victaulic[°] 70.03



1.0 PRODUCT DESCRIPTION

Application

- For use with Victaulic Vortex[™] Hybrid Fire Extinguishing Systems.
- Controls the flow of gas and water to the hybrid emitters.

Combination Panel

- Controls the flow of hybrid media to protect a specific hazard or enclosure.
- Contains the gas Automated Regulating Valve (ARV) and water control valve. The ARV reduces the pressure of the gas from the inlet to a field adjustable set pressure and maintains the set pressure until the gas is depleted. Combination panels include a water control valve to control water flow to emitters based on nitrogen pressure.

Fluid Panel

- A single fluid panel can be used in combination with multiple zone panels to control the flow of gas when protecting multiple hazards or enclosures.
- Contains the gas Automated Regulating Valve (ARV). The ARV reduces the pressure of the gas from the inlet to a field adjustable set pressure and maintains the set pressure until the gas is depleted.

Zone Panel

• Contains both a gas and water control valve. Requires the use of a fluid panel to control and regulate gas flow. Zone panels control the flow of gas and water to the specific hazard or enclosure.

Pressure Rating

• For panel specific pressure input and output see section 5.0.

Operating Temperature

• 40°F to 130°F/4°C to 54°C.

Controls and Indicators

- For controls and indicator details, contact Victaulic to access system specific publications.
- Fluid and Combination panels are available in Active Release and Dry Contact release types, refer to the appropriate Vortex Design manual for how to select the correct type.
- For installation and operation, refer to the Vortex Installation, Operation, and Maintenance manual.

Panel Clearance

• It is recommended to allow a minimum of 3 ft (1 m) of clearance in front of panel during installation and operation.

Additional Panels

• For additional panel options, contact Victaulic to access system specific publications.

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

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2.0 CERTIFICATION/LISTINGS





Access system specific publications for approval details.

Product designed and manufactured under the Victaulic Quality Management System, as certified by LPCB in accordance with ISO-9001:2015.

3.0 SPECIFICATIONS – MATERIAL

Cabinet: Carbon steel, polyester red powder coat finish

Back Panel Plate: Carbon steel, zinc plated

Automated Regulating Valve

Body: Aluminum bronze

Seal: Polyether Ether Ketone (PEEK)

Stem and Seal Retainer: Stainless steel

Stem Adapter: Brass or Aluminum bronze

Manifold Blocks: Carbon steel.

Water Inlet/Outlet

Water Piping: 1" IGS Stainless Steel (Optional CPVC material)

Water Ball Valve: Nickel plated brass (Optional CPVC material)

Water line strainer (supplied w/galvanized water trim models): Brass with 100 mesh stainless steel screen





3.1 SPECIFICATIONS – ELECTRICAL

Combination Panel – Electrical Specifications:

- Operating Voltage: 24 VDC continuous power supply (20.4-27VDC), polarity sensitive
- Alarm current: 3 amps maximum
- Standby current: 210 mA
- Supervisory connections: 500 mA at 30 VDC resistive load

Fluid Panel – Electrical Specifications:

- Operating Voltage: 24 VDC continuous power supply (20.4-27VDC), polarity sensitive
- Alarm current: 2 amps maximum
- Standby current: 210 mA
- Supervisory connections: 500 mA at 30 VDC resistive load

Zone Panel – Electrical Specifications:

- Operating Voltage: 24 VDC continuous power supply (20.4-27VDC), polarity sensitive
- Alarm current: 3.2 amps maximum
- Standby current: 45 mA
- Supervisory connections: 500 mA at 30 VDC resistive load

Release Signal:

- Dry Contact Combination and Fluid Panels
 - 24 VDC, 650 Ω
- Active Release Combination and Fluid Panels
 - Application of Nitrogen Pressure in Manifold is initiated by activation of Nitrogen Storage Solenoid Valves
 - Discharge starts on application of Nitrogen pressure greater than 150 psi/10 bar/1034 kPa
- Zone Panel
 - 24 VDC, 650 Ω

Supervisory Signals:

- System Fault
- Discharge Active

Terminal Blocks:

- Power rated for 10 -20 AWG solid or stranded wire
- Signal, Release, Supervisory rated for 14 24 AWG sold or stranded wire

