



**MODEL 131-73**  
(Full Internal Port)  
**631-73**  
(Reduced Internal Port)

# Electronic Interface Control Valve for Industrial Service



- Simple Proven Design
- Long-Life Solenoid Pilot Controls
- Ideal For SCADA Systems
- Industrial Air Operated
- Security System - Prevents Unauthorized Changes
- Easy To Maintain

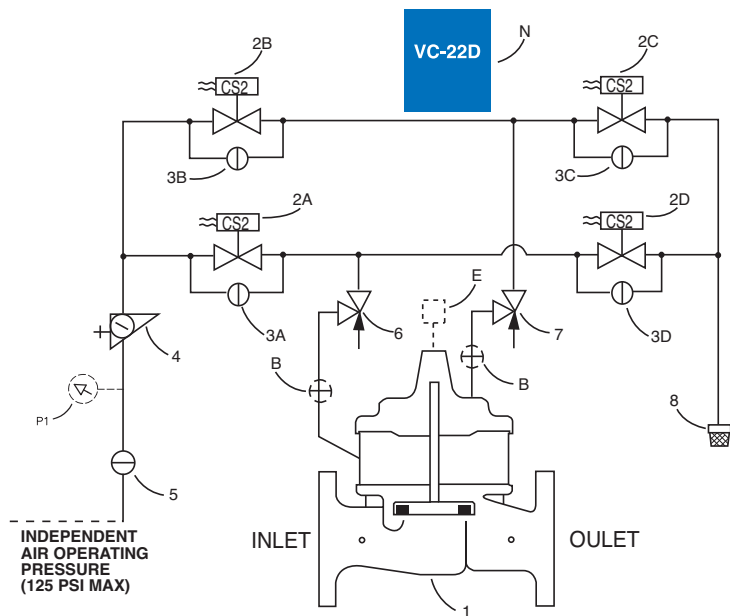
The Cla-Val Model 131-73/631-73 Electronic Interface Control Valve is well suited for applications where the line pressure is low or the media is aggressive. It uses independent air pressure for operating the valve. The pilot system applies or relieves pressure to either side of the diaphragm, causing the valve to open, close or modulate as desired. The optional VC-22D Electronic Controller is easily programmed to modulate the valve for precise control of flow, pressure, tank level or valve position.

## Schematic Diagram

| Item | Description               |
|------|---------------------------|
| 1    | Powertrol Main Valve      |
| 2    | CS2 Solenoid Control      |
| 3    | CK2 (Solenoid Bypass)     |
| 4    | Regulator/Filter          |
| 5    | CK2 (Isolation Valve)     |
| 6    | CV Flow Control (Closing) |
| 7    | CV Flow Control (Opening) |
| 8    | Exhaust Muffler           |

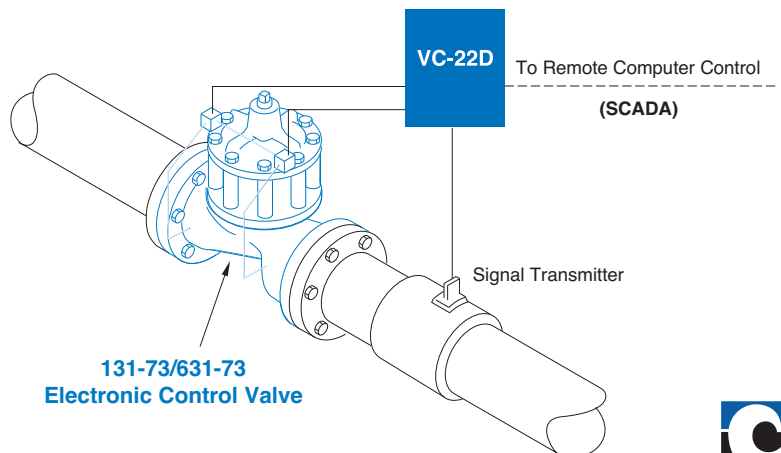
## Optional Features

| Item | Description                        |
|------|------------------------------------|
| B    | CK2 (Isolation Valve)              |
| E    | X117 Series Position Transmitter   |
| N    | VC-22D Valve Electronic Controller |
| P    | X141 Pressure Gauge                |



## Typical Applications

The Model 131-73/631-73 Electronic Interface Control Valve is typically installed in a pipeline with an electronic signal transmitter and the Model VC-22D Electronic Valve Controller. This system can provide control of flow, pressure, tank level or valve position. The VC-22D Electronic Valve Controller enables remote or local computer control over valve operations. For optimum valve operation, fluid maximum inlet pressure must be less than (or equal to) independent air pressure source.



