



## TECHNICAL DATA

## QUICK RESPONSE SIDEWALL SPRINKLERS

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

### 1. DESCRIPTION

Viking Quick Response Vertical and Horizontal Sidewall Sprinklers are small thermo-sensitive glass bulb spray sprinklers available with various finishes and temperature ratings to meet design requirements. The special Polyester, PTFE, and Electroless Nickel PTFE (ENT) coatings can be used in decorative applications where colors are desired. In addition, these coatings have been investigated for installation in corrosive atmospheres and are listed/approved as corrosion resistant as indicated in Approval Charts.

### 2. LISTINGS AND APPROVALS



**cULus Listed:** Category VNIV



**FM Approved:** Class 2020

Refer to Approval Chart 1 and Design Criteria on pages 43w-x for cULus Listing requirements, and refer to Approval Chart 2 and Design Criteria on page 43y for FM Approval requirements that must be followed.

### 3. TECHNICAL DATA

#### Specifications:

Available since 2004.

Minimum Operating Pressure: 7 psi (0.5 bar)

Maximum Working Pressure: 175 psi (12 bar).

Factory tested hydrostatically to 500 psi (34.5 bar)

Deflector: U.S.A. Patent No. 4,296,816

Thread Size: 1/2" (15 mm) NPT

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

\* 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.

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

Overall Length: Refer to the Approval Chart

#### Material Standards:

Frame Casting: Brass UNS-C84400 or QM Brass

Deflector: Copper UNS-C19500 for horizontal sidewall sprinklers. Brass UNS-C2300 for vertical sidewall sprinklers.

Bulb: Glass, nominal 3 mm diameter

Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape

Screw: Brass UNS-C36000

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

For PTFE Coated Sprinklers: Belleville Spring-Exposed, Screw-Nickel Plated, Pip Cap-PTFE Coated

For Polyester Coated Sprinklers: Belleville Spring-Exposed

For ENT Coated Sprinklers: Belleville Spring - Exposed, Screw and Pip cap - ENT plated.

**Ordering Information:** (Also refer to the current Viking price list.)

Order Quick Response Sidewall Sprinklers by first adding the appropriate suffix for the sprinkler finish and then the appropriate suffix for the temperature rating to the sprinkler base part number.

Finish Suffix: Brass = A, Chrome = F, White Polyester = M-W, Black Polyester = M-B, Black PTFE = N, and ENT = JN

Temperature Suffix: 135 °F / 68 °C = A, 155 °F / 68 °C = B, 175 °F / 79 °C = D, 200 °F / 93 °C = E, and 286 °F / 141 °C = G

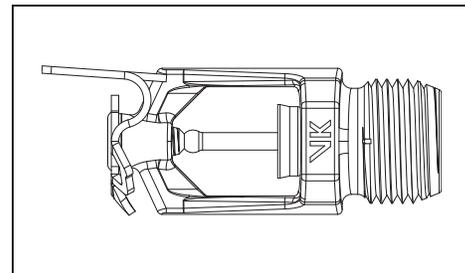
For example, sprinkler 12997 with a Brass finish and a 155 °F / 68 °C temperature rating = Part No. 12997AB

#### Available Finishes And Temperature Ratings:

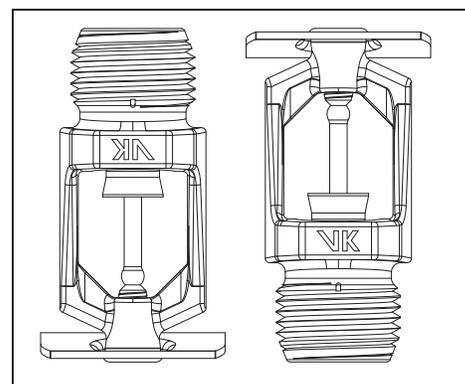
Refer to Table 1.

**Accessories:** (Also refer to the "Sprinkler Accessories" section of the Viking data book.)

#### Sprinkler Wrenches:



Horizontal Sidewall



Vertical Sidewall U/P

Viking Technical Data may be found on  
The Viking Corporation's Web site at  
<http://www.vikinggroupinc.com>.  
The Web site may include a more recent  
edition of this Technical Data Page.

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- A. Standard Wrench: Part No. 10896W/B (available since 2000).
- B. Wrench for recessed sprinklers with protective shields: Part No. 13655W/B\*\* (available since 2003)

\*\*A 1/2" ratchet is required (not available from Viking).

**Sprinkler Cabinets:**

- A. Six-head capacity: Part No. 01724A (available since 1971)
- B. Twelve-head capacity: Part No. 01725A (available since 1971)

**4. INSTALLATION**

Refer to appropriate NFPA Installation Standards.