4.0 **DIMENSIONS**

Combination Panel



Combination Panel	Dime	Weight	
Victaulic Vortex™ Combination Panel Description	A inches mm	В	Approx. (Each) Ib ka
Active Release, Stainless Water Trim,	1.8	1" NPT Female	122
1"/33.7 mm Assembly	45.7		55
Active Release, Stainless Water Trim,	1.8	1 1⁄2" NPT Female	127
11/2"/48.3 mm Assembly	45.7		58
Dry Contact Release, Stainless Water	1.8	1" NPT Female	122
Trim, 1"/33.7 mm Assembly	45.7		55
Dry Contact Release, Stainless Water	1.8	1 ½" NPT Female	127
Trim, 1 ½"/48.3 mm Assembly	45.7		58
Active Release, CPVC Water Trim,	2.0	1" NPT Female	115
1"/33.7 mm Assembly	50.8		52
Active Release, CPVC Water Trim,	2.0	1 ½" NPT Female	120
1 1⁄2"/48.3 mm Assembly	50.8		54
Dry Contact Release, CPVC Water	2.0	1" NPT Female	115
Trim, 1"/33.7 mm Assembly	50.8		52
Dry Contact Release, CPVC Water	2.0	1 1/2" NPT Female	120
Trim, 1 ½"/48.3 mm Assembly	50.8		54

4.1 **DIMENSIONS**

Fluid Panel



Fluid Panel	Dime	Weight	
	Α		Approx. (Each)
Victaulic Vortex™	inches	_	lb
Fluid Panel Description	mm	В	kg
Active Pelezze 1"/33.7 mm Assembly	1.9	1" NPT Fomalo	90
Active helease, 1755.7 min Assembly	48.3	i Ni i remaie	41
Active Polesce 11////18.2 mm Accombly	1.7	114" NDT Fomalo	95
Active Release, 1 /2 /46.5 min Assembly	43.2	172 INFT Female	43
Due Contest Delegos 11/22 7 mm Assembly	1.9		90
Dry Contact Release, 1 755.7 mm Assembly	48.3	i nei remaie	41
Dry Cantast Delagas, 11/1/40 2 mm Assambly	1.7		95
Dry Contact Release, 1 1/2 /48.3 mm Assembly	43.2	1 /2 INPT Female	43



4.2 **DIMENSIONS**

Zone Panel



Zone Panel	Dimensions				Weight
	Α	В			Approx. (Each)
Victaulic Vortex [™]	inches	inches			lb
Zone Panel Description	mm	mm	С	D	kg
Dry Contact Release, Water Ball Valve,	24.0	24.0	1 ½" OGS	1" IGS	80
1 1/2"/48.3 mm Assembly	609.6	609.6	Grooved	Grooved	36
Dry Contact Release, Water Ball Valve,	30.0	30.0	2" OGS	1" IGS	112
2"/60.3 mm Assembly	762.0	762.0	Grooved	Grooved	51
Corrosion-Resistant, Dry Contact Release,	24.0	24.0	1 ½" OGS	1" NDT Mala	80
CPVC, 11/2"/48.3 mm Assembly	609.6	609.6	Grooved	I INFI Male	36
Corrosion-Resistant, Dry Contact Release,	24.0	24.0	1 ½" OGS	1" NDT Malo	80
Stainless Steel, 1 1/2"/48.3 mm Assembly	609.6	609.6	Grooved	i inflitide	36





