Victaulic® FireLock™ Series FL-SR/ST/CMSA Storage, Standard Response CMSA Pendent Sprinklers K25.2 (36.8)

1.0 PRODUCT DESCRIPTION

STANDARD RESPONSE STORAGE SPRINKLER	
SIN	**V4601**
SPRINKLER TYPE	NFPA-CMSA/FM-Standard Response Storage
SPRINKLER RESPONSE	SR
ORIENTATION	Pendent
K-FACTOR[1]	25.2 Imp./36.8 S.I.
CONNECTION	1"NPT /25 mm BSPT/IGS™ Grooved
MAX. WORKING PRESSURE	175 psi (1200 kPa)

AVAILABLE WRENCHES		
SPRINKLER	**V46 Open End**	**3⁄16 Hex-Bit (V9)**
PENDENT	■	■

Factory Hydrostatic Test: 100% @ 500 psi/3447 kPa/34 bar

Min. Operating Pressure: FM: 7 psi/48 kPa/.5 bar

[1] For K-Factor when pressure is measured in bar, multiply S.I. units by 10.0.

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

2.0 CERTIFICATIONS/LISTINGS

STANDARD RESPONSE PENDENT APPROVALS/LISTINGS		
	cULus (NFPA)	**FM**
SIN	**V4601**	
Nominal K Factor Imperial	25.2	
Nominal K Factor S.I.[2]	36.3	
Sprinkler Type	CMSA	Standard Response Storage
System Type	Wet	
Response Type	Standard	
Temperature Rating	162°F/72°C 212°F/100°C 286F°/141°C	162°F/72°C 212°F/100°C 286F°/141°C
Maximum Area of Coverage	See NFPA 13	100ft²/9.1 m²
Minimum Area of Coverage	80ft²/7.4 m²	80ft²/7.4 m²
Maximum Slope Ceiling	2 in 12/10.5°	2 in 12/10.5°
Maximum Spacing	See NFPA 13	Datasheet 2-0
Minimum Spacing	8ft/2.4 m	8ft/2.4 m
Deflector to Ceiling Distance[3]	See NFPA 13	4" – 11"/100 mm – 279 mm
Minimum Deflector to Top of Storage	3ft/0.9 m	3ft/0.9 m
Minimum Deflector Distance from Walls	4"/100 mm	4"/100 mm
Obstruction Criteria	See NFPA 13	Datasheet 2-0
Minimum Aisle Width	See NFPA 13	Datasheet 2-0
Hose Stream Allowance and Duration	See NFPA 13	Datasheet 8-9
Storage Type		
Open Frame (that is, no solid shelves) Single, Double, Multiple-Row, or Portable Rack Storage of Class I-IV and Group A or B Plastics	See NFPA 13	Datasheet 8-9
Solid Pile or Palletized Storage of Class I-IV and Group A or B Plastics	See NFPA 13	Datasheet 8-9
Idle Pallet Storage	N/A	Datasheet 8-24
Rubber Tire Storage	N/A	Datasheet 2-0 and 8-3
Rolled Paper Storage (Refer to the standard.)	N/A	Datasheet 8-21
Flammable Liquid Storage (Refer to the standard.)	N/A	Datasheet 7-29
Aerosol Storage (Refer to the standard.)	N/A	Datasheet 7-31
Automotive Components in Portable Racks (Control mode only, refer to the standard.)	N/A	N/A

[2] For K-Factor when pressure is measured in bar, multiply S.I. units by 10.0.

[3] Distance is taken from the center of the thermal element for FM.

NOTES

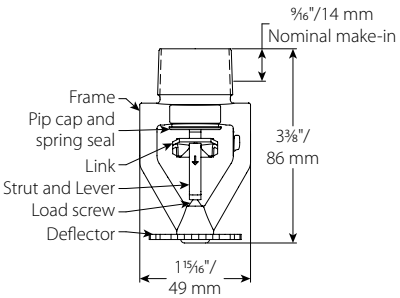
- Reference the specific agency website listings for the most up-to-date certification information.
- V4601 sprinkler may also be used as a control mode specific application sprinkler (CMSA) in accordance the Alternative Sprinkler Systems Design chapter for NFPA 13 (Chapter 24 in the 2019 ed.) based on testing completed at FM Global. Specific Application design criteria is described Section 5.0.
- CMSA criteria is based on the original FM Approval for the V4601 sprinkler, which is included in Chapter 21 (2013, 2016 ed.) and Chapter 24 (2019 ed.) of NFPA 13. Additional design criteria for the Model V4601 sprinkler may be found in FM Global Property Loss Prevention Data Sheet 8-9. The Model V4601 sprinkler is described as a standard-response K25.2 pendent storage sprinkler in FM Global Data Sheet 8-9.
- V4601 Pendent Sprinklers are UL Listed as a standard response, control mode specific application (CMSA) sprinkler for storage applications in accordance with the design requirements of NFPA 13.
- V4601 is also FM Approved as a control mode specific application (CMSA) to be used in accordance with design requirements of NFPA 13.
- The Model V4601 is FM Approved as a standard response standard coverage sprinkler for storage applications in accordance with FM Global Data Sheets. Applicable designs are referenced from FM Global Loss Prevention Datasheets in Section 5.0 of this document.
- V4601 sprinkler may also be used as a control mode specific application sprinkler (CMSA) in accordance the Alternative Sprinkler Systems Design chapter for NFPA 13 (Chapter 24 in the 2019 ed.) based on testing completed at FM Global. Specific Application design criteria is described Section 5.0.

