



# Model **100G-UDR**

## PNEUMATIC ON/OFF DELUGE VALVE WITH PRESSURE REGULATION

ENGINEERING DATA SHEET



- Dual Guided Stem Internal for Reliable Seating
- Tapered Metal Seat for Drip Tight Shut-off
- Replaceable 316 Stainless Steel Seat
- Single Internal Guided Assembly
- Proven Repeat Functionality in Harsh Conditions
- In-Line Maintenance

The Cla-Val Model 100G-UDR is a pneumatically actuated on/off regulating deluge valve designed for use in multiple applications.

The 100G-UDR can be actuated locally by relieving cover pressure through our EDVR (Emergency Deluge Valve Release) or remotely based on customer design.

Once actuated, downstream pressure will regulated to an adjustable set point.

100G-UDD: Once actuated, CDHS-2B pilot will use differential pressure to regulate downstream flow.

### Actuation Method

- EDVR Manual Release
- Remote Hydraulic Actuation

### Optional UL Features

- X101D Valve Position Indicator
- X141 Pressure Gauges
- Pressure Switch Assembly
- X105 Limit Switch

### Typical Applications

- Pneumatically Operated Systems
- System Pressure Regulation
- Foam Applications
- Automatic Deluge Systems
- Flow Control Applications



## 100G-UDR Schematic

Cla-Val Model 100G-UDR is a pneumatically actuated on/off regulating deluge valve that opens or closes via local or remote actuation.

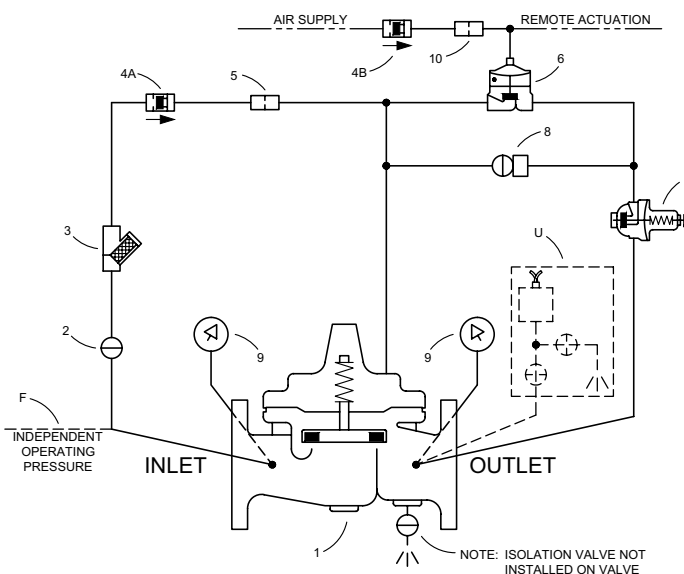
**Closed Position:** Supply pressure is applied through our Main Valve(1) Inlet Port or Independent Supply Line (F). The supply pressure will pass through our inlet isolation ball valve (2), strainer (3), check valve (4A) and restriction orifice (5A) before being applied to our Main Valve (1) Cover. Additionally the supply pressure will pass through our check valve (4B) and restriction orifice (10) before applying pressure to the cover of our Auxiliary Hytrol (6).

**Open Position:** Main Valve (1) Cover pressure is released through our EDVR (Item 8) which consists of a quarter turn ball valve or via remote actuation per customer design. Once actuated, downstream pressure will be regulated to an adjustable set point.

