAD Model IR-430-55-KX opens in response to electric signals, sustains supply system pressure preventing emptying, and controls laterals and distribution line fill-up.

Features & Benefits

- Line Pressure Driven, Electrically Controlled On/Off
  - Prioritizes pressure zones & controls system fill-up
  - Sustains upstream line pressure
  - Opens fully upon line pressure rise
- 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
- Distanced and/or Elevated Plots
- Infield Filters Backwash Pressure Sustaining
- Systems Subject to Varying Supply Pressure
- Distribution Centers

Operation:

The Shuttle Valve [1] hydraulically connects the Solenoid [2] or the Pressure Sustaining Pilot (PSP) [3] to the Valve Control Chamber [4]. When the solenoid is switched ON, the PSP commands the valve to throttle closed should Upstream Pressure [P1] drop below setting and to open fully when [P1] rises above setting. In response to an electric signal, the solenoid switches OFF, directing line pressure through the shuttle valve into the control chamber, and thereby causing the valve to shut. The solenoid also features local manual override.

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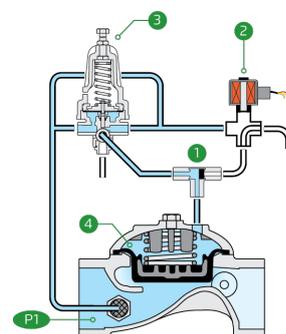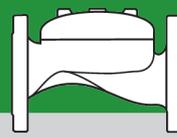
Technical Data

Pressure Rating:
150 psi

Operating Pressure Range:
7-150 psi

Materials

Body & Cover:
Cast Iron

Diaphragm:
NR, Nylon fabric reinforced

Spring:
Stainless Steel

Other materials are available on request

Control Loop Accessories

PS Pilot: PC-SHARP-X-P

Pilot Spring Range:

Spring	Spring Color	Setting range
J	Green	3-25 psi
K	Gray	7-43 psi
N	**Natural**	**12-95 psi**
V	Blue & White	15-150 psi

Standard spring - marked in bold

Tubing and Fittings:
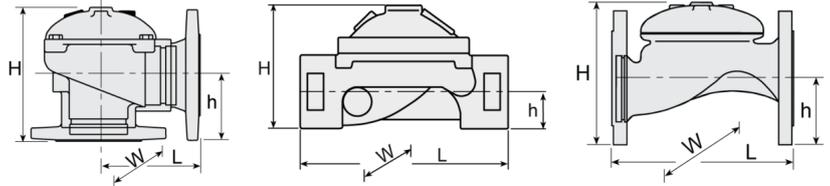Polyethylene and Polypropylene

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 (Lb)	L (In)	H (In)	h (In)	W	CCDV (Gal)	CV
1" ; DN25	Globe	Threaded	2.4	4⅝	2¾	1⅜	2⅞	0.005	15
1½" ; DN40	Globe	Threaded	4.4	6⅛	3⅜	1¼	3⅜	0.016	33
2" ; DN50	Globe	Threaded	8.8	7⅛	4½	1½	4¾	0.03	66
2" ; DN50	Globe	Flanged	19.8	8⅛	6⅛	3⅛	6⅛	0.03	66
2" ; DN50	Globe	Grooved	11	8⅛	4¼	1¼	4¾	0.03	66
2" ; DN50	Angle	Threaded	9.7	3½	5⅜	2½	4¾	0.03	82
2" ; DN50	Angle	Flanged	19.8	4¾	7⅞	3⅜	6⅛	0.03	82
2½" ; DN65	Globe	Threaded	12.6	8⅜	5¼	1⅞	5⅛	0.05	90
2½" ; DN65	Globe	Flanged	23.1	8⅛	7	3½	7	0.05	90
2½" ; DN65	Angle	Threaded	12.8	4⅜	7⅛	3¾	5¼	0.05	102
3R"- ; DN80R	Globe	Threaded	12.9	8⅜	5½	2⅛	5⅛	0.08	157
3R"- ; DN80R	Globe	Flanged	28	8⅜	7⅞	4	7⅞	0.08	157
3R"- ; DN80R	Angle	Threaded	15.4	4⅜	7	3⅜	5¼	0.08	176
3" ; DN80	Globe	Threaded	28.7	10⅛	6½	2¼	6¾	0.08	157
3" ; DN80	Globe	Flanged	41.9	9⅞	8¼	4	7⅞	0.08	157
3" ; DN80	Globe	Grooved	23.4	9⅞	6⅛	1⅞	6¾	0.08	157
3" ; DN80	Angle	Threaded	24.3	4⅜	7¼	3¼	6¾	0.08	176
3" ; DN80	Angle	Flanged	37.5	6⅛	8⅛	4	7⅞	0.08	176
3" ; DN80	Angle	Grooved	22.1	4¾	11	3⅜	6¾	0.08	176
4" ; DN100	Globe	Flanged	61.7	12⅝	9⅝	4½	8⅞	0.18	236
4" ; DN100	Globe	Grooved	35.7	12⅝	7⅞	2½	8	0.18	236
4" ; DN100	Angle	Flanged	57.3	6⅜	8¾	4½	8⅞	0.18	260
4" ; DN100	Angle	Grooved	35.3	6⅜	8¾	4½	8⅞	0.18	260

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

Additional Features

Code	Description	Size Range
I	Position Indicator Assembly	1½"-4"
5	Plastic Test Point	1½"-4"

Flow Chart
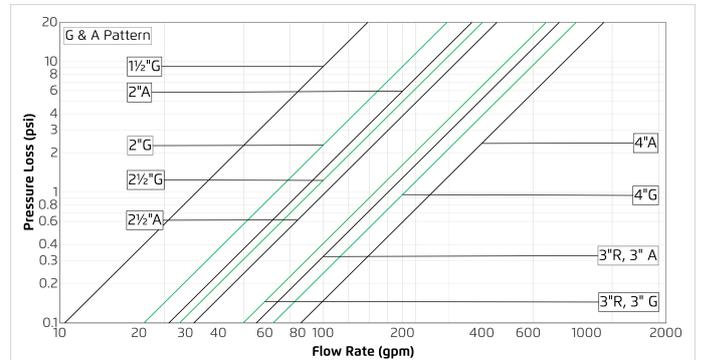
Differential Pressure & Flow Calculation

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

Cv = gpm @ ΔP of 1 psi
Q = gpm
ΔP = psi