

Electro-Pneumatically Controlled Deluge Valve

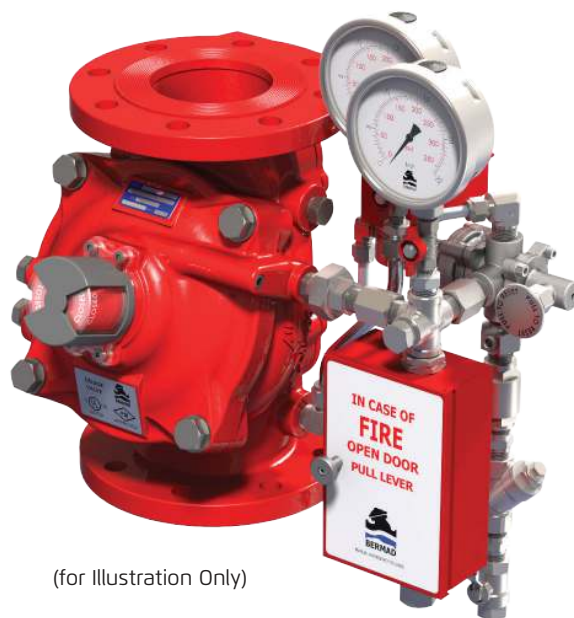
Model FP 400Y-6UM

The BERMAD model 400Y-6UM is an elastomeric, hydraulic, line pressure operated deluge valve, designed specifically for advanced fire protection systems and the latest industry standards.

The 400Y-6UM is activated by a 3-way solenoid valve, which in turn activates a pneumatic relay valve that latches the main valve open until locally reset.

The optional valve position indicator can include a limit switch suitable for Fire & Gas monitoring systems.

The 400Y-6UM is ideal in systems with open nozzles for water or foam discharge, and is available with electric components to suit any hazardous location.



(for Illustration Only)

Benefits and Features

- **Safety and reliability**
 - ▢ Time proven, simple, fail-safe actuation
 - ▢ Single piece, rugged elastomeric diaphragm seal - VRSD technology
 - ▢ Obstacle-free, uninterrupted flow path
 - ▢ No mechanical moving parts
 - ▢ Valve position limit switches (optional)
 - ▢ Local valve position indicator beacon (optional)
- **High performance**
 - ▢ Very high flow efficiency
 - ▢ Straight through flow Y- type body
 - ▢ Approved for PN25 / 365 psi
- **Designed for fire protection**
 - ▢ Face-to-face length standardized to ISO 5752 / EN558-1
 - ▢ Latches open until locally reset
 - ▢ Meets the requirements of the industry standards
- **Quick and easy maintenance**
 - ▢ In-line serviceable
 - ▢ Quick cover removal without detaching control trim *
 - ▢ Swivel mounted drain valves*

* not including 1½" & 2" valves

Typical Applications

- Electric fire detection systems with control panels
- Automatic water spray
- Foam applications
- Corrosive water systems

Approvals



UL-Listed
Special System Water Control
Valves, Deluge Type (VLFT)



FM Approved
for Deluge Sprinkler Systems



Det Norske Veritas
Type Approval



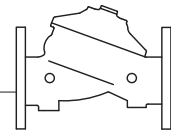
ABS
American Bureau of Shipping
Type Approval



Lloyd's Register
Type Approval

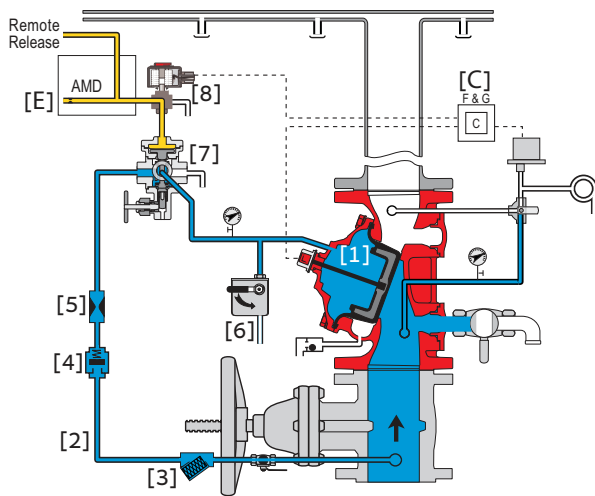
Additional Features

- Valve position limit switches
- Air maintenance device
- Local valve position indicator beacon
- Seawater compatibility
- Stainless steel seat ring
- Additional downstream drain valve

