



— MODEL — **94-58**

Combination Pressure Reducing & Surge Control Valve with Solenoid Override

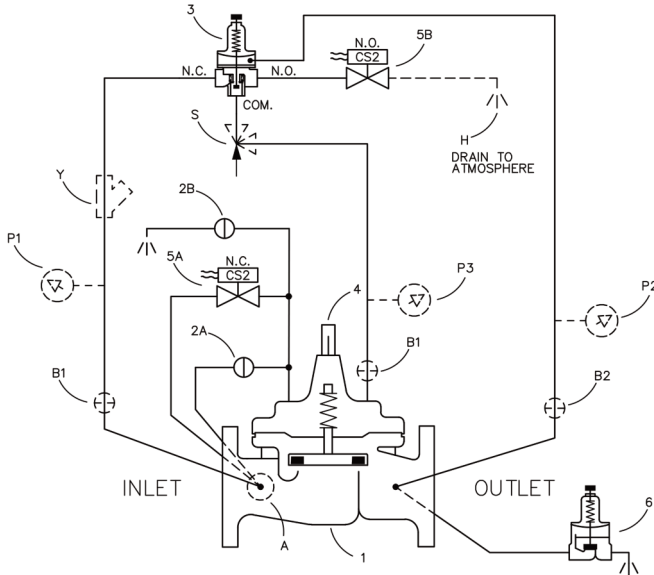
- **Accurate Pressure Control**
- **Wide Adjustment Ranges**
- **Non-Flowing Pilot System**
- **Quick Acting Solenoid Shut-Off**
- **Easy Installation and Maintenance**

The Cla-Val Model 94-58 Combination Pressure Reducing & Surge Control Valve with Solenoid Override consists of a Cla-Val Hytrol main valve, a reducing control and a solenoid control connected to the main valve. The solenoid override is used to close the valve and downstream pressure relief pilot.

This valve automatically reduces higher inlet pressure to a steady lower downstream pressure, regardless of changing flow rate and/or varying inlet pressure.

The 94-58 is an accurate, pilot-operated regulator capable of holding downstream pressure to a pre-determined delivery pressure. When downstream pressure exceeds the pressure setting of the control pilot, the pilot valve and main valve close drip-tight. A solenoid control is provided to intercept the operation of the pressure reducing control and close the main valve. This valve is furnished either normally open (de-energized to open), or normally closed (energized to open). Pressure setting adjustment is made with a single adjusting screw.

Should the downstream pressure suddenly increase above the setting of the pressure reducing control due to on/off operation of the downstream system, the Surge Control tracks rapidly enough to prevent high pressure surges from entering the downstream system, when the downstream system is rapidly closed off. The typical combination pressure reducing and surge control valve station uses Model 94-58 to control surges in downstream piping as remote control valves change from one downstream zone to another.



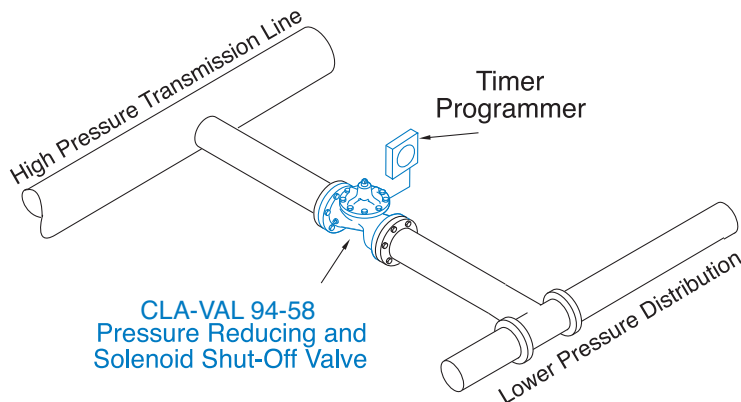
Schematic Diagram

| Item | Description |
|------|----------------------------------|
| 1 | 100-01 Hytrol Main Valve |
| 2 | CK2 Isolation Valve |
| 3 | CRDS-1 Pressure Reducing Control |
| 4 | X101C Valve Position Indicator |
| 5 | CS2 Solenoid Control |
| 6 | 55B-60 |

Optional Features

| Item | Description |
|------|------------------------------|
| A | X46A Flow Clean Strainer |
| B | CK2 Isolation Valve |
| H | Drain to Atmosphere |
| P | X141 Pressure Gauge Assembly |
| S | CV Speed Control (Opening) |
| Y | X43 "Y" Strainer |

Typical Applications



Electronic Control Service

A typical application for this valve is to reduce high transmission line pressures to lower distribution system levels, while opening and closing on command. The solenoid control feature can be activated by an electrical signal from a timer or programmer.

