

FireLock™ High Pressure Butterfly Valve Series 765 with Weatherproof Actuator



1.0 PRODUCT DESCRIPTION

Available Sizes

- 2 – 12"/DN50 – DN300

Maximum Working Pressure

- Up to 365 psi/2517 kPa/25 bar

Application

- High pressure butterfly valve with an approved weatherproof actuator housing for indoor or outdoor use
- Designed for fire protection services only.

2.0 CERTIFICATION/LISTINGS



LPS 1185: Issue 3.1
Cert/LPCB Ref. 104J/02
846a/02



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

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

2.0 CERTIFICATION/LISTINGS (CONTINUED)

Size		Approval/Listing Service Pressures				
Nominal	Actual Outside Diameter	Series 765 Butterfly Valve				
		cULus	FM	VdS	LPCB	CCC
inches DN	inches mm	psi kPa	psi kPa	psi kPa	psi kPa	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	363 2500
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	363 2500
	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	363 2500
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:

Victaulic Grade “T” Nitrile

Nitrile (Orange stripe color code) For water related services, this gasket may be specified for temperatures rated up to +150°F/+66°C. NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES

Stems: 416 stainless steel conforming to ASTM A582

Stem Seal Cartridge: Brass

Bearings: Stainless steel with TFE lining

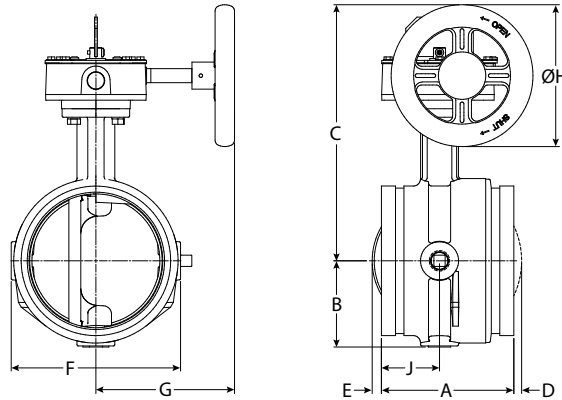
Stem Seals: Nitrile

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



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

5.0 PERFORMANCE

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
2½	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

C_v 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_v 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_v = Flow Coefficient

Formulas for K_v Values:

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

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

Where:

Q = Flow (m³/hr)

ΔP = Pressure Drop (Bar)

K_v = Flow Coefficient

Size		Actual Outside Diameter		Flow Coefficient	
Nominal				Full Open	
inches	mm	inches	mm	C _v	K _v
2		2.375		170	
DN50		60.3		147	
2½		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	
		5.500		1200	
DN125		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.

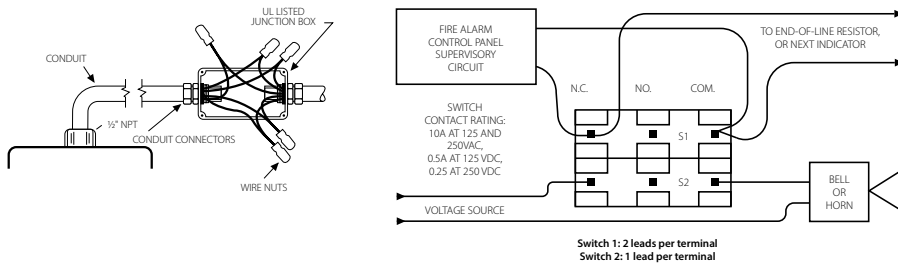
- These products shall be used only in fire protection systems that are designed and installed in accordance with current, applicable National Fire Protection Association (NFPA 13, 13D, 13R, etc.) standards, or equivalent standards, and in accordance with applicable building and fire codes. These standards 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

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



NOTE

- 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).

[29.01: Victaulic Terms and Conditions of Sale](#)

[I-100: Victaulic Field Installation Handbook](#)

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.

Warranty

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

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