**NOTE: For seawater applications use 100GS/2100GS main valve**

| Basic Components |                                |
|------------------|--------------------------------|
| Item             | Description                    |
| 1                | UL Listed Valve                |
| 2                | Isolation Valve                |
| 3                | Strainer                       |
| 4                | Check Valve                    |
| 5                | Restriction Assembly           |
| 6                | Auxiliary Powertrol            |
| 7                | Pressure Reducing Control      |
| 8                | Emergency Deluge Valve Release |
| 9                | Pressure Gauge Assembly        |
| 10               | Restriction Fitting            |

| Optional Features |                                |
|-------------------|--------------------------------|
| Item              | Description                    |
| F                 | Independent Operating Pressure |
| U                 | Pressure Switch Assembly       |



## Specifications

### Main Valve Specifications

#### Approved Sizes

Flanged: 3" - 12"

Grooved: 3" - 8" (3" - 10" Globe)

#### Pressure Ratings

150 class, 250 psi maximum (Ductile Iron)

150 class, 285 psi maximum (All other materials)

300 class, 300 psi maximum (All materials)

#### Temperature Range

Water: to 180° F. Max

#### Fluids

Water

### Materials

#### Main Valve Body & Cover

Standard Epoxy Coated Ductile Iron

ASTM A-536\*

#### Main Valve Trim

Stainless Steel

#### Pilot Control System

Cast Bronze

#### Rubber Parts

Buna-N® Synthetic Rubber

### Optional Listed Materials for Seawater and Severe Service Applications

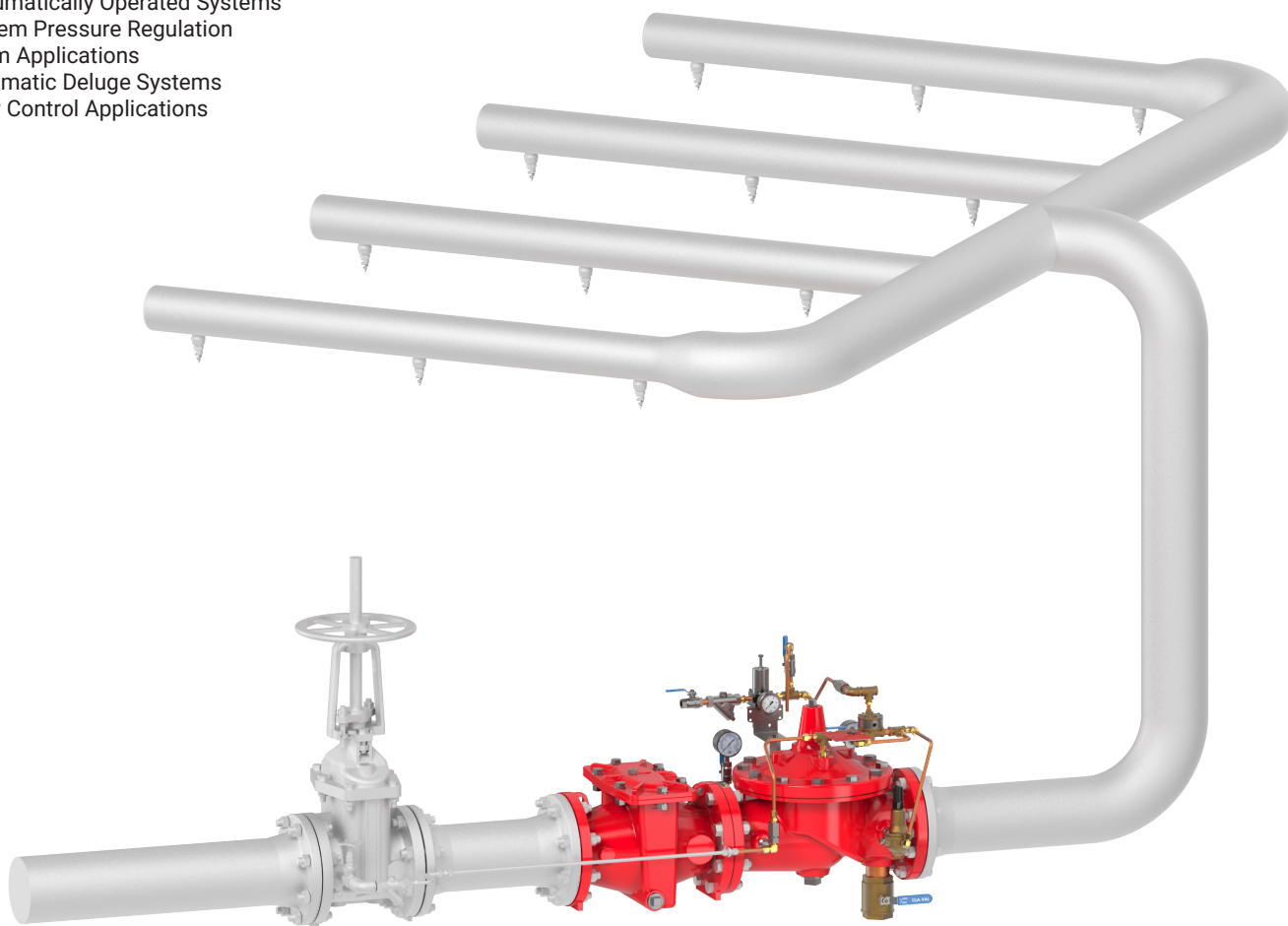
- **Nickel Aluminum Bronze (NAB)** ASTM B148 Alloy C95800
- **Monel - QQ-N-288 Comp B** ASTM A494 Grade M30H
- **316 Stainless Steel** ASTM A743 Grades CF3M and CFM8
- **Super Austenitic Stainless Steel** ASTM A351 Grade CK3MCuN (SMO 254)
- **Super Duplex Stainless Steel** ASTM A890 Grade 5A (CE3MN)