Pressure Ratings (Recommended Maximum Pressure - psi)

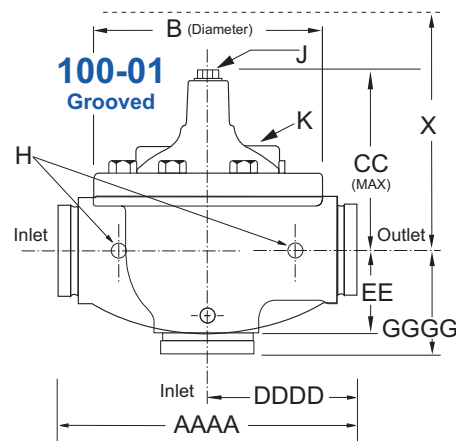
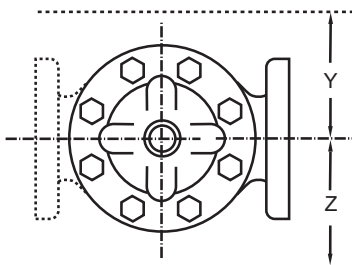
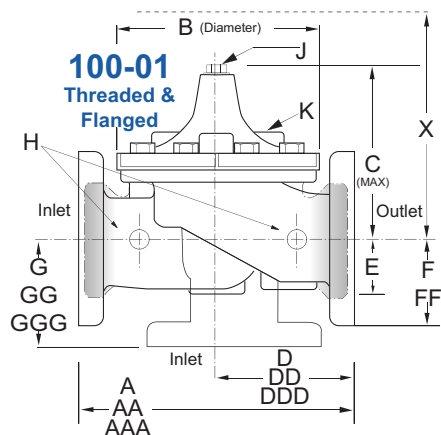
| Valve Body & Cover | | Pressure Class | | | | |
|--------------------|--------------|-----------------|-----------|-----------|-----------|--------------|
| | | Flanged | | | Grooved | Threaded |
| Grade | Material | ANSI Standards* | 150 Class | 300 Class | 300 Class | End‡ Details |
| ASTM A536 | Ductile Iron | B16.42 | 250 | 400 | 400 | 400 |
| ASTM A216-WCB | Cast Steel | B16.5 | 285 | 400 | 400 | 400 |
| UNS 87850 | Bronze | B16.24 | 225 | 400 | 400 | 400 |

Note: * ANSI standards are for flange dimensions only.
 Flanged valves are available faced but not drilled.
 ‡ End Details machined to ANSI B2.1 specifications.
Valves for higher pressure are available; consult factory for details

Materials

| Component | Ductile Iron | Cast Steel | Bronze |
|---------------------------------------|---|------------|----------|
| Body & Cover | Ductile Iron | Cast Steel | Bronze |
| Available Sizes | 1" - 36" | 1" - 16" | 1" - 16" |
| Disc Retainer & Diaphragm Washer | Cast Iron | Cast Steel | Bronze |
| Trim: Disc Guide Seat & Cover Bearing | Bronze is Standard Stainless Steel is Optional | | |
| Disc | Buna-N® Rubber | | |
| Diaphragm | Nylon Reinforced Buna-N® Rubber | | |
| Stem, Nut & Spring | Stainless Steel | | |

For material options not listed, consult factory. Cla-Val manufactures valves in more than 50 different alloys