## Model 131-73 (Uses Basic Valve Model 100-02)

### 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          |
| ASTM B62           | 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**

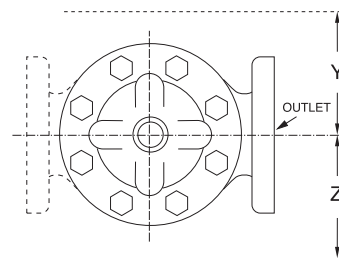
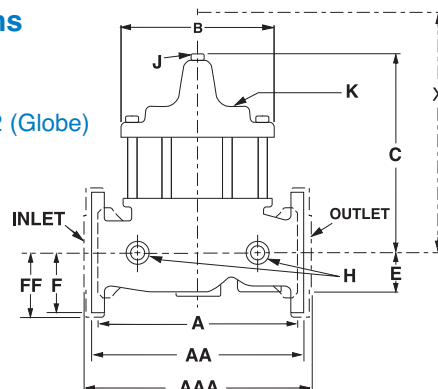
### Materials

| Component                              | Standard Material Combinations                    |            |          |
|--|---|------------|----------|
| Body & Cover                           | Ductile Iron                                      | Cast Steel | Bronze   |
| Available Sizes                        | 3" - 36"  | 3" - 16"   | 3" - 16" |
| Disc Retainer & Diaphragm Washer       | Cast Iron   | Cast Steel | Bronze   |
| Trim: Disc Guide, Seat & Cover Bearing | Bronze is Standard<br>Stainless Steel is Optional |            |          |
| Disc                                   | Buna-N® Rubber                                    |            |          |
| Diaphragm                              | Nylon Reinforced Buna-N® Rubber                   |            |          |
| Stem, Nut & Spring                     | Stainless Steel                                   |            |          |

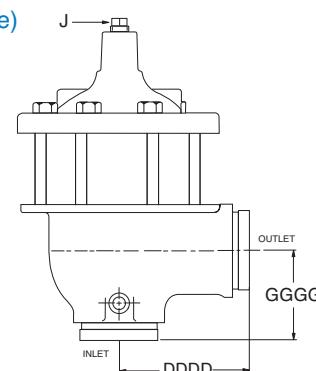
For material options not listed, consult factory.  
 Cla-Val manufactures valves in more than 50 different alloys.

### Dimensions (In inches)

100-02 (Globe)



100-02 (Angle)



### Model 131-73 Dimensions (In Inches)

| Valve Size (Inches)     | 3     | 4     | 6     | 8     | 10    | 12    | 14    | 16    | 18    | 20    | 24    | 30    | 36    |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| A Threaded              | 12.50 | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     |
| AA 150 ANSI             | 12.00 | 15.00 | 20.00 | 25.38 | 29.75 | 34.00 | 39.00 | 41.38 | 46.00 | 52.00 | 61.50 | 63.00 | 76.00 |
| AAA 300 ANSI            | 13.25 | 15.62 | 21.00 | 26.38 | 31.12 | 35.50 | 40.50 | 43.50 | 47.64 | 53.62 | 63.24 | 64.50 | 76.00 |
| AAAA Grooved End        | 12.50 | 15.00 | 20.00 | 25.38 | —     | —     | —     | —     | —     | —     | —     | —     | —     |
| B Dia.                  | 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 Max.                  | 8.19  | 10.62 | 13.38 | 16.00 | 17.12 | 20.88 | 24.19 | 25.00 | 39.06 | 41.90 | 43.93 | 54.60 | 61.50 |
| CC Max. Grooved End     | 7.25  | 9.31  | 12.12 | 14.62 | —     | —     | —     | —     | —     | —     | —     | —     | —     |
| D Threaded              | 6.25  | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     |
| DD 150 ANSI             | 6.00  | 7.50  | 10.00 | 12.69 | 14.88 | 17.00 | 19.50 | 20.81 | —     | —     | 30.75 | —     | —     |
| DDD 300 ANSI            | 6.38  | 7.88  | 10.50 | 13.25 | 15.56 | 17.75 | 20.25 | 21.62 | —     | —     | 31.62 | —     | —     |
| DDDD Grooved End        | 6.00  | 7.50  | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     |
| E                       | 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          | 3.12  | 4.25  | 6.00  | 7.56  | —     | —     | —     | —     | —     | —     | —     | —     | —     |
| F 150 ANSI              | 3.75  | 4.50  | 5.50  | 6.75  | 8.00  | 9.50  | 10.50 | 11.75 | 15.00 | 16.50 | 19.25 | 22.50 | 25.60 |
| FF 300 ANSI             | 4.13  | 5.00  | 6.25  | 7.50  | 8.75  | 10.25 | 11.50 | 12.75 | 15.00 | 16.50 | 19.25 | 24.00 | 25.60 |
| G Threaded              | 4.50  | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     |
| GG 150 ANSI             | 4.00  | 5.00  | 6.00  | 8.00  | 8.62  | 13.75 | 14.88 | 15.69 | —     | —     | 22.06 | —     | —     |
| GGG 300 ANSI            | 4.38  | 5.31  | 6.50  | 8.50  | 9.31  | 14.50 | 15.62 | 16.50 | —     | —     | 22.90 | —     | —     |
| GGGG Grooved End        | 4.25  | 5.00  | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     |
| H NPT Body Tapping      | .50   | .75   | .75   | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 2     | 2     |
| J NPT Cover Center Plug | .50   | .75   | .75   | 1     | 1     | 1.25  | 1.5   | 2     | 1.5   | 1.5   | 1.5   | 2     | 2     |
| K NPT Cover Tapping     | .50   | .75   | .75   | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 2     | 2     |
| Stem Travel             | 0.8   | 1.1   | 1.7   | 2.3   | 2.8   | 3.4   | 4.0   | 4.5   | 5.1   | 5.63  | 6.75  | 7.5   | 8.5   |
| Approx. Ship Wt. Lbs.   | 70    | 140   | 285   | 500   | 780   | 1165  | 1600  | 2265  | 2982  | 3900  | 6200  | 7703  | 11720 |
| X Pilot System          | 15    | 17    | 29    | 31    | 33    | 36    | 40    | 40    | 43    | 47    | 68    | 79    | 85    |
| Y Pilot System          | 11    | 12    | 20    | 22    | 24    | 26    | 29    | 30    | 32    | 34    | 39    | 40    | 45    |
| Z Pilot System          | 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.