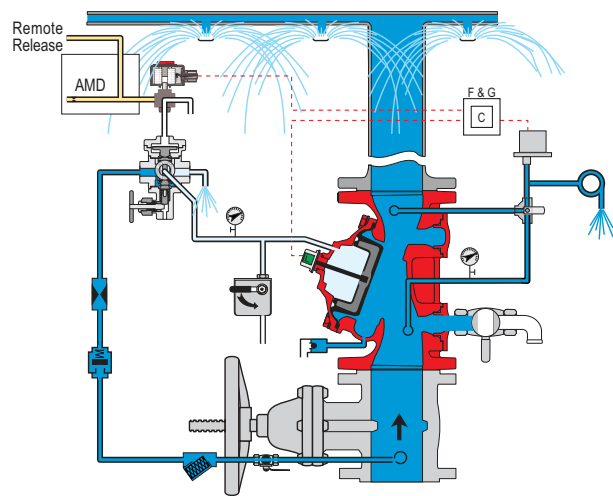


Operation

(for Illustration Only)



Valve Closed (normal conditions)



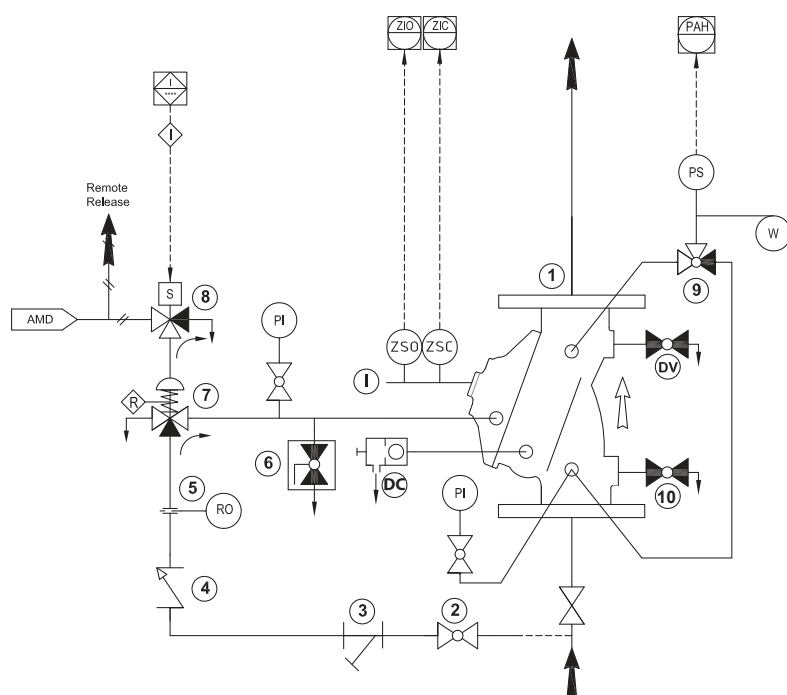
Valve Open (fire conditions)

The BERMAD model 400Y-6UM is held closed by water pressure in the control chamber [1]. Upon release of pressure from the control chamber, the valve opens.

Under NORMAL conditions, water pressure is supplied to the control chamber via the priming line [2] and strainer [3], and is then trapped in the control chamber by a check valve [4], restriction orifice [5], manual emergency release [6], and a latching relay valve (URV-M) [7] that is held in the supply position by pneumatic pressure supplied through a three-way solenoid valve [8]. The water pressure trapped in the control chamber of the deluge valve holds the diaphragm against the valve seat, sealing it drip-tight and keeping the system pipes dry.

Under FIRE conditions, water pressure is released from the control chamber, either with the manual emergency release, or by the URV switching to the release position. The URV switches position in response either to a decrease in pneumatic line pressure [E] or to the solenoid valve being activated by the fire & gas control system [C]. This opens the deluge valve allowing water to flow into the system piping and to the alarm device. The deluge valve will remain open until reset locally.