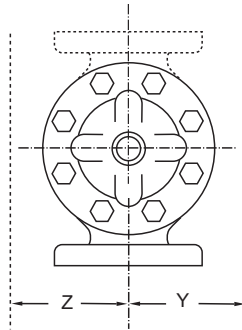
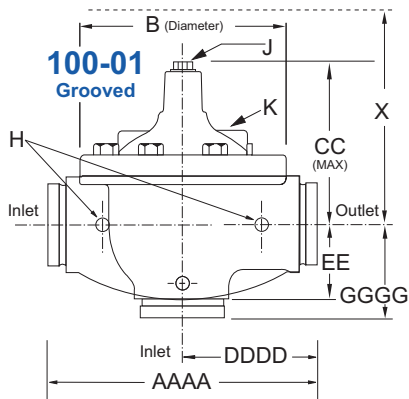
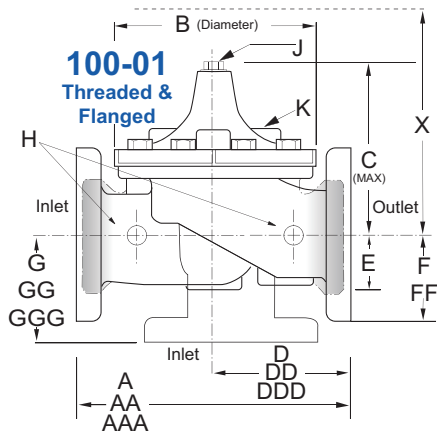


Model 94-58 Dimensions (In Inches)