3.0 SPECIFICATIONS – MATERIAL

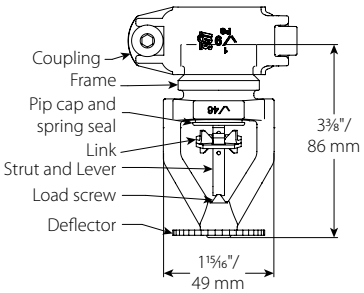
Deflector: Bronze
Load Screw: Stainless Steel
Pip Cap: Brass
Spring Seal: PTFE Coated Beryllium Nickel Alloy
Frame: Brass
Link: Nickel
Lever: Monel
Strut: Monel
Coupling: Refer to Victaulic Publication 10.65
Installation Wrench: Ductile Iron
Sprinkler Frame Finishes: Plain Brass

NOTE
- For cabinets and other accessories refer to separate sheet.

4.0 DIMENSIONS



Threaded
V4601



Grooved
V4601

5.0 PERFORMANCE

Sprinkler systems are to be designed to and installed per NFPA, FM Data sheets, and any local standards.

FM 8-9 Designs

WET SYSTEMS						
	FM Loss Prevention Datasheet 8-9	**Table 2**	**Table 3**	**Table 4**	**Table 5**	**Table 6**
	Arrangement	**Solid-Piled, Palletized, Shelf, and Bin-Box Arrangements**				
	Commodity	**Protection of Class 1, 2, and 3 Commodities**	**Protection of Class 4 and Cartoned Unexpanded Plastic Commodities**	**Protection of Cartoned Expanded Plastic Commodities**	**Protection of Uncartoned Unexpanded Plastic Commodities**	**Protection of Uncartoned Expanded Plastic Commodities**
Ceiling Height ft (m)	10 (3.0)	9@7 (0.5)	9@7 (0.5)	12 @ 7 (0.5)	12 @ 7 (0.5)	12 @ 7 (0.5)
	15 (4.5)	N/A	10@7 (0.5)	N/A	N/A	N/A
	20 (6.0)	9@7 (0.5)	10@7 (0.5)	12 @ 7 (0.5)	12@8 (0.6)	12@8 (0.6)
	25 (7.5)	10@7 (0.5)	10@7 (0.5)	12@10 (0.7)	12@10 (0.7)	12@10 (0.7)
	30 (9.0)	9@10 (0.7)	9@10 (0.7)	25@10 (0.7)	25@10 (0.7)	N/A
	35 (10.5)	9@30 (2.1)	9@30 (2.1)	N/A	N/A	N/A
	40 (12.0)	9@30 (2.1)	9@30 (2.1)	N/A	N/A	N/A

WET SYSTEMS						
	FM Loss Prevention Datasheet 8-9	**Table 7**	**Table 8**	**Table 9**	**Table 10**	**Table 11**
	Arrangement	**Open-Frame Storage Racks**				
	Commodity	**Protection of Class 1, 2 and 3 Commodities**	**Protection of Class 4 and Cartoned Unexpanded Plastic Commodities**	**Protection of Cartoned Expanded Plastic Commodities**	**Protection of Uncartoned Unexpanded Plastic Commodities**	**Protection of Uncartoned Expanded Plastic Commodities**
Ceiling Height ft (m)	10 (3.0)	9@7 (0.5)	9@7 (0.5)	15@7 (0.5)	15@7 (0.5)	15@7 (0.5)
	15 (4.5)	N/A	10@7 (0.5)	15@7 (0.5)	12@15 (1.0)	15@10 (0.7)
	20 (6.0)	9@ 10 (0.7)	12 @ 7 (0.5)	15@15 (1.0)	12@15 (1.0)	N/A
	25 (7.5)	9@ 10 (0.7)	12@10 (0.7)	N/A	N/A	N/A
	30 (9.0)	9@ 10 (0.7)	12@15 (1.0)	N/A	N/A	N/A
	35 (10.5)	9@30 (2.1)	9@30 (2.1)	N/A	N/A	N/A
	40 (12.0)	9@30 (2.1)	9@30 (2.1)	N/A	N/A	N/A

NOTE

- Highlighted cells have a 250 gpm 1 hour duration for hose stream. Information taken from FM8-9 as of January 1, 2020 and is for information only. Always verify this information by checking the latest version of the FM Data Sheet.

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) 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

Not applicable – contact Victaulic with any questions.