System P&ID



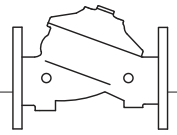
Components

- | | |
|---|--------------------------|
| 1 | BERMAD 400Y Deluge Valve |
| 2 | Priming Ball Valve |
| 3 | Priming Strainer |
| 4 | Check Valve |
| 5 | Restriction Orifice |
| 6 | Manual Emergency Release |
| 7 | URV-3-M relay valve |
| 8 | 3-Way Solenoid Valve |

Optional System Items

- | | |
|-----|------------------------------|
| ZS | Limit Switch Assembly |
| I | Visual Indicator |
| DV | Additional Drain Valve |
| W | Water Motor Alarm |
| PS | Pressure Switch |
| AMD | Air Maintenance Device |
| 9 | 3-Way Alarm Test Ball Valve* |
| DC | Automatic Drip Check Valve* |
| 10 | Drain Valve* |
| PI | Pressure Gauge* |

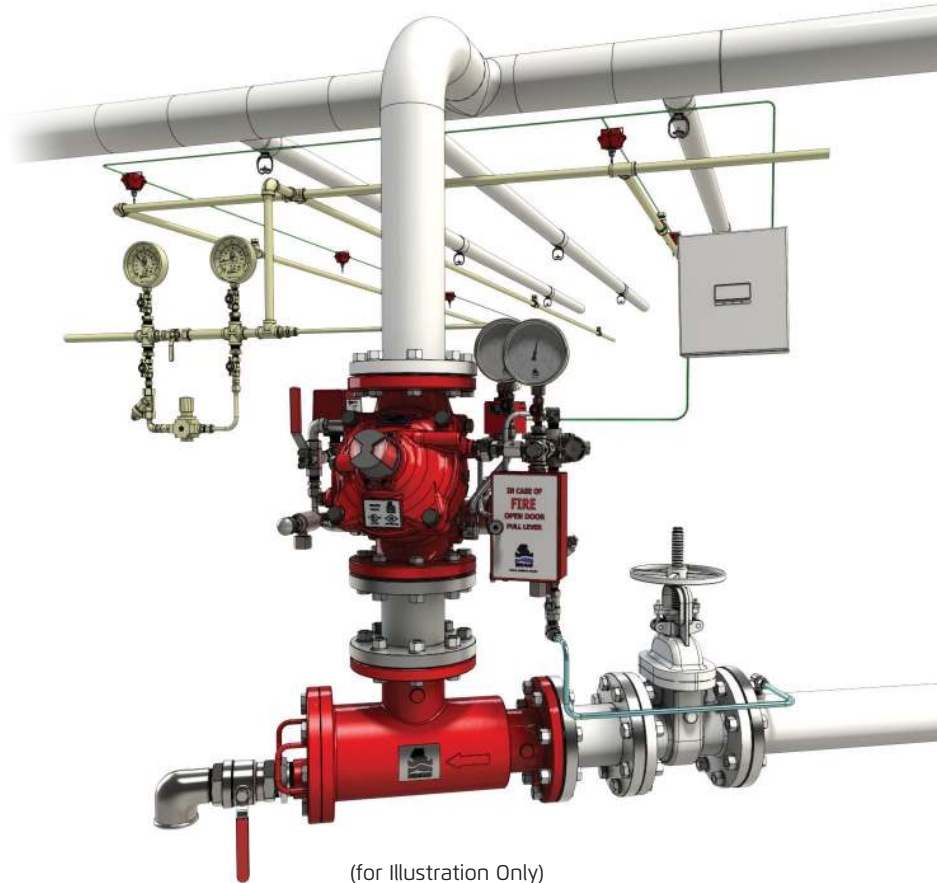
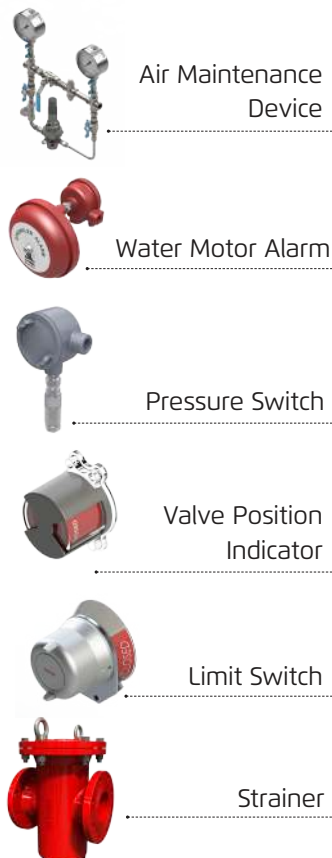
*Mandatory for FM approval
(suffix A in code designations on page 4)



System Installation

A typical installation of the BERMAD model 400Y-6UM features automatic actuation via a pneumatic universal relay valve, triggered by a pneumatic fusible plug loop. It can also be triggered electrically by a signal from a fire & gas control system or an on-site emergency pushbutton. When open and fitted with a limit switch the valve can send a feedback signal to a remote valve status monitoring system.