## Functional Data

| Value Size            |               | Inches            | 3    | 4   | 6     | 8     | 10   | 12    |
|-----------------------|---------------|-------------------|------|-----|-------|-------|------|-------|
|                       |               | mm                | 80   | 100 | 150   | 200   | 250  | 300   |
| C <sub>v</sub> Factor | Globe Pattern | Gal./Min. (gpm)   | 115  | 200 | 440   | 770   | 1245 | 1725  |
|                       |               | Litres/Sec. (l/s) | 27.6 | 48  | 105.6 | 184.8 | 299  | 414   |
|                       | Angle Pattern | Gal./Min. (gpm)   | 139  | 240 | 541   | 990   | 1575 | 2500* |
|                       |               | Litres/Sec. (l/s) | 33.4 | 58  | 130   | 238   | 378  | 600   |

## Typical Applications

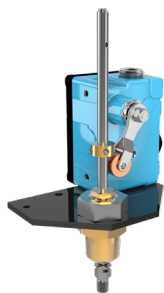
- Pneumatically Operated Systems
- System Pressure Regulation
- Foam Applications
- Automatic Deluge Systems
- Flow Control Applications



## Optional Features



Position Indicator



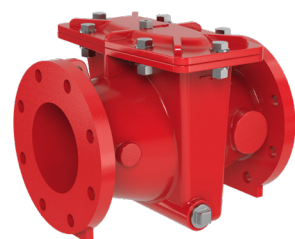
Limit Switch



Pressure Switch



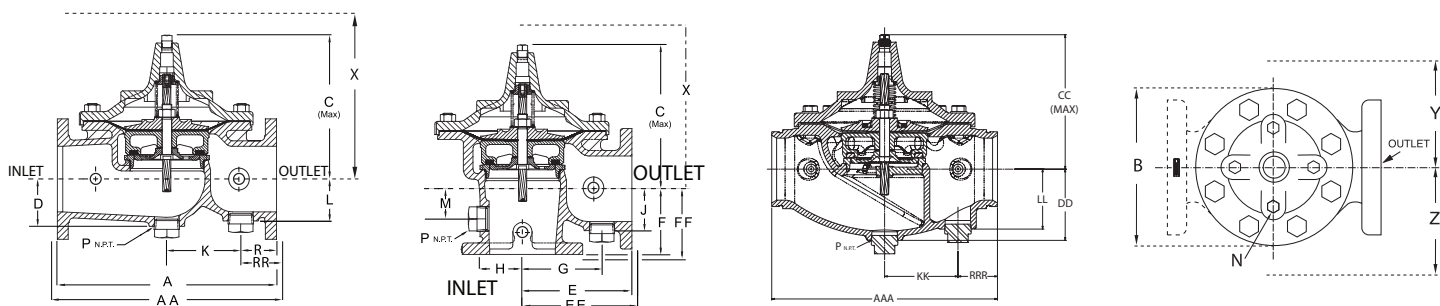
Pressure Gauge



Strainer  
(Not UL Listed)



