



## TECHNICAL DATA

## STANDARD RESPONSE UPRIGHT SPRINKLER VK598 (K25.2)

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

Visit the Viking website for the latest edition of this technical data page [www.vikinggroupinc.com](http://www.vikinggroupinc.com)

### 1. DESCRIPTION

Viking Standard Response Upright Sprinkler VK598 is a thermosensitive glass bulb spray sprinkler, available in various temperature ratings to meet design requirements. The 25.2 nominal K-Factor provides greater flows at lower pressures to protect higher ceiling and storage heights.

For specific application details, refer to applicable FM Global Loss Prevention Datasheets, the FM tables and charts within this technical datasheet, or to the latest edition of NFPA 13.

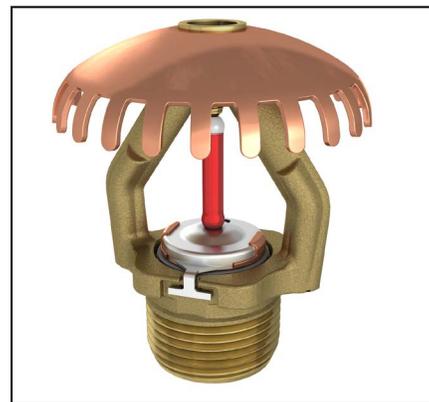
### 2. LISTINGS AND APPROVALS



**FM Approved:** Class 2029

Refer to Approval Chart and Design Criteria for FM Approval requirements that must be followed.

Approved for use in FM Approved vacuum dry sprinkler systems with a maximum supervisory vacuum pressure of -3 PSI (-207 mbar).



**WARNING:** Cancer and Reproductive Harm-  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

### 3. TECHNICAL DATA

#### Specifications:

Available since 2014

Maximum Working Pressure: 175 PSI (12 bar).

Factory tested hydrostatically to 500 PSI (34.5 bar).

Thread size: 1" NPT or 25 mm BSPT

Nominal K-Factor: 25.2 U.S. (363 metric)

Glass-bulb fluid temperature rated to -65 °F (-55 °C)

Overall Length: 3-1/4" (83 mm)

#### Material Standards:

Sprinkler Frame: Brass UNS-C84400

Deflector: Phosphor bronze UNS-C51000

Bulb: Glass, nominal 5 mm diameter

Pip Cap: Copper UNS-C11000 and Stainless Steel UNS-S30400

Compression Screw: Stainless steel UNS-S31603 or ENT-coated brass UNSC36000

Bellefonte Spring Sealing Assembly: Nickel alloy, coated on both sides with PTFE tape

### 4. INSTALLATION

Refer to appropriate NFPA, FM Global, and/or other applicable installation standards.

#### **NOTICE** Risk of permanent damage.

Over-tightening the sprinkler can cause permanent damage.

- > If installing into an InstaSeal® welded pipe fitting, refer to form F\_021223 for the appropriate installation procedure.
- > If installing into a standard pipe fitting, tighten the sprinkler to a MAXIMUM torque of 30 ft-lbs. (40.7 Nm).

### 5. OPERATION

During fire conditions, when the temperature around the sprinkler reaches its operating temperature, the heat-sensitive liquid in the glass bulb expands, causing the bulb to shatter and releasing the pip cap and sealing spring assembly. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to extinguish or control the fire.

### 6. INSPECTIONS, TESTS AND MAINTENANCE

Refer to the appropriate standard, such as FM 2-81 or NFPA 25, or refer to Viking's Inspection, Testing, and Maintenance requirements.

### 7. AVAILABILITY

The Viking Model VK598 Sprinkler is available through a network of domestic and international distributors. See The Viking Corporation website for the closest distributor or contact The Viking Corporation.

### 8. GUARANTEE

For details of warranty, refer to Viking's current list price schedule or contact Viking directly.



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### Ordering Instructions

1. Choose a sprinkler base part number with the required thread size and listing or approval (refer to the approval chart).