| Valve Size (Inches) | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 | 30 | 36 |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| A Threaded | 7.25 | 7.25 | 7.25 | 9.38 | 11.00 | 12.50 | — | — | — | — | — | — | — | — | — | — | — | — |
| AA 150 ANSI | — | — | 8.50 | 9.38 | 11.00 | 12.00 | 15.00 | 20.00 | 25.38 | 29.75 | 34.00 | 39.00 | 41.38 | 46.00 | 52.00 | 61.50 | 63.00 | 72.75 |
| AAA 300 ANSI | — | — | 9.00 | 10.00 | 11.62 | 13.25 | 15.62 | 21.00 | 26.38 | 31.12 | 35.50 | 40.50 | 43.50 | 47.64 | 53.62 | 63.24 | 64.50 | 74.75 |
| AAAA Grooved End | — | — | 8.50 | 9.00 | 11.00 | 12.50 | 15.00 | 20.00 | 25.38 | — | — | — | — | — | — | — | — | — |
| B Diameter | 5.62 | 5.62 | 5.62 | 6.62 | 8.00 | 9.12 | 11.50 | 15.75 | 20.00 | 23.62 | 28.00 | 32.75 | 35.50 | 41.50 | 45.00 | 53.16 | 56.00 | 66.00 |
| C Maximum | 5.50 | 5.50 | 5.50 | 6.50 | 7.56 | 8.19 | 10.62 | 13.38 | 16.00 | 17.12 | 20.88 | 24.19 | 25.00 | 39.06 | 41.90 | 43.93 | 54.60 | 59.00 |
| CC Maximum Grooved End | — | — | 4.75 | 5.75 | 6.88 | 7.25 | 9.31 | 12.12 | 14.62 | — | — | — | — | — | — | — | — | — |
| D Threaded | 3.25 | 3.25 | 3.25 | 4.75 | 5.50 | 6.25 | — | — | — | — | — | — | — | — | — | — | — | — |
| DD 150 ANSI | — | — | 4.00 | 4.75 | 5.50 | 6.00 | 7.50 | 10.00 | 12.69 | 14.88 | 17.00 | 19.50 | 20.81 | — | — | 30.75 | — | — |
| DDD 300 ANSI | — | — | 4.25 | 5.00 | 5.88 | 6.38 | 7.88 | 10.50 | 13.25 | 15.56 | 17.75 | 20.25 | 21.62 | — | — | 31.62 | — | — |
| DDDD Grooved End | — | — | — | 4.75 | — | 6.00 | 7.50 | — | — | — | — | — | — | — | — | — | — | — |
| E | 1.12 | 1.12 | 1.12 | 1.50 | 1.69 | 2.06 | 3.19 | 4.31 | 5.31 | 9.25 | 10.75 | 12.62 | 15.50 | 12.95 | 15.00 | 17.75 | 21.31 | 24.56 |
| EE Grooved End | — | — | 2.00 | 2.50 | 2.88 | 3.12 | 4.25 | 6.00 | 7.56 | — | — | — | — | — | — | — | — | — |
| F 150 ANSI | — | — | 2.50 | 3.00 | 3.50 | 3.75 | 4.50 | 5.50 | 6.75 | 8.00 | 9.50 | 10.50 | 11.75 | 15.00 | 16.50 | 19.25 | 22.50 | 28.50 |
| FF 300 ANSI | — | — | 3.06 | 3.25 | 3.75 | 4.13 | 5.00 | 6.25 | 7.50 | 8.75 | 10.25 | 11.50 | 12.75 | 15.00 | 16.50 | 19.25 | 24.00 | 30.00 |
| G Threaded | 1.88 | 1.88 | 1.88 | 3.25 | 4.00 | 4.50 | — | — | — | — | — | — | — | — | — | — | — | — |
| GG 150 ANSI | — | — | 4.00 | 3.25 | 4.00 | 4.00 | 5.00 | 6.00 | 8.00 | 8.62 | 13.75 | 14.88 | 15.69 | — | — | 22.06 | — | — |
| GGG 300 ANSI | — | — | 4.25 | 3.50 | 4.31 | 4.38 | 5.31 | 6.50 | 8.50 | 9.31 | 14.50 | 15.62 | 16.50 | — | — | 22.90 | — | — |
| GGGG Grooved End | — | — | — | 3.25 | — | 4.25 | 5.00 | — | — | — | — | — | — | — | — | — | — | — |
| H NPT Body Tapping | 0.375 | 0.375 | 0.375 | 0.375 | 0.50 | 0.50 | 0.75 | 0.75 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 |
| J NPT Cover Center Plug | 0.25 | 0.25 | 0.25 | 0.50 | 0.50 | 0.50 | 0.75 | 0.75 | 1.00 | 1.00 | 1.25 | 1.50 | 2.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 |
| K NPT Cover Tapping | 0.375 | 0.375 | 0.375 | 0.375 | 0.50 | 0.50 | 0.75 | 0.75 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 |
| Stem Travel | 0.40 | 0.40 | 0.40 | 0.60 | 0.70 | 0.80 | 1.10 | 1.70 | 2.30 | 2.80 | 3.40 | 4.00 | 4.50 | 5.10 | 5.63 | 6.75 | 7.50 | 8.50 |
| Approx. Ship Weight (lbs) | 15 | 15 | 15 | 35 | 50 | 70 | 140 | 285 | 500 | 780 | 1165 | 1600 | 2265 | 2982 | 3900 | 6200 | 7703 | 11720 |
| Approx. X Pilot System | 11 | 11 | 11 | 13 | 14 | 15 | 17 | 29 | 31 | 33 | 36 | 40 | 40 | 43 | 47 | 68 | 79 | 85 |
| Approx. Y Pilot System | 9 | 9 | 9 | 9 | 10 | 11 | 12 | 20 | 22 | 24 | 26 | 29 | 30 | 32 | 34 | 39 | 40 | 45 |
| Approx. Z Pilot System | 9 | 9 | 9 | 9 | 10 | 11 | 12 | 20 | 22 | 24 | 26 | 29 | 30 | 32 | 34 | 39 | 42 | 47 |

Note: The top two flange holes on valve size 36 are threaded to 1 1/2"-6 UNC.

Model 94-58 Dimensions (in mm)