Optional System Items



Engineering Specifications

The deluge valve shall be UL-listed and FM-approved, 25-bar/365-psi rated, with a straight-through, Y-type-body.

The valve shall have an unobstructed flow path, with no stem guide or supporting ribs.

Valve actuation shall be accomplished by a single-piece, rolling diaphragm bonded with a rugged radial seal disk. The diaphragm assembly shall be the only moving part.

The deluge valve shall include a relay pilot valve, a FM approved 3-way solenoid valve with a tolerance of 35% below the rated voltage, a Y-type strainer, a ball drain valve, an automatic drip-check with manual override, 4-inch pressure gauges, and a manual emergency release housed in a stainless steel box.

The valve drain socket shall be flanged and have 360-degree swivel.

The valve shall be equipped with a protective-covered, dual-color, rotational position indicator, readable from 50 meters, and with two limit switches enclosed in a protective switch box.

Removing the valve cover for inspection or maintenance shall not require removing the control trim.

The deluge valve and its entire control trim shall be supplied pre-assembled and hydraulically tested by a factory certified to ISO 9000 and 9001 standards.

Technical Data

Available Sizes (inch)

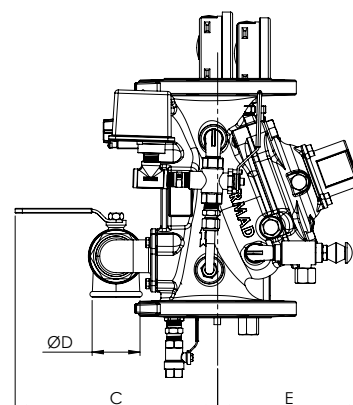
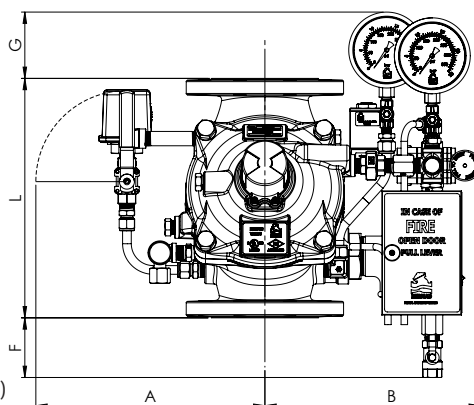
- Flanged - 1½, 2, 3, 4, 6, 8, 10, 12, 14 & 16"
- Grooved - 2, 3, 4, 6 & 8"
- Threaded - 1½ & 2"

Pressure Rating

- ANSI#150 - 16 bar / 235 psi
- ANSI#300 - 1½" to 10" 25 bar / 365 psi
12" to 16" 20 bar / 300 psi
- Grooved/Threaded - 25 bar / 365 psi