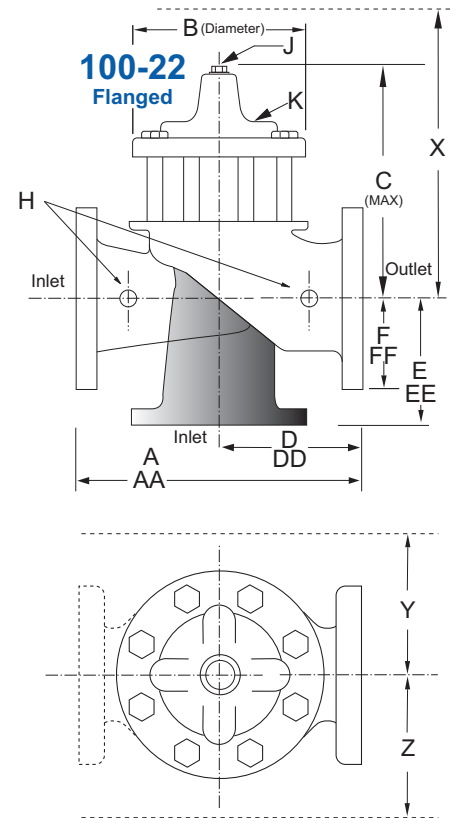
**Model 631-73** (Uses Basic Valve Model 100-22)

**Dimensions**  
(In inches)

**Pressure Ratings** (Recommended Maximum Pressure - psi)

| Valve Body & Cover |              | Pressure Class  |           |           |
|--------------------|--------------|-----------------|-----------|-----------|
|                    |              | Flanged         |           |           |
| Grade              | Material     | ANSI Standards* | 150 Class | 300 Class |
| ASTM A536          | Ductile Iron | B16.42          | 250       | 400       |
| ASTM A216-WCB      | Cast Steel   | B16.5           | 285       | 400       |
| ASTM B62           | Bronze       | B16.24          | 225       | 400       |

Note: \* ANSI standards are for flange dimensions only.  
Flanged valves are available faced but not drilled.  
**Valves for higher pressure are available; consult factory for details**