Valve Options

X141
Pressure
Gauge



X101AR Valve
Position Indicator
with Air Release



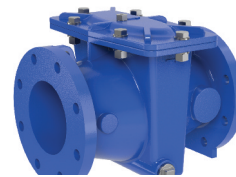
X101
Valve Position
Indicator



X144 e-FlowMeter



X43H
Strainer



Stainless
Steel Pilot



| Valve Size (mm) | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 750 | 900 |
|---------------------------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| A Threaded | 184 | 184 | 184 | 238 | 279 | 318 | — | — | — | — | — | — | — | — | — | — | — | — |
| AA 150 ANSI | — | — | 216 | 238 | 279 | 305 | 381 | 508 | 645 | 756 | 864 | 991 | 1051 | 1168 | 1321 | 1562 | 1600 | 1848 |
| AAA 300 ANSI | — | — | 229 | 254 | 295 | 337 | 397 | 533 | 670 | 790 | 902 | 1029 | 1105 | 1210 | 1326 | 1606 | 1638 | 1899 |
| AAAA Grooved End | — | — | 216 | 228 | 279 | 318 | 381 | 508 | 645 | — | — | — | — | — | — | — | — | — |
| B Diameter | 143 | 143 | 143 | 168 | 203 | 232 | 292 | 400 | 508 | 600 | 711 | 832 | 902 | 1054 | 1143 | 1350 | 1422 | 1676 |
| C Maximum | 140 | 140 | 140 | 165 | 192 | 208 | 270 | 340 | 406 | 435 | 530 | 614 | 635 | 992 | 1064 | 1116 | 1387 | 1499 |
| CC Maximum Grooved End | — | — | 120 | 146 | 175 | 184 | 236 | 308 | 371 | — | — | — | — | — | — | — | — | — |
| D Threaded | 83 | 83 | 83 | 121 | 140 | 159 | — | — | — | — | — | — | — | — | — | — | — | — |
| DD 150 ANSI | — | — | 102 | 121 | 140 | 152 | 191 | 254 | 322 | 378 | 432 | 495 | 528 | — | — | 781 | — | — |
| DDD 300 ANSI | — | — | 108 | 127 | 149 | 162 | 200 | 267 | 337 | 395 | 451 | 514 | 549 | — | — | 803 | — | — |
| DDDD Grooved End | — | — | — | 121 | — | 152 | 191 | — | — | — | — | — | — | — | — | — | — | — |
| E | 29 | 29 | 29 | 38 | 43 | 52 | 81 | 110 | 135 | 235 | 273 | 321 | 394 | 329 | 381 | 451 | 541 | 624 |
| EE Grooved End | — | — | 52 | 64 | 73 | 79 | 108 | 152 | 192 | — | — | — | — | — | — | — | — | — |
| F 150 ANSI | — | — | 64 | 76 | 89 | 95 | 114 | 140 | 171 | 203 | 241 | 267 | 298 | 381 | 419 | 489 | 572 | 724 |
| FF 300 ANSI | — | — | 78 | 83 | 95 | 105 | 127 | 159 | 191 | 222 | 260 | 292 | 324 | 381 | 419 | 489 | 610 | 762 |
| G Threaded | 48 | 48 | 48 | 83 | 102 | 114 | — | — | — | — | — | — | — | — | — | — | — | — |
| GG 150 ANSI | — | — | 102 | 83 | 102 | 102 | 127 | 152 | 203 | 219 | 349 | 378 | 399 | — | — | 560 | — | — |
| GGG 300 ANSI | — | — | 102 | 89 | 110 | 111 | 135 | 165 | 216 | 236 | 368 | 397 | 419 | — | — | 582 | — | — |
| GGGG Grooved End | — | — | — | 83 | — | 108 | 127 | — | — | — | — | — | — | — | — | — | — | — |
| H NPT Body Tapping | 0.375 | 0.375 | 0.375 | 0.375 | 0.50 | 0.50 | 0.75 | 0.75 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 |
| J NPT Cover Center Plug | 0.25 | 0.25 | 0.25 | 0.50 | 0.50 | 0.50 | 0.75 | 0.75 | 1.00 | 1.00 | 1.25 | 1.50 | 2.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 |
| K NPT Cover Tapping | 0.375 | 0.375 | 0.375 | 0.375 | 0.50 | 0.50 | 0.75 | 0.75 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 |
| Stem Travel | 10 | 10 | 10 | 15 | 18 | 20 | 28 | 43 | 58 | 71 | 86 | 102 | 114 | 130 | 143 | 171 | 190 | 216 |
| Approx. Ship Weight (kgs) | 7 | 7 | 7 | 16 | 23 | 32 | 64 | 129 | 227 | 354 | 528 | 726 | 1027 | 1353 | 1769 | 2812 | 3494 | 5316 |
| Approx. X Pilot System | 280 | 280 | 280 | 331 | 356 | 381 | 432 | 737 | 788 | 839 | 915 | 1016 | 1016 | 1093 | 1194 | 1728 | 2007 | 2159 |
| Approx. Y Pilot System | 229 | 229 | 229 | 229 | 254 | 280 | 305 | 508 | 559 | 610 | 661 | 737 | 762 | 813 | 864 | 991 | 1016 | 1143 |
| Approx. Z Pilot System | 229 | 229 | 229 | 229 | 254 | 280 | 305 | 508 | 559 | 610 | 661 | 737 | 762 | 813 | 864 | 991 | 1067 | 1194 |

