



## TECHNICAL DATA

## VK1181 STANDARD RESPONSE CONVENTIONAL SPRINKLER (K5.6)

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

The Viking Standard Response Conventional VK1181 Sprinklers are small, thermosensitive, glass-bulb spray sprinklers available in several different finishes, temperature ratings, and K-factors to meet design requirements. The special Polyester, and Electroless Nickel Polytetrafluoroethylene (ENT), coatings can be used in decorative applications where colors are desired. In addition, these coatings have been investigated for installation in corrosive environments and are listed as indicated in the Approval Chart.

Standard Response sprinklers may be ordered and/or used as open sprinklers (glass bulb and pip cap assembly removed) on deluge systems. Refer to Ordering Information.

### 2. LISTINGS AND APPROVALS



UL Listed: Category VNIV

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

### 3. TECHNICAL DATA

#### Specifications:

Minimum Operating Pressure: 7 psi (0.5 bar)

Rated to: 175 PSI (12 bar)

Factory tested hydrostatically to 500 psi (34.5 bar).

Thread size: 1/2" NPT or 15 mm BSPT

Nominal K-factor: 5.6 U.S. (80.6 metric\*\*)

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

\*\*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.

#### Material Standards:

Sprinkler Body: Brass CW602N, UNS-C84400 or QM Brass

Deflector: Stainless Steel UNS S30400

Pip Cap Shell - Stainless Steel UNS-S44400

Pip Cap Disc - Stainless Steel UNS-S30100

Belleville Spring - Nickel Alloy

Pip Cap Seal - Polytetrafluoroethylene (PTFE)

Compression Screw: Brass CW612N, CW508L, UNS-C36000 or UNS-C26000

Shipping Cap: Polyethylene

Bulb: Glass, nominal 5 mm diameter

**Ordering Information: (Refer to Table 1 and the current Viking List Price Book.)**

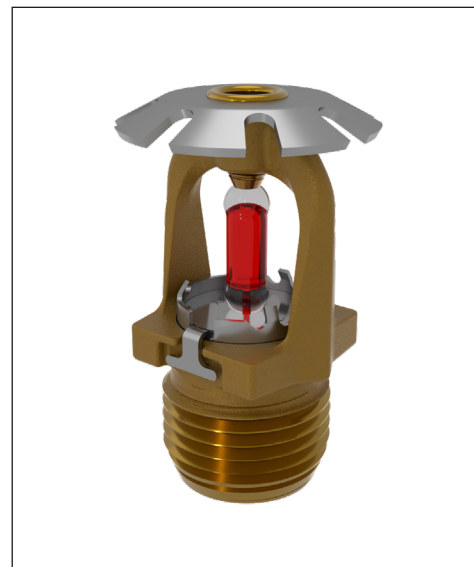
### 4. INSTALLATION

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

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

Over-tightening the sprinkler can cause permanent damage.

> Tighten the sprinkler to a **MAXIMUM** torque of 14 ft-lbs. (19 N-m).



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

### 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, releasing the pip cap 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 NFPA 25 for Inspection, Testing and Maintenance requirements.

### 7. AVAILABILITY

Viking Sprinklers are available through a network of domestic and international distributors. See the web site for the closest distributor or contact Viking.

### 8. GUARANTEE

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



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**TABLE 1: ORDERING INFORMATION**

Instructions: Using the sprinkler base part number,

(1) add the suffix for the desired Finish

(2) add the suffix for the desired Temperature Rating.

Sprinkler Base Part No.	Size		1: Finishes		2: Temperature Ratings			
	NPT Inch	BSPT mm	Description	Suffix <sup>1</sup>	Nominal Rating	Bulb Color	Max. Ambient Ceiling Temperature <sup>2</sup>	Suffix
23907	1/2	--	Brass	A	135 °F (57 °C)	Orange	100 °F (38 °C)	A
23913	--	15	Chrome	F	155 °F (68 °C)	Red	100 °F (38 °C)	B
			White Polyester <sup>3,4</sup>	M-/W	175 °F (79 °C)	Yellow	150 °F (65 °C)	D
			Black Polyester <sup>3,4</sup>	M-/B	200 °F (93 °C)	Green	150 °F (65 °C)	E
			ENT <sup>3,4</sup>	JN	286 °F (141 °C)	Blue	225 °F (107 °C)	G
					OPEN	--	--	Z

**Example:** 23907MB/W = VK1181 with White Polyester Finish and 155 °F (68 °C) Nominal temperature rating. This sprinkler is to be installed into an area with a maximum ambient temperature of 100 °F (38 °C) meaning if the area will experience temperatures above the maximum ambient rating, you shall use a higher temperature-rated sprinkler.