Temperature Rating

- 60°C / 140°F with NR elastomers (standard)
- 90°C / 194°F with EPDM elastomers



| Size | 1½" DN40 | | 2" DN50 | | 3" DN80 | | 4" DN100 | | 6" DN150 | | 8" DN200 | | 10" DN250 | | 12" DN300 | | 14" DN350 | | 16" DN400 | |
|-----------------------------|-------------|------|-------------|------|-------------|------|------------|------|------------|------|-------------|------|-------------|------|-------------|------|-------------|------|-------------|------|
| Unit | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in |
| L ⁽¹⁾ | 230 | 9.1 | 230 | 9.1 | 310 | 12.2 | 350 | 13.8 | 480 | 18.9 | 600 | 23.6 | 730 | 28.7 | 850 | 33.5 | 980 | 38.6 | 1100 | 43.3 |
| L ⁽²⁾ | 230 | 9.1 | 235 | 9.3 | 326 | 12.8 | 368 | 14.5 | 506 | 19.9 | 626 | 24.7 | 730 | 28.8 | 850 | 33.5 | 980 | 38.6 | 1100 | 43.3 |
| A | 279 | 11.0 | 279 | 11.0 | 339 | 13.3 | 347 | 13.7 | 400 | 15.7 | 430 | 16.9 | 430 | 16.9 | 543 | 21.4 | 543 | 21.4 | 543 | 21.4 |
| B | 240 | 9.4 | 240 | 9.4 | 298 | 11.7 | 295 | 11.6 | 363 | 14.3 | 391 | 15.4 | 391 | 15.4 | 504 | 19.8 | 504 | 19.8 | 504 | 19.8 |
| C | 241 | 9.5 | 241 | 9.5 | 274 | 10.8 | 290 | 11.4 | 305 | 12.0 | 320 | 12.6 | 320 | 12.6 | 383 | 15.1 | 383 | 15.1 | 408 | 16.1 |
| ØD | ¾" | | ¾" | | 1½" | | 2" | | 2" | | 2" | | 2" | | 2" | | 2" | | 2" | |
| E | 120 | 4.7 | 120 | 4.7 | 146 | 5.7 | 158 | 6.2 | 228 | 9.0 | 295 | 11.6 | 295 | 11.6 | 441 | 17.4 | 441 | 17.4 | 415 | 16.3 |
| F | 119 | 4.7 | 119 | 4.7 | 49 | 1.9 | 22 | 0.9 | - | - | - | - | - | - | - | - | - | - | - | - |
| G | 101 | 4.0 | 101 | 4.0 | 91 | 3.6 | 78 | 3.1 | 29.5 | 1.2 | - | - | - | - | - | - | - | - | - | - |
| Kv / Cv | 68 / 79 | | 80 / 92 | | 190 / 219 | | 345 / 398 | | 790 / 912 | | 1160 / 1340 | | 1355 / 1565 | | 2370 / 2737 | | 2850 / 3292 | | 3254 / 3758 | |
| Leq ⁽³⁾ : m / ft | 2 / 7 | | 5 / 16 | | 7 / 23 | | 9 / 30 | | 15 / 49 | | 27 / 89 | | 62 / 203 | | 52 / 171 | | 59 / 194 | | 88 / 289 | |
| kg / lb Approx | 22.2 / 48.8 | | 23.6 / 51.9 | | 38.3 / 84.3 | | 48.3 / 106 | | 91.6 / 201 | | 155 / 341 | | 185 / 407 | | 328 / 721 | | 361 / 794 | | 407 / 895 | |

Notes: ⁽¹⁾ Refers to the length dimensions for Raised Face ANSI #150, ISO 16 Flanged, Threaded and Grooved valves

⁽²⁾ Refers to the length dimensions for Raised Face ANSI #300 and ISO 25 Flanged valves

⁽³⁾ Leq (Equivalent Pipe Length) refers to turbulent flow in new steel pipe schedule 40, values given for general consideration only

⁽⁴⁾ Dimensions for the trim envelope may vary with specific component positioning

