

# FireLock™ High Pressure Butterfly Valve

## Series 765 with Weatherproof Actuator – Supervised Open



### 1.0 PRODUCT DESCRIPTION

#### Available Sizes

- 2 – 12"/DN50 – DN300

#### Pipe Material

- Carbon Steel, Schedule 10, Schedule 40. For use with alternative material please contact Victaulic

#### Maximum Working Pressure

- Up to 365 psi/2517 kPa/25 bar

#### Application

- High pressure butterfly valve with an approved weatherproof actuator housing for indoor and outdoor use
- Designed for fire protection services only
- Designed to be supervised open
- Exclusively for use with pipe and Victaulic products which feature ends formed with the Victaulic Original Groove System (OGS) groove profile (see section 7.0 for Reference Materials)

#### Available End Connection

- Victaulic Original Groove System (OGS) standard groove

### 2.0 CERTIFICATION/LISTINGS



ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.



## 2.0 CERTIFICATION/LISTINGS (CONTINUED)

Size		Approval/Listing Service Pressures				
Nominal  inches DN	Actual Outside Diameter  inches mm	Series 765 Butterfly Valve				
		cULus psi kPa	FM psi kPa	VdS psi kPa	LPCB psi kPa	CCC psi kPa
2 DN50	2.375 60.3	365 2517	365 2517	365 2517	365 2517	363 2500
2½	2.875 73.0	365 2517	365 2517	–	365 2517	–
DN65	3.000 76.1	365 2517	365 2517	365 2517	365 2517	363 2500
3 DN80	3.500 88.9	365 2517	365 2517	365 2517	365 2517	363 2500
	4.250 108.0	365 2517	365 2517	–	365 2517	–
4 DN100	4.500 114.3	365 2517	365 2517	365 2517	365 2517	363 2500
	5.250 133.0	365 2517	365 2517	–	365 2517	–
DN125	5.500 139.7	365 2517	365 2517	365 2517	365 2517	–
5	5.563 141.3	365 2517	365 2517	–	365 2517	–
	6.250 159.0	365 2517	365 2517	–	365 2517	–
	6.500 165.1	365 2517	365 2517	–	365 2517	363 2500
6 DN150	6.625 168.3	365 2517	365 2517	365 2517	365 2517	–
8 DN200	8.625 219.1	365 2517	365 2517	365 2517	365 2517	363 2500
10 DN250	10.750 273.0	365 2517	300 2068	–	365 2517	363 2500
12 DN300	12.750 323.9	365 2517	300 2068	–	365 2517	–

## 3.0 SPECIFICATIONS – MATERIAL

**Body:** Ductile iron conforming to ASTM A536, Grade 65-45-12.

**End Face, 2 – 6"/DN50 – DN150:** Ductile iron conforming to ASTM A536, Grade 65-45-12

**Seal Retainer, 8 – 12"/DN200 – DN300:** Ductile iron conforming to ASTM A536, Grade 65-45-12

**Coating:** Black alkyd enamel

**Disc:** Ductile iron conforming to ASTM A536, Grade 65-45-12, with electroless nickel coating conforming to ASTM B733

**Seat:** EPDM

**Stem Seal Cartridge:** Brass

**Bearings:** Stainless steel with TFE lining

**Stem Seals:** Nitrile

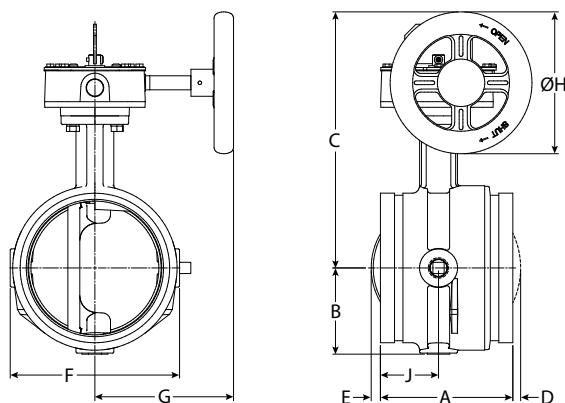
**Stem Retaining Ring:** Carbon steel

**Actuator:**

- **2 – 8"/DN50 – DN200:** Bronze traveling nut on a steel lead screw, in a ductile iron housing
- **10 – 12"/DN250 – DN300:** Steel worm and cast iron quadrant gear, in a cast iron housing