Model 94-58 (Uses Main Valve Model 100-01)

| 94-58 Valve Selection | 100-01 Pattern: Globe (G), Angle (A), End Connections: Threaded (T), Grooved (GR), Flanged (F) Indicate Available Sizes | | | | | | | | | | | | | | | | | | | |
|--|---|------|------|--------------|-------------|--------------|-------------|----------|-----------|--|------|------|-------|-------|-------|-------|-------|-------|-------|---------------------|
| | Inches | 1 | 1¼ | 1½ | 2 | 2½ | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 | 30 | 36 | |
| | mm | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 750 | 900 | |
| Main Valve 100-01 | Pattern | G, A | G, A | G, A | G, A | G, A | G, A | G, A | G, A | G, A | G, A | G, A | G, A | G, A | G | G | G, A | G | G | |
| | End Detail | T | T | T, F, Gr* | T, F, Gr | T, F, Gr* | T, F, Gr | F, Gr | F, Gr* | F, Gr* | F | F | F | F | F | F | F | F | F | F |
| Suggested Flow (gpm) | Maximum | 55 | 93 | 125 | 210 | 300 | 460 | 800 | 1800 | 3100 | 4900 | 7000 | 8400 | 11000 | 14000 | 17000 | 25000 | 42000 | 50000 | |
| | Maximum Intermittent | 68 | 120 | 160 | 260 | 370 | 580 | 990 | 2250 | 3900 | 6150 | 8720 | 10540 | 13700 | 17500 | 21700 | 31300 | 48000 | 62500 | |
| | Minimum | 1 | 1 | 1 | 1 | 2 | 2 | 4 | 10 | 15 | 35 | 50 | 70 | 95 | 120 | 150 | 275 | 450 | 650 | |
| Suggested Flow (Liters/Sec) | Maximum | 3.5 | 6 | 8 | 13 | 19 | 29 | 50 | 113 | 195 | 309 | 442 | 530 | 694 | 883 | 1073 | 1577 | 2650 | 3150 | |
| | Maximum Intermittent | 4.3 | 7.6 | 10 | 16 | 23 | 37 | 62 | 142 | 246 | 387 | 549 | 664 | 863 | 1104 | 1369 | 1972 | 3028 | 3940 | |
| | Minimum | .03 | .03 | .03 | .06 | .09 | 0.13 | 0.25 | 0.63 | 0.95 | 2.2 | 3.2 | 4.4 | 6.0 | 7.6 | 9.5 | 17.4 | 28.4 | 41.0 | |
| 100-01 Series is the full internal port Hytrol. | | | | | | | | | | For Lower Flows Consult Factory | | | | | | | | | | *Globe Grooved Only |

Pilot System Specifications

Adjustment Ranges

- 2 to 30 psi
- 15 to 75 psi
- 20 to 105 psi
- 30 to 300 psi*

*Supplied unless otherwise specified
Other ranges available, please consult factory.

Electrical Ratings

- 24, 48, 120, 240, 480 – 60 Hz VAC
- 6, 12, 24, 120, 240 VDC

This valve is furnished either normally open (de-energized to open), or normally closed (energized to open).

Temperature Range

Water: to 180°F

Materials

Standard Pilot System Materials
Pilot Control: Low Lead Bronze
Trim: Stainless Steel Type 303
Rubber: Buna-N® Synthetic Rubber

Optional Pilot System Materials

Pilot Systems are available with optional Aluminum, Stainless Steel, Monel or Cast Steel materials.

Note: Available with remote sensing control.

When Ordering, Please Specify

1. Catalog No. 94-58
2. Valve Size
3. Pattern - Globe or Angle
4. Pressure Class
5. Threaded or Flanged
6. Trim Material
7. Adjustment Range
8. Desired Options
9. Energized or De-Energized to Open
10. Electrical Selection
11. When Vertically Installed

CLA-VAL

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