Valve Code Designations

| FP | 6" | 400Y-6UM | V | C | A5 | PR | 4DC | NN | P79RI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------|----------|------|----------|----|----------|-----|------------------|-------|--|--|--------------|------|----------|---|------------|---|---|--|---------|------|---------------|----|------------------|----|----------|----|---|--|------------------------|------|--|---|-------------------------------------|----|---------------------------|----|------------------------------------|------|------------------------------------|-----|----------------------------------|----|-------------------------|---|--------------------------------------|----|-------------------------------|----|-------------------------------------|---|---------------------|---|-------------|----|---|---|------------------------|----|-----------------------|----|----------------------|---|--------------------------|----|--------------------|---|--------------------------|---|--------------------------|---|----------------------|---|--|---|---|--|--------------------------------------|------|---------------------------------------|---|------------------------------------|---|--------------------------|---|-------------------------|---|-----------------------|---|--|--|-----------------|------|------------|----|------------|----|------------|----|----------|----|----------|----|-------------------|----|--|--|--|--|--------------|-----|--------------|-----|---------------|-----|---------------|-----|-------------------|-----|-------------------|-----|-------------------|-----|-------------------|-----|--|--|-------------------|------|---------------------|----|-----------|----|--------------|----|
| <table><tr><th>Category</th><th>code</th></tr><tr><td>Standard</td><td>FP</td></tr><tr><td>Seawater</td><td>FS</td></tr><tr><td>Foam Concentrate</td><td>FC</td></tr></table> | | Category | code | Standard | FP | Seawater | FS | Foam Concentrate | FC | <table><tr><th>Installation</th><th>code</th></tr><tr><td>Vertical</td><td>V</td></tr><tr><td>Horizontal</td><td>H</td></tr></table> | | Installation | code | Vertical | V | Horizontal | H | <table><tr><th>Coating</th><th>code</th></tr><tr><td>Polyester Red</td><td>PR</td></tr><tr><td>High Build Epoxy</td><td>ER</td></tr><tr><td>Uncoated</td><td>UC</td></tr></table> | | Coating | code | Polyester Red | PR | High Build Epoxy | ER | Uncoated | UC | <table><tr><th>Factory Fitted Options</th><th>Code</th></tr><tr><td>General Purpose NEMA-4 Pressure Switch</td><td>P</td></tr><tr><td>Ex Proof NEC, Div.1 Pressure Switch</td><td>P7</td></tr><tr><td>Ex d ATEX Pressure Switch</td><td>P9</td></tr><tr><td>Double Ex d Proximity Limit Switch</td><td>RS59</td></tr><tr><td>Single Ex d Proximity Limit Switch</td><td>RS9</td></tr><tr><td>Limit Switch Box General Purpose</td><td>RS</td></tr><tr><td>Pressure Gauge Assembly</td><td>6</td></tr><tr><td>S.S Glycerin Pressure Gauge Assembly</td><td>6n</td></tr><tr><td>Monel Pressure Gauge Assembly</td><td>6m</td></tr><tr><td>Ex Proof NEC Class 1 Div 1 Solenoid</td><td>7</td></tr><tr><td>E x d ATEX solenoid</td><td>9</td></tr><tr><td>Drain valve</td><td>DV</td></tr><tr><td>Water Motor Alarm Assembly ⁽⁴⁾</td><td>W</td></tr><tr><td>Special Elastomer EPDM</td><td>E1</td></tr><tr><td>Special Elastomer NBR</td><td>E3</td></tr><tr><td>Large Control Filter</td><td>F</td></tr><tr><td>Valve Position Indicator</td><td>RI</td></tr><tr><td>S.S Solenoid Valve</td><td>K</td></tr><tr><td>S.S 316 Trim Accessories</td><td>N</td></tr><tr><td>Stainless Steel 316 Seat</td><td>T</td></tr><tr><td>Pressure Transmitter</td><td>Q</td></tr><tr><td>Drain and Indicating Components ⁽⁵⁾</td><td>A</td></tr></table> | | Factory Fitted Options | Code | General Purpose NEMA-4 Pressure Switch | P | Ex Proof NEC, Div.1 Pressure Switch | P7 | Ex d ATEX Pressure Switch | P9 | Double Ex d Proximity Limit Switch | RS59 | Single Ex d Proximity Limit Switch | RS9 | Limit Switch Box General Purpose | RS | Pressure Gauge Assembly | 6 | S.S Glycerin Pressure Gauge Assembly | 6n | Monel Pressure Gauge Assembly | 6m | Ex Proof NEC Class 1 Div 1 Solenoid | 7 | E x d ATEX solenoid | 9 | Drain valve | DV | Water Motor Alarm Assembly ⁽⁴⁾ | W | Special Elastomer EPDM | E1 | Special Elastomer NBR | E3 | Large Control Filter | F | Valve Position Indicator | RI | S.S Solenoid Valve | K | S.S 316 Trim Accessories | N | Stainless Steel 316 Seat | T | Pressure Transmitter | Q | Drain and Indicating Components ⁽⁵⁾ | A | <table><tr><th>Material Body & Cover ⁽¹⁾</th><th>code</th></tr><tr><td>Ductile Iron ASTM A356 ⁽²⁾</td><td>C</td></tr><tr><td>Steel ASTM A216 WCB ⁽²⁾</td><td>S</td></tr><tr><td>Stainless Steel 316 ASTM</td><td>N</td></tr><tr><td>Nickel Al Bronze C95800</td><td>U</td></tr><tr><td>Super Duplex Grade 5A</td><td>D</td></tr></table> | | Material Body & Cover ⁽¹⁾ | code | Ductile Iron ASTM A356 ⁽²⁾ | C | Steel ASTM A216 WCB ⁽²⁾ | S | Stainless Steel 316 ASTM | N | Nickel Al Bronze C95800 | U | Super Duplex Grade 5A | D | <table><tr><th>End Connections</th><th>code</th></tr><tr><td>ANSI#150RF</td><td>A5</td></tr><tr><td>ANSI#150FF</td><td>a5</td></tr><tr><td>ANSI#300RF</td><td>A3</td></tr><tr><td>ISO PN16</td><td>16</td></tr><tr><td>ISO PN25</td><td>25</td></tr><tr><td>Grooved ANSI C606</td><td>VI</td></tr></table> | | End Connections | code | ANSI#150RF | A5 | ANSI#150FF | a5 | ANSI#300RF | A3 | ISO PN16 | 16 | ISO PN25 | 25 | Grooved ANSI C606 | VI | <table><tr><th>Voltage ⁽³⁾ - Main Valve N.O or N.C</th><th></th></tr><tr><td>24VDC - N.C.</td><td>4DC</td></tr><tr><td>24VDC - N.O.</td><td>4DO</td></tr><tr><td>110VDC - N.C.</td><td>5DC</td></tr><tr><td>110VDC - N.O.</td><td>5DO</td></tr><tr><td>110-120/AC - N.C.</td><td>5AC</td></tr><tr><td>110-120/AC - N.O.</td><td>5AO</td></tr><tr><td>220-240/AC - N.C.</td><td>2AC</td></tr><tr><td>220-240/AC - N.O.</td><td>2AO</td></tr></table> | | Voltage ⁽³⁾ - Main Valve N.O or N.C | | 24VDC - N.C. | 4DC | 24VDC - N.O. | 4DO | 110VDC - N.C. | 5DC | 110VDC - N.O. | 5DO | 110-120/AC - N.C. | 5AC | 110-120/AC - N.O. | 5AO | 220-240/AC - N.C. | 2AC | 220-240/AC - N.O. | 2AO | <table><tr><th>Tubing & Fittings</th><th>Code</th></tr><tr><td>Stainless Steel 316</td><td>NN</td></tr><tr><td>Monel 400</td><td>MM</td></tr><tr><td>Super Duplex</td><td>DD</td></tr></table> | | Tubing & Fittings | Code | Stainless Steel 316 | NN | Monel 400 | MM | Super Duplex | DD |