## 4.0 DIMENSIONS

### Series 765



Size		Dimensions									Weight
Nominal	Outside Diameter	End to End									Approx. Each
inches DN	inches mm	A inches mm	B inches mm	C inches mm	D inches mm	E inches mm	F inches mm	G inches mm	H inches mm	J inches mm	lb kg
2	2.375	4.25	2.28	6.41	—	—	4.00	4.22	4.50	2.12	8.2
DN50	60.3	108	58	163	—	—	102	107	114	54	3.7
2½	2.875	3.77	2.28	7.54	—	—	4.00	4.22	4.50	1.77	9.7
	73.0	96	58	192	—	—	102	107	114	45	4.4
DN65	3.000	3.77	2.28	7.54	—	—	4.00	4.22	4.50	1.77	9.7
	76.1	96	58	192	—	—	102	107	114	45	4.4
3	3.500	3.77	2.53	7.79	—	—	4.50	4.22	4.50	1.77	10.7
DN80	88.9	96	64	198	—	—	114	107	114	45	4.9
	4.250	4.63	2.88	8.81	—	—	5.50	4.22	4.50	2.20	14.0
	108.0	118	73	224	—	—	140	107	114	56	6.4
4	4.500	4.63	2.88	8.81	—	—	5.50	4.22	4.50	2.20	14.0
DN100	114.3	118	73	224	—	—	140	107	114	56	6.4
	5.250	5.88	3.35	10.88	—	—	6.56	6.19	6.30	2.58	25.4
	133.0	149	85	276	—	—	167	157	160	66	11.5
DN125	5.500	5.88	3.35	10.88	—	—	6.56	6.19	6.30	2.58	25.4
	139.7	149	85	276	—	—	167	157	160	66	11.5
5	5.563	5.88	3.35	10.88	—	—	6.56	6.19	6.30	2.58	25.4
	141.3	149	85	276	—	—	167	157	160	66	11.5
	6.250	5.88	3.84	11.38	—	0.41	7.52	6.19	6.30	2.58	28.7
	159.0	149	98	289	—	10	191	157	160	66	13.0
	6.500	5.88	3.84	11.38	—	0.41	7.52	6.19	6.30	2.58	28.7
	165.1	149	98	289	—	10	191	157	160	66	13.0
6	6.625	5.88	3.84	11.38	—	0.41	7.52	6.19	6.30	2.58	28.7
DN150	168.3	149	98	289	—	10	191	157	160	66	13.0
8	8.625	5.33	5.07	12.63	0.80	1.47	10.00	6.19	6.30	2.33	43.0
DN200	219.1	135	129	321	20	37	254	157	160	59	19.5
10	10.750	6.40	6.37	15.64	1.41	1.81	12.25	8.10	9.00	—	80.6
DN250	273.0	163	162	397	36	46	311	206	229	—	36.5
12	12.750	6.50	7.36	16.64	2.30	2.80	14.25	8.10	9.00	—	94.6
DN300	323.9	165	187	423	58	71	362	206	229	—	42.9

#### NOTE

- Optional ½"/15mm tap available for all sizes. Contact Victaulic for details.

## 5.0 PERFORMANCE

### Series 765

The chart expresses the frictional resistance of Victaulic FireLock™ Series 765 High Pressure Butterfly Valve in equivalent feet/meters of straight pipe.

Size		Equivalent Feet/M of Pipe
Nominal inches mm	Actual Outside Diameter inches mm	
2 DN50	2.375 60.3	6 1.8
2 ½	2.875 73.0	6 1.8
DN65	3.000 76.1	6 1.8
3 DN80	3.500 88.9	7 2.1
	4.250 108.0	8 2.4
4 DN100	4.500 114.3	8 2.4
	5.250 133.0	12 3.7
DN125	5.500 139.7	12 3.7
5	5.563 141.3	12 3.7
	6.250 159.0	14 4.3
	6.500 165.1	14 4.2
6 DN150	6.625 168.3	14 4.2
8 DN200	8.625 219.1	16 4.9
10 DN250	10.750 273.0	18 5.5
12 DN300	12.750 323.9	19 5.8

## 5.1 PERFORMANCE

### Series 765

C<sub>v</sub> values for flow of water at +60°F/+16°C with a fully open valve are shown in the table below. For additional details, contact Victaulic.

#### Formulas for C<sub>v</sub> Values:

$$\Delta P = \frac{Q^2}{C_v^2}$$

$$Q = C_v \times \sqrt{\Delta P}$$

#### Where:

Q = Flow (GPM)

ΔP = Pressure Drop (psi)

C<sub>v</sub> = Flow Coefficient

#### Formulas for K<sub>v</sub> Values:

$$\Delta P = \frac{Q^2}{K_v^2}$$

$$Q = K_v \times \sqrt{\Delta P}$$

#### Where:

Q = Flow (m<sup>3</sup>/hr)

ΔP = Pressure Drop (Bar)

K<sub>v</sub> = Flow Coefficient

Size		Flow Coefficient
Nominal inches mm	Actual Outside Diameter inches mm	Full Open C <sub>v</sub> K <sub>v</sub>
2	2.375	170
DN50	60.3	147
2 ½	2.875	260
	73.0	225
DN65	3.000	260
	76.1	225
3	3.500	440
DN80	88.9	380
	4.250	820
	108.0	710
4	4.500	820
DN100	114.3	710
	5.250	1200
	133.0	1040
DN125	5.500	1200
	139.7	1040
5	5.563	1200
	141.3	1040
	6.250	1800
	159.0	1560
	6.500	1800
	165.1	1560
6	6.625	1800
DN150	168.3	1560
8	8.625	3400
DN200	219.1	2940
10	10.750	5800
DN250	273.0	5020
12	12.750	9000
DN300	323.9	7790

## 6.0 NOTIFICATIONS

### WARNING



- Read and understand all instructions before attempting to install any Victaulic products.
- Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
- Wear safety glasses, hardhat, and foot protection.