**NOTE:** *The only finish available is brass.*

2. Add the suffix for the desired temperature rating.

**EXAMPLE:** 19522AB = VK598 with brass finish and 155 °F (66 °C) nominal temperature rating. This sprinkler is to be installed into an area with a maximum ambient temperature of 100 °F (38 °C).

**NOTE:** *The "TQ" suffix for the part numbers below indicates a special protective cap (Figure 2-B) intended for use with InstaSeal® fittings. When ordering sprinklers with TQ suffixes in combination with InstaSeal fittings, refer to Form No. F\_021223 for installation instructions.*

Sprinkler Base Part Number	
Part Number	Thread Size
19522AX	1" NPT
19764AX	25 mm BSPT
19522AX-TQ	1" NPT
19764AX-TQ	25 mm BSPT

Temperature Ratings			
Temperature Rating	Bulb Color	Maximum Ambient Ceiling Temperature	Suffix
155 °F (68 °C)	Red	100 °F (38 °C)	B
175 °F (79 °C)	Yellow	150 °F (66 °C)	D
200 °F (93 °C)	Green	150 °F (66 °C)	E
286 °F (141 °C)	Blue	225 °F (110 °C)	G

\* Where "X" is shown in the base part number, enter the desired suffix for temperature rating (EXAMPLE: 19522AE-TQ)

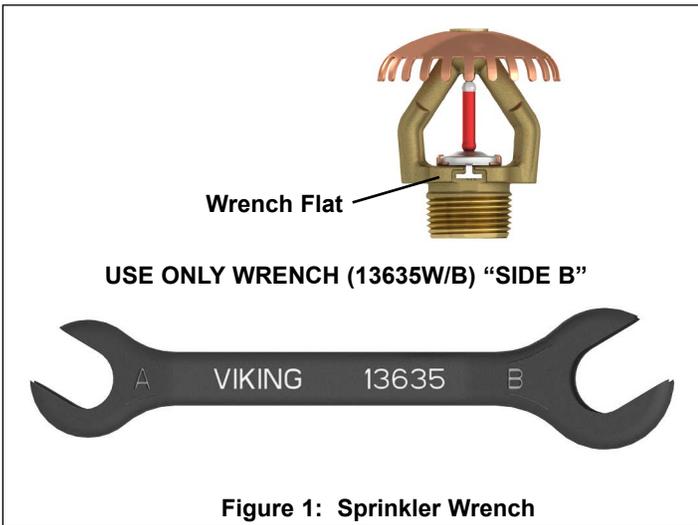
Accessories
Standard Wrench: Part no. 13635W/B (double-ended wrench - Use Side B ONLY)
Sprinkler Cabinet: Up to 6 sprinklers: Part no. 01731A (available since 1971)



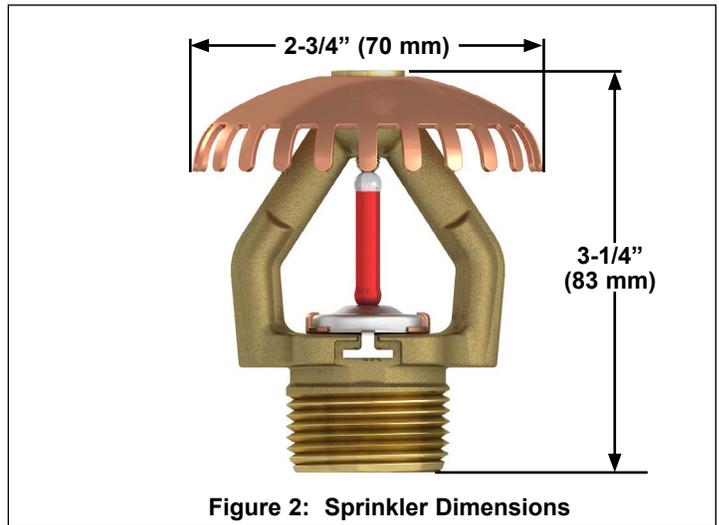
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**Figure 1: Sprinkler Wrench**



**Figure 2: Sprinkler Dimensions**



**Figure 3: VK598 with Torque Assist Cap**



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### 9. FM APPROVAL DESIGN REQUIREMENTS