### Accessories

#### Sprinkler Wrenches (see Figure 1):

Standard Wrench: Part number 23559MB

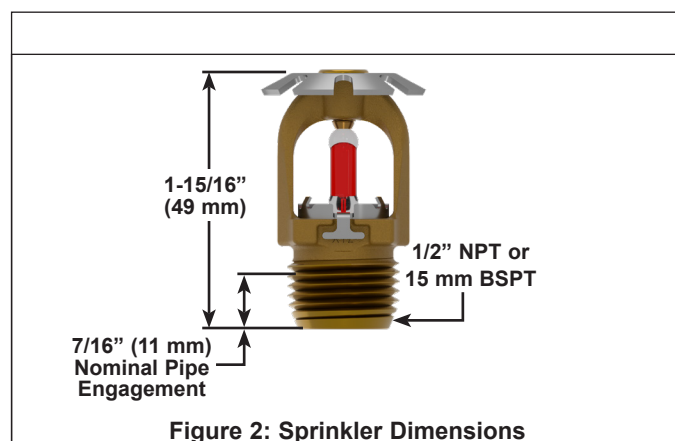
#### Sprinkler Cabinet:

A. Up to 6 sprinklers: Part number 01724A

B. 6-12 Sprinklers: Part number 01725A

### Footnotes

- Where a dash (-) is shown in the Finish suffix designation, insert the desired Temperature Rating suffix. See example above.
- Based on NFPA 13, NFPA 13R, and NFPA 13D. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.
- UL Listed as corrosion resistant.
- The corrosion resistant coatings have passed the standard corrosion test required by the approving agencies indicated in the Approval Chart. These tests cannot and do not represent all possible corrosive environments. Prior to installation, verify through the end-user that the coatings are compatible with or suitable for the proposed environment. For automatic sprinklers, the ENT coating is applied to all exposed exterior surfaces, including the waterway.
- Requires a 1/2" ratchet which is not available from Viking.





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<b>APPROVAL CHART</b> Standard Response Conventional Sprinkler VK1181 K5.6 (80.6 metric) Maximum 175 PSI (12 bar) WWP			
			Finish(es) —————> ↓ Temperature(s) —————> A 1 X Escutcheon(s), If applicable —————> ↑
Sprinkler Base Part Number <sup>1</sup>	Thread Size		Listings and Approvals <sup>2</sup>
	NPT Inch	BSPT	UL
23907	1/2	--	A1
23913	--	15	A1

**Approved Temperature Rating Codes:**  
 A = 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C) and 286 °F (141 °C)

**Approved Finish Codes:**  
 1 = Brass, Chrome, White Polyester<sup>3,4</sup>, Black Polyester<sup>3,4</sup>, and ENT<sup>4</sup>

**Footnotes**

<sup>1</sup> Base Part number is shown. For complete part number, refer to current price schedule.  
<sup>2</sup> This table shows the listings and approvals available at the time of printing. Check with the manufacturer for any additional approvals.  
<sup>3</sup> Other colors are available upon request with the same Listings and Approvals as the standard colors.  
<sup>4</sup> cULus Listed as corrosion resistant.

DESIGN CRITERIA - UL
<p><b>cULus Listing Requirements:</b>                      The Viking Standard Response Conventional Sprinkler VK1181 is cULus Listed as indicated in the Approval Chart for installation in accordance with the latest edition of NFPA 13 for old style (conventional) sprinklers.</p> <ul style="list-style-type: none"> <li>• Designed for use in Light, Ordinary, and Extra Hazard occupancies.</li> <li>• The sprinkler installation rules contained in NFPA 13 for standard spray old style (conventional) sprinklers must be followed.</li> </ul>
<p><b>IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Form No. F_080614 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.</b></p>