Failure to follow these instructions could result in death or serious personal injury and property damage.

- These products shall be used only in fire protection systems that are designed and installed in accordance with current, applicable National Fire Protection Association (NFPA 13, 13D, 13R, etc.) standards, or equivalent standards, and in accordance with applicable building and fire codes. These standards and codes contain important information regarding protection of systems from freezing temperatures, corrosion, mechanical damage, etc.
- The installer shall understand the use of this product and why it was specified for the particular application.
- The installer shall understand common industry safety standards and potential consequences of improper product installation.
- It is the system designer's responsibility to verify suitability of materials for use with the intended fluid media within the piping system and external environment.
- The material specifier shall evaluate the effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on materials to confirm system life will be acceptable for the intended service.

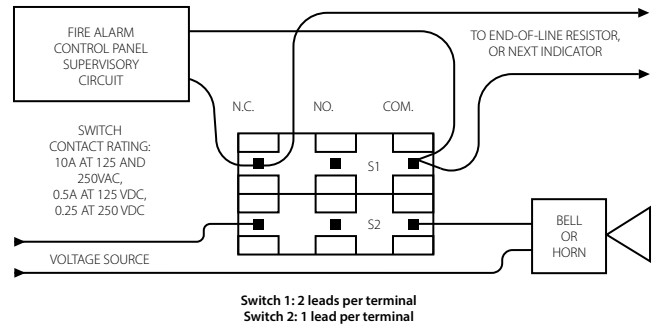
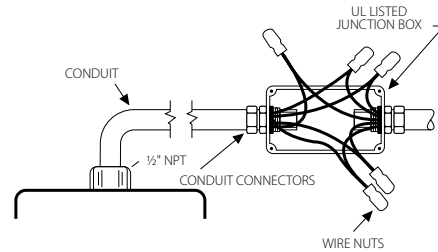
Failure to follow installation requirements and local and national codes and standards could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.

## 7.0 REFERENCE MATERIALS

### Switch and Wiring

1. The supervisory switch contains two, single pole, double throw, pre-wired switches.
2. Switches are rated:  
10 amps @ 125 or 250 VAC/60 Hz  
0.50 amps @ 125 VDC  
0.25 amps @ 250 VDC
3. Switches supervise the valve in the “open” position.
4. One switch has two #18 MTW wires per terminal, which permit complete supervision of leads (refer to diagrams and notes below). The second switch has one #18 MTW wire per terminal. This double circuit provides flexibility to operate two electrical devices at separate locations, such as an indicating light and an audible alarm, in the area that the valve is installed.
5. A #14 MTW ground lead (green) is provided.  
Switch #1 = S1 For connection to the supervisory circuit of a UL Listed alarm control panel  
Switch #2 = S2 Auxiliary switch that may be connected to auxiliary devices, per the authority having jurisdiction

S1	{	Normally Closed: (2) Blue
		Common: (2) Yellow
S2	{	Normally Closed: Blue with Orange Stripe
		Normally Open: Brown with Orange Stripe
		Common: Yellow with Orange Stripe



#### NOTES

- The above diagram shows a connection between the common terminal (yellow – S1 and yellow-with-orange stripe – S2) and the normally closed terminal (blue – S1 and blue-with-orange stripe – S2). In this example, the indicator light and alarm will stay on until the valve is fully open. When the valve is fully open, the indicator light and alarm will go out. Cap off any unused wires (e.g. brown with orange stripe).
- Only S1 (two leads per terminal) may be connected to the fire alarm control panel.
- The connection of the alarm switch wiring shall be in accordance with NFPA 72 and the auxiliary switch per NFPA 70 (NEC).

## 7.1 REFERENCE MATERIALS

- [29.01: Victaulic Terms and Conditions of Sale](#)
- [I-100: Victaulic Field Installation Handbook](#)
- [10.01: Regulatory Approval Reference Guide](#)
- [10.81: FireLock™ Butterfly Valve Series 705 with Weatherproof Actuator](#)

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**User Responsibility for Product Selection and Suitability**

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, and the applicable building codes and related regulations as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

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**Note**

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

**Installation**

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at [www.victaulic.com](http://www.victaulic.com).

**Warranty**

Refer to the Warranty section of the current Price List or contact Victaulic for details.

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