**TABLE 1: APPROVAL SPECIFICATIONS**

Sprinkler Base Part Number <sup>1</sup>	Thread Size		Nominal K-factor		Overall Length		FM Approval	
	NPT	BSPT	U.S.	metric	Inches	mm	Approval Specification	Maximum working water pressure
19522AX and 19522AXTQ	1"	—	25.2	363	3¼	83	A1	175 PSI (12 bar)
19764AX and 19764XTQ	—	25 mm	25.2	363	3¼	83	A1	175 PSI (12 bar)
Approval Specification (Temperature Ratings) Key:								
A = 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C)								
Approval Specification (Finishes) Key:								
1 = Brass								
<sup>1</sup> For complete part number, refer to Viking's current price list. <sup>2</sup> Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0 <sup>3</sup> This table shows the listings and approvals available at the time of printing. Other approvals may be in process.								

#### 9.1 FM Approval Categories

Sprinkler VK598 is FM Approved as a standard response storage upright sprinkler, as indicated in the FM Approval Guide. Refer to design criteria below.

For specific application and installation requirements, refer to the latest applicable FM Loss Prevention Data Sheets (including data sheets 2-0 and 8-9), latest edition of NFPA 13, or equivalent standards.

#### 9.2 Loss Prevention Recommendations

For wet system and dry system maximum storage information, refer to FM datasheet 8-9. Information in Tables 2 through 11 based on FM 8-9 January 2022 edition. Refer to the latest version of the FM datasheets. Ensure the required pressure is reached and maintained within the time frame mandated by FM Global.



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**TABLE 3:  
COMMODITY SELECTION AND DESIGN CRITERIA OVERVIEW FOR MODEL VK598**

Description	Specification, NFPA	Specification, FM
Nominal K Factor	25.2 (363)	25.2 (363)
Sprinkler Type	CMSA	Standard Response Storage***
System Type	Wet or dry	Wet, dry, or preaction
Response Type	Standard	Standard
Temperature Ratings	155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C)	155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C)
Maximum Area of Coverage*	100 ft <sup>2</sup> (9.0 m <sup>2</sup> )	See FM Datasheet 2-0 and 8-9
Minimum Area of Coverage	80 ft <sup>2</sup> (7.4 m <sup>2</sup> )	See FM Datasheet 2-0 and 8-9
Maximum Slope Ceiling	Refer to NFPA 13	See FM Datasheet 2-0 and 8-9
Maximum Spacing	Refer to NFPA 13	See FM Datasheet 2-0 and 8-9
Minimum Spacing	8 ft (2.4 m)	See FM Datasheet 2-0 and 8-9
Deflector to Ceiling Distance**	6-8"	See FM Datasheet 2-0
Minimum Deflector to Top of Storage	3 ft (0.9 m)	See FM Datasheet 8-9
Minimum Deflector Distance from Walls	4" (100 mm)	See FM Datasheet 2-0
Obstruction Criteria	See NFPA 13	See FM Datasheet 2-0
Minimum Aisle Width	See NFPA 13	See FM Datasheet 8-9
Hose Stream Allowance and Duration	See NFPA 13	See FM 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	See FM Datasheet 8-9
Solid Pile or Palletized Storage of Class I-IV and Group A or B Plastics	See NFPA 13	See FM Datasheet 8-9
Idle Pallet Storage	N/A	See FM Datasheet 8-24
Rubber Tire Storage	N/A	See FM Datasheet 2-0 and 8-3
Rolled Paper Storage (Refer to the standard.)	N/A	See FM Datasheet 8-21
Flammable Liquid Storage (Refer to the standard.)	N/A	See FM Datasheet 7-29
Aerosol Storage (Refer to the standard.)	N/A	See FM Datasheet 7-31
Automotive Components in Portable Racks (Control mode only, refer to the standard.)	N/A	N/A

\* The maximum coverage area must not exceed 100 ft<sup>2</sup>.

\*\* FM measure the deflector to ceiling distance from the center of the sprinkler element.

\*\*\* FM Approved storage sprinklers are also FM Approved for use as non-storage sprinklers.