## Dimensions



| Unit                  | inches         | mm        | inches     | mm         | inches     | mm         | inches     | mm         | inches     | mm         | inches     | mm         |
|-----------------------|----------------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| <b>Valve Size</b>     | <b>3</b>       | <b>80</b> | <b>4</b>   | <b>100</b> | <b>6</b>   | <b>150</b> | <b>8</b>   | <b>200</b> | <b>10</b>  | <b>250</b> | <b>12</b>  | <b>300</b> |
| <b>A</b> 150 ANSI     | 12.00          | 305       | 15.00      | 381        | 20.00      | 508        | 25.38      | 645        | 29.75      | 756        | 34.00      | 864        |
| <b>AA</b> 300 ANSI    | 13.25          | 337       | 15.62      | 397        | 21.00      | 533        | 26.38      | 670        | 31.12      | 791        | 35.50      | 902        |
| <b>AAA</b> Grooved    | 12.50          | 318       | 15.00      | 381        | 20.00      | 508        | 25.38      | 645        | 29.75      | 756        | —          | —          |
| <b>B</b> Dia.         | 9.12           | 232       | 11.50      | 292        | 15.75      | 400        | 20.00      | 508        | 23.62      | 600        | 28.00      | 711        |
| <b>C</b> Max.         | 8.19           | 208       | 10.62      | 270        | 13.38      | 340        | 16.00      | 406        | 17.12      | 435        | 21.00      | 533        |
| <b>CC</b> Max.        | 7.50           | 191       | 9.94       | 252        | 12.13      | 308        | 15.00      | 381        | —          | —          | —          | —          |
| <b>D</b>              | 2.56           | 65        | 3.19       | 81         | 4.31       | 110        | 5.16       | 131        | 8.50       | 216        | 9.39       | 239        |
| <b>DD</b>             | 3.62           | 92        | 4.50       | 114        | 6.31       | 160        | 7.81       | 198        | —          | —          | —          | —          |
| <b>E</b> 150 ANSI     | 7.00           | 178       | 8.50       | 216        | 10.00      | 254        | 12.69      | 322        | 14.88      | 378        | 17.00      | 432        |
| <b>EE</b> 300 ANSI    | —              | —         | 8.81       | 224        | 10.50      | 267        | 13.19      | 350        | —          | —          | 17.75      | 451        |
| <b>F</b> 150 ANSI     | 4.00           | 102       | 4.97       | 126        | 6.00       | 152        | 8.00       | 203        | 8.62       | 219        | 13.75      | 349        |
| <b>FF</b> 300 ANSI    | —              | —         | 5.28       | 134        | 6.50       | 165        | 8.50       | 216        | —          | —          | 14.50      | 368        |
| <b>L</b>              | 2.56           | 65        | 2.81       | 71         | 3.81       | 97         | 4.81       | 122        | 8.50       | 216        | 9.39       | 239        |
| <b>LL</b>             | 3.25           | 83        | 4.00       | 102        | 5.31       | 135        | 7.00       | 178        | —          | —          | —          | —          |
| <b>P</b> NPT          | 1-1/4 - 11-1/2 |           | 2 - 11-1/2 |            | 2 - 11-1/2 |            | 2 - 11-1/2 |            | 2 - 11-1/2 |            | 2 - 11-1/2 |            |
| <b>R</b> 150 ANSI     | 2.50           | 64        | 3.47       | 88         | 3.25       | 83         | 4.19       | 106        | 7.12       | 181        | 6.50       | 165        |
| <b>RR</b> 300 ANSI    | 3.12           | 79        | 3.78       | 96         | 3.75       | 95         | 4.69       | 119        | 7.81       | 198        | 7.25       | 184        |
| <b>RRR</b> Grooved    | 2.75           | 70        | 2.94       | 75         | 3.50       | 89         | 5.69       | 145        | —          | —          | —          | —          |
| <b>X</b> Pilot System | 15.00          | 381       | 17.00      | 432        | 29.00      | 737        | 31.00      | 787        | 33.00      | 838        | 35.00      | 889        |
| <b>Y</b> Pilot System | 11.00          | 279       | 12.00      | 305        | 20.00      | 508        | 22.00      | 559        | 24.00      | 610        | 26.00      | 660        |
| <b>Z</b> Pilot System | 11.00          | 279       | 12.00      | 305        | 20.00      | 508        | 22.00      | 559        | 24.00      | 610        | 26.00      | 660        |