| Category | code | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Standard | FP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Seawater | FS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Foam Concentrate | FC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Installation | code | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vertical | V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Horizontal | H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coating | code | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polyester Red | PR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| High Build Epoxy | ER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Uncoated | UC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Factory Fitted Options | Code | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| General Purpose NEMA-4 Pressure Switch | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex Proof NEC, Div.1 Pressure Switch | P7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex d ATEX Pressure Switch | P9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Double Ex d Proximity Limit Switch | RS59 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Single Ex d Proximity Limit Switch | RS9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Limit Switch Box General Purpose | RS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pressure Gauge Assembly | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S.S Glycerin Pressure Gauge Assembly | 6n | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Monel Pressure Gauge Assembly | 6m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex Proof NEC Class 1 Div 1 Solenoid | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E x d ATEX solenoid | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Drain valve | DV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Motor Alarm Assembly ⁽⁴⁾ | W | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Special Elastomer EPDM | E1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Special Elastomer NBR | E3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Large Control Filter | F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Valve Position Indicator | RI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S.S Solenoid Valve | K | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S.S 316 Trim Accessories | N | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stainless Steel 316 Seat | T | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pressure Transmitter | Q | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Drain and Indicating Components ⁽⁵⁾ | A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Material Body & Cover ⁽¹⁾ | code | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ductile Iron ASTM A356 ⁽²⁾ | C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Steel ASTM A216 WCB ⁽²⁾ | S | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stainless Steel 316 ASTM | N | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nickel Al Bronze C95800 | U | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Super Duplex Grade 5A | D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| End Connections | code | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSI#150RF | A5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSI#150FF | a5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSI#300RF | A3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ISO PN16 | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ISO PN25 | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Grooved ANSI C606 | VI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Voltage ⁽³⁾ - Main Valve N.O or N.C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24VDC - N.C. | 4DC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24VDC - N.O. | 4DO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 110VDC - N.C. | 5DC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 110VDC - N.O. | 5DO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 110-120/AC - N.C. | 5AC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 110-120/AC - N.O. | 5AO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 220-240/AC - N.C. | 2AC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 220-240/AC - N.O. | 2AO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tubing & Fittings | Code | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stainless Steel 316 | NN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Monel 400 | MM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Super Duplex | DD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes:

⁽¹⁾ Other materials available, see engineering data

⁽²⁾ Coated internally and externally

⁽³⁾ FM approved with 24VDC only

⁽⁴⁾ Supplied loose

⁽⁵⁾ Mandatory for FM approved valves

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