5.0 PERFORMANCE

Panel Performance	Performance								
Victaulic Vortex™ Panel Performance	Maximum Nitrogen Inlet Pressure PSIG bar	Maximum Nitrogen Outlet Pressure PSIG bar	Maximum Water Pressure PSIG bar	Minimum Nitrogen Flow SCFM Sm ³ /min	Maximum Nitrogen Flow SCFM Sm ³ /min	Maximum Water Flow GPM LPM	Nitrogen Trim Cv at Full Open	Water Trim Cv	Enclosure Type
Combination Panel, Stainless Water Trim, 1"/33.7 mm	3000 206.8	175 12.1	200 13.8	40 1.1	See Chart	32 121	12	11	NEMA 12, IP 52
Combination Panel, Stainless Water Trim, 1 ½"/48.3 mm	3000 206.8	175 12.1	200 13.8	300 8.5	See Chart	32 121	30	11	NEMA 12, IP 52
Combination Panel, CPVC Water Trim, 1"/33.7 mm	3000 206.8	175 12.1	120 8.3	40 1.1	See Chart	32 121	12	11	NEMA 12, IP 52
Combination Panel, CPVC Water Trim, 1 ½"/48.3 mm	3000 206.8	175 12.1	120 8.3	300 8.5	See Chart	32 121	30	11	NEMA 12, IP 52
Fluid Panel, 1"/33.7 mm	3000 206.8	175 12.1	200 13.8	40 1.1	See Chart	N/A	12	N/A	NEMA 12, IP 52
Fluid Panel, 1 ½"/48.3 mm	3000 206.8	175 12.1	200 13.8	300 8.5	See Chart	N/A	30	N/A	NEMA 12, IP 52
Zone Panel, 1 ½"/48.3 mm	175 12.1	N/A	200 13.8	40 1.1	See Chart	32 121	N/A	11	NEMA 12, IP 52
Zone Panel, 2"/60.3 mm	175 12.1	N/A	200 13.8	40 1.1	See Chart	32 121	N/A	11	NEMA 12, IP 52
Zone Panel, CPVC, 1 ½"/60.3 mm	120 8.3	N/A	120 8.3	40 1.1	See Chart	32 121	N/A	11	NEMA 12, IP 52
Zone Panel, Stainless, 1 ½"/60.3 mm	175 12.1	N/A	200 13.8	40 1.1	See Chart	32 121	N/A	11	NEMA 12, IP 52

¹ Do not allow operation of the system with nitrogen outlet blocked or closed. Refer to the appropriate Victaulic Vortex Design, Installation, Operating and Maintenance manual for pressure relief valve requirements.



5.0 PERFORMANCE (CONTINUED)

Zone Panels

Nitrogen Pressure Loss vs Flow Rate





 Nitrogen pressure loss through zone panels nitrogen trim assumes an inlet pressure of 40 psi/2.8 bar, nitrogen temperature of 70° F, and carbon steel schedule 40 pipe in the panel.



5.0 PERFORMANCE (CONTINUED)

Combination and Fluid Panels

Minimum Nitrogen Inlet Pressure vs Flow Rate



NOTE

• Minimum nitrogen inlet pressure vs flow assumes an outlet pressure of 50 psi/3.5 Bar and nitrogen temperature of 70°F





6.0 NOTIFICATIONS

	• Victaulic Vortex [™] Hybrid Fire Extinguishing Systems shall be designed only by competent and certified system designers that have successfully completed all appropriate Victaulic training. System designs shall be conducted per all applicable laws, codes, and industry standards.
	• System designers shall use sound engineering judgment to design the Victaulic Vortex [™] Hybrid Fire Extinguishing System system in accordance with the applicable Victaulic Vortex [™] manual. A complete evaluation of the hazards, authority having jurisdiction (AHJ) requirements, applicable laws, codes, and industry standards shall be conducted.
	• Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
	• Contractors shall be certified, per local code requirements, and shall successfully complete all Victaulic training before attempting to install the Victaulic Vortex [™] Hybrid Fire Extinguishing System. Always reference the applicable Victaulic Vortex [™] manual and consult the local AHJ for complete installation requirements. The Victaulic Vortex [™] manual contains important safety and operational information.
	• Nitrogen cylinders contain stored energy that can discharge explosively. Transportation and installation shall be performed only by personnel that has been trained on the hazards and proper handling techniques. All nitrogen cylinder movement shall be done with appropriate material handling equipment. Always secure nitrogen cylinders during transport, storage, and use.
	• All installer-supplied piping shall conform to and be installed in accordance with requirements of the applicable Victaulic Vortex [™] manual, applicable laws, codes, and site-specific standards, and it shall be rated for the pressure and operating conditions to which it will be subjected.
	• Use only Victaulic replacement parts when servicing the Victaulic Vortex [™] Hybrid Fire Extinguishing System.
	• Changes to hazard classifications or hazard zones may affect system performance. All changes shall be reported to the AHJ for approval.
	Failure to follow these instructions could result in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

70.04: Victaulic Vortex™ Hybrid Fire Extinguishing System - Series 950 Cylinder Assemblies Submittal

70.05: Victaulic Vortex™ Hybrid Fire Extinguishing System Series 950 Water Tanks Submittal

70.07: Victaulic Vortex™ Hybrid Fire Extinguishing System - Series 950 Releasing Manifold System Submittal

70.12: Victaulic Vortex™ Hybrid Fire Extinguishing System - Series 953 and Series 954 Hybrid Emitters Submittal

70.16: Victaulic Vortex™ Hybrid Fire Extinguishing System - Flow Cartridge and Strainer Kit Submittal

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

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