## Model Number Codes

| Size | Main Valve |       | Service |             | Trim | Body |              | Trim |                 | Pilots |                             | Tubing & Fittings |                            | Elastomer | Flange |                | Face |       |
|------|------------|-------|---------|-------------|------|------|--------------|------|-----------------|--------|-----------------------------|-------------------|----------------------------|-----------|--------|----------------|------|-------|
| 3"   | 100        | Globe | G       | Firewater   | UDR  | D    | Ductile Iron | S    | Stainless Steel | B      | Bronze w/SST                | B                 | Copper with Brass Fittings | B         | Buna   | ANSI 150#      |      | RF    |
| 4"   | 2100       | Angle | GS      | Seawater    | UDD  | C    | Cast Steel   | T    | 316 SS (F)      | BM     | Bronze with Monel Internals | T                 | 316 SS (F)                 |           |        | ANSI 300#      |      | FF    |
| 6"   |            |       | F       | Foam**(F)** |      | T    | 316 SS       | M    | Bronze/ Monel   | T      | 316 SS (F)                  | M                 | Monel                      |           |        | ISO PN10       | X    | Other |
| 8"   |            |       |         |             |      | N    | N.A.B.       | U    | Super Duplex    | M      | Monel                       | U                 | 2507                       |           |        | ISO PN16       |      |       |
| 10"  |            |       |         |             |      | U    | Super Duplex | X    | Other           | U      | Super Duplex                | X                 | Other                      |           |        | ISO PN25       |      |       |
| 12"  |            |       |         |             |      | X    | Other        |      |                 | X      | Other                       |                   |                            |           |        | V Grooved 300# |      |       |

| Restriction Orifice |      | Strainer |      | Check Valve |       | Hytrol |           | Optional Features |                           |  |  |  |  |  |
|---------------------|------|----------|------|-------------|-------|--------|-----------|-------------------|---------------------------|--|--|--|--|--|
| R0                  | None | S3       | X43  | 0           | None  | 0      | None      | F                 | Indep. Operating Pressure |  |  |  |  |  |
| R58                 | X58C | S4       | X44  | CC          | CDC   | H2     | 100-02    | H                 | Drain to Atmosphere       |  |  |  |  |  |
|                     |      | S6       | X46A | C8          | 81-01 | H2A    | 102F/X103 | P                 | Pressure Gauge Assembly   |  |  |  |  |  |
|                     |      | S7       | X47A | CS          | SW200 |        |           | U                 | Pressure Switch Assembly  |  |  |  |  |  |
|                     |      |          |      |             |       |        |           | PT                | Pressure Transmitter      |  |  |  |  |  |
|                     |      |          |      |             |       |        |           | LS                | Limit Switch              |  |  |  |  |  |
|                     |      |          |      |             |       |        |           | PI                | Position Indicator        |  |  |  |  |  |
|                     |      |          |      |             |       |        |           | TL                | Test Loop                 |  |  |  |  |  |
|                     |      |          |      |             |       |        |           | ADC               | Automatic Drip Check      |  |  |  |  |  |
|                     |      |          |      |             |       |        |           | LPA               | Low Pressure Actuation    |  |  |  |  |  |
|                     |      |          |      |             |       |        |           | CLF               | Controlled Line Fill      |  |  |  |  |  |