**Materials**

| Component                              | Standard Material Combinations                    |            |          |
|--|---|------------|----------|
| Body & Cover                           | Ductile Iron                                      | Cast Steel | Bronze   |
| Available Sizes                        | 3" - 48"  | 3" - 16"   | 3" - 16" |
| Disc Retainer & Diaphragm Washer       | Cast Iron   | Cast Steel | Bronze   |
| Trim: Disc Guide, Seat & Cover Bearing | Bronze is Standard<br>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 631-73 Dimensions** (In Inches)

| Valve Size (Inches)            | 3     | 4     | 6     | 8     | 10    | 12    | 14    | 16    | 18    | 20    | 24    | 30    | 36    | 42    | 48    |
|--------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>A</b> 150 ANSI              | 10.25 | 13.88 | 17.75 | 21.38 | 26.00 | 30.00 | 34.25 | 35.00 | 42.12 | 48.00 | 48.00 | 63.25 | 65.00 | 76.00 | 94.50 |
| <b>AA</b> 300 ANSI             | 11.00 | 14.50 | 18.62 | 22.38 | 27.38 | 31.50 | 35.75 | 36.62 | 43.63 | 49.62 | 49.75 | 63.75 | 67.00 | 76.00 | 94.50 |
| <b>B</b> Dia.                  | 6.62  | 9.12  | 11.50 | 15.75 | 20.00 | 23.62 | 27.47 | 28.00 | 35.44 | 35.44 | 35.44 | 53.19 | 56.00 | 66.00 | 66.00 |
| <b>C</b> Max.                  | 7.00  | 8.62  | 11.62 | 15.00 | 17.88 | 21.00 | 20.88 | 25.75 | 25.00 | 31.00 | 31.00 | 43.94 | 54.60 | 61.50 | 61.50 |
| <b>D</b> 150 ANSI              | —     | 6.94  | 8.88  | 10.69 | CF*   | CF*   | CF*   | CF*   | CF*   | CF*   | CF*   | —     | —     | —     | —     |
| <b>DD</b> 300 ANSI             | —     | 7.25  | 9.38  | 11.19 | CF*   | CF*   | CF*   | CF*   | CF*   | CF*   | CF*   | —     | —     | —     | —     |
| <b>E</b> 150 ANSI              | —     | 5.50  | 6.75  | 7.25  | CF*   | CF*   | CF*   | CF*   | CF*   | CF*   | CF*   | —     | —     | —     | —     |
| <b>EE</b> 300 ANSI             | —     | 5.81  | 7.25  | 7.75  | CF*   | CF*   | CF*   | CF*   | CF*   | CF*   | CF*   | —     | —     | —     | —     |
| <b>F</b> 150 ANSI              | 3.75  | 4.50  | 5.50  | 6.75  | 8.00  | 9.50  | 11.00 | 11.75 | 15.88 | 14.56 | 17.00 | 19.88 | 25.50 | 28.00 | 31.50 |
| <b>FF</b> 300 ANSI             | 4.12  | 5.00  | 6.25  | 7.50  | 8.75  | 10.25 | 11.50 | 12.75 | 15.88 | 16.06 | 19.00 | 22.00 | 27.50 | 28.00 | 31.50 |
| <b>H</b> NPT Body Tapping      | .375  | .50   | .75   | .75   | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 2     | 2     | 2     |
| <b>J</b> NPT Cover Center Plug | .50   | .50   | .75   | .75   | 1     | 1     | 1.25  | 1.25  | 2     | 2     | 2     | 2     | 2     | 2     | 2     |
| <b>K</b> NPT Cover Tapping     | .375  | .50   | .75   | .75   | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 2     | 2     | 2     |
| Stem Travel                    | 0.6   | 0.8   | 1.1   | 1.7   | 2.3   | 2.8   | 3.4   | 3.4   | 4.5   | 4.5   | 4.5   | 6.5   | 7.5   | 8.5   | 8.5   |
| Approx. Ship Wt. Lbs.          | 45    | 85    | 195   | 330   | 625   | 900   | 1250  | 1380  | 1500  | 2551  | 2733  | 6500  | 8545  | 12450 | 13100 |
| <b>X</b> Pilot System          | 13    | 15    | 27    | 30    | 33    | 36    | 36    | 41    | 40    | 46    | 55    | 68    | 79    | 85    | 86    |
| <b>Y</b> Pilot System          | 10    | 11    | 18    | 20    | 22    | 24    | 26    | 26    | 30    | 30    | 30    | 39    | 40    | 45    | 47    |
| <b>Z</b> Pilot System          | 10    | 11    | 18    | 20    | 22    | 24    | 26    | 26    | 30    | 30    | 30    | 39    | 42    | 47    | 49    |

\*Consult Factory

Note: The top two flange holes on valve sizes 36 thru 48 are threaded to 1 1/2"-6 UNC.

| 131-73<br>Valve<br>Selection      | 100-02 Pattern: Globe (G), Angle (A), End Connections: Threaded (T), Grooved (GR), Flanged (F) Indicate Available Sizes |             |          |           |           |      |      |       |       |       |       |       |       |       |
|-----------------------------------|---|-------------|----------|-----------|-----------|------|------|-------|-------|-------|-------|-------|-------|-------|
|                                   | Inches  | 3           | 4        | 6         | 8         | 10   | 12   | 14    | 16    | 18    | 20    | 24    | 30    | 36    |
|                                   | mm  | 80          | 100      | 150       | 200       | 250  | 300  | 350   | 400   | 450   | 500   | 600   | 750   | 900   |
| Basic Valve<br>100-02             | Pattern   | 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, F,<br>Gr | F,<br>Gr | F,<br>Gr* | F,<br>Gr* | F    | F    | F     | F     | F     | F     | F     | F     | F     |
| Suggested<br>Flow<br>(gpm)        | Maximum   | 460         | 800      | 1800      | 3100      | 4900 | 7000 | 8400  | 11000 | 14000 | 17000 | 25000 | 42000 | 50000 |
|                                   | Maximum Intermittent  | 580         | 990      | 2250      | 3900      | 6150 | 8720 | 10540 | 13700 | 17500 | 21700 | 31300 | 48000 | 62500 |
|                                   | Minimum   | 2           | 4        | 10        | 15        | 35   | 50   | 70    | 95    | 120   | 150   | 275   | 450   | 650   |
| Suggested<br>Flow<br>(Liters/Sec) | Maximum   | 29          | 50       | 113       | 195       | 309  | 442  | 530   | 694   | 883   | 1073  | 1577  | 2650  | 3150  |
|                                   | Maximum Intermittent  | 37          | 62       | 142       | 246       | 387  | 549  | 664   | 863   | 1104  | 1369  | 1972  | 3028  | 3940  |
|                                   | Minimum   | 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  |

100-02 Series is the full internal port Hytrol.

For Lower Flows Consult Factory

\*Globe Grooved Only

| 631-73<br>Valve<br>Selection      | 100-22 Pattern: Globe (G), Angle (A), End Connections: Flanged (F) Indicate Available Sizes |     |      |      |      |      |      |      |      |       |       |       |       |       |       |       |
|-----------------------------------|---|-----|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
|                                   | Inches  | 3   | 4    | 6    | 8    | 10   | 12   | 14   | 16   | 18    | 20    | 24    | 30    | 36    | 42    | 48    |
|                                   | mm  | 80  | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450   | 500   | 600   | 750   | 900   | 1000  | 1200  |
| Basic Valve<br>100-22             | Pattern   | G   | G, A | G, A | G, A | G    | G    | G    | G    | G     | G     | G     | G     | G     | G     | G     |
|                                   | End Detail  | F   | F    | F    | F    | F    | F    | F    | F    | F     | F     | F     | F     | F     | F     | F     |
| Suggested<br>Flow<br>(gpm)        | Maximum   | 260 | 580  | 1025 | 2300 | 4100 | 6400 | 9230 | 9230 | 16500 | 16500 | 16500 | 28000 | 33500 | 33500 | 33500 |
|                                   | Minimum   | 1   | 2    | 4    | 10   | 15   | 35   | 50   | 50   | 95    | 95    | 95    | 275   | 450   | 450   | 450   |
| Suggested<br>Flow<br>(Liters/Sec) | Maximum   | 16  | 37   | 65   | 145  | 258  | 403  | 581  | 581  | 1040  | 1040  | 1040  | 1764  | 2115  | 2115  | 2115  |
|                                   | Minimum   | .06 | .13  | .25  | .63  | .95  | 2.2  | 3.2  | 3.2  | 6.0   | 6.0   | 6.0   | 17.4  | 28.4  | 41.0  | 41.0  |

100-22 Series is the reduced internal port size version of the 100-01 Series.

For Lower Flows Consult Factory

We recommend providing adequate space around valve for maintenance work

## Pilot System Specifications

### Temperature Range

Water: to 180°F  
Air: to 140°F

### Rubber Parts:

Buna-N® Rubber  
Viton Optional

### Solenoid Control

Body: Brass ASTM B283

### Enclosure:

NEMA Type 1,2,3,3S,4,4X general purpose watertight  
NEMA Type 6,6P,7,9 watertight explosion proof available at extra cost

### Voltages:

110, 220, -50Hz Ac  
24, 120, 240, 480 - 60Hz AC  
6, 12, 24, 120, 240 - DC  
Others available at extra cost

### Max. operating pressure differential:

125 psi

### Coil:

Insulation molded Class F  
Watts AC 15.1

## When Ordering, Please Specify

1. Catalog No. 131-73 or 631-73
2. Valve Size
3. Pattern - Globe or Angle
4. Pressure Class
5. Threaded or Flanged
6. Trim Material
7. Electrical Specifications
8. Desired Options
9. When Vertically Installed