**5. OPERATION**

During fire conditions, the heat-sensitive liquid in the glass bulb expands, causing the glass to shatter, 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**

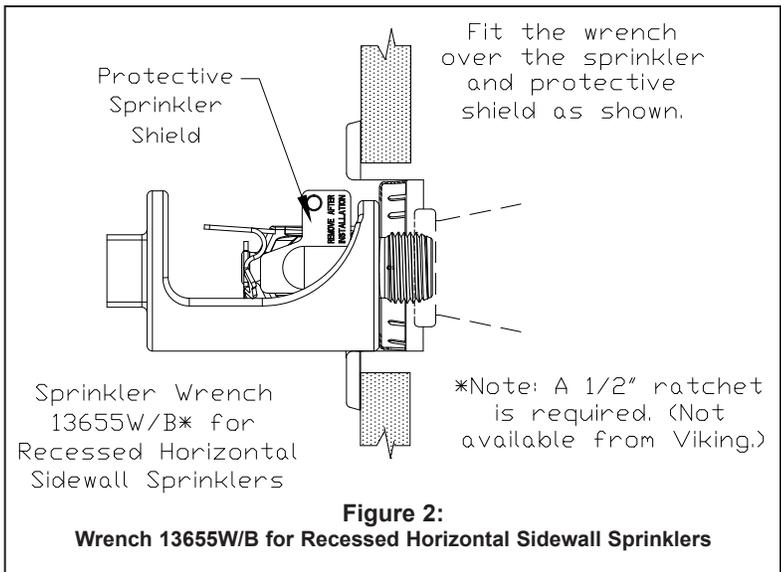
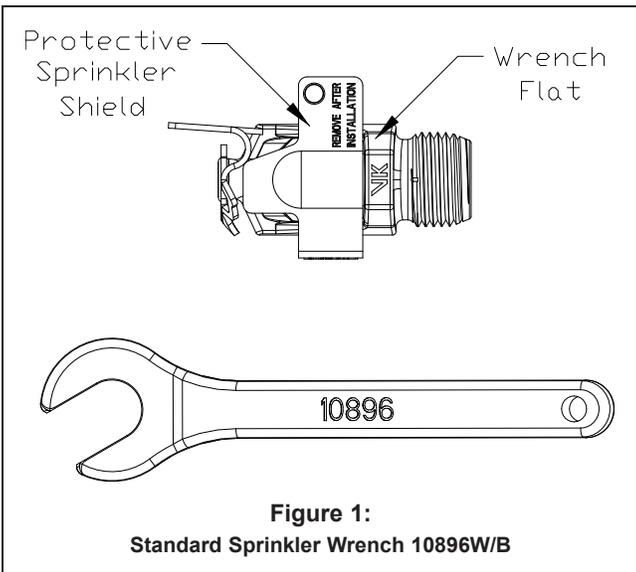
Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

**7. AVAILABILITY**

Viking Quick Response Horizontal and Vertical Sidewall Sprinklers are available through a network of domestic and international distributors. See The Viking Corporation web site 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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**TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES**

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating <sup>1</sup>	Maximum Ambient Ceiling Temperature <sup>2</sup>	Bulb Color
Ordinary	135 °F (57 °C)	100 °F (38 °C)	Orange
Ordinary	155 °F (68 °C)	100 °F (38 °C)	Red
Intermediate	175 °F (79 °C)	150 °F (65 °C)	Yellow
Intermediate	200 °F (93 °C)	150 °F (65 °C)	Green
High	286 °F (141 °C)	225 °F (107 °C)	Blue

**Sprinkler Finishes:** Brass, Chrome, White Polyester, Black Polyester, Black PTFE, and ENT

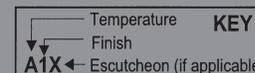
**Corrosion-Resistant Coatings<sup>3</sup>:** White Polyester, Black Polyester, Black PTFE, and ENT

**Footnotes**

- <sup>1</sup> The sprinkler temperature rating is stamped on the deflector.
- <sup>2</sup> Based on NFPA-13. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.
- <sup>3</sup> The corrosion-resistant coatings have passed the standard corrosion test required by the approving agencies indicated in the Approval Charts. 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 coatings indicated are applied to the exposed exterior surfaces only. For ENT coated sprinklers, the waterway is coated. Note that the spring is exposed on sprinklers with Polyester, PTFE, and ENT coatings.

**Approval Chart 1 (UL)**

Quick Response Sidewall Sprinklers  
 For Light or Ordinary Hazard Occupancies  
 Maximum 175 PSI (12 Bar) WWP



Deflector must be located 4" to 12" (102 mm to 305 mm) below the ceiling.

Base Part Number <sup>1</sup>	SIN	Sprinkler Style	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals <sup>3</sup> (Refer also to Design Criteria on page 43x.)				
			NPT	BSP	U.S.	metric <sup>2</sup>	Inches	mm	cULus <sup>4</sup>	NYC	LPCB	CE	⚙️
12997	VK305	HSW	1/2"	15 mm	5.6	80.6	2-11/16	68	A1Y, B1X, C2W, D2Z	--	--	--	--
12983	VK306	VSW U/P	1/2"	15 mm	5.6	80.6	2-1/4	58	--	--	--	--	--

**Approved Temperature Ratings**

- A - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C)
- B - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)
- C - 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C)
- D - 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)

**Approved Finishes**

- 1 - Brass, Chrome, White Poly-ester<sup>5,6</sup>, Black Polyester<sup>5,6</sup>, and Black PTFE<sup>5</sup>
- 2 - ENT<sup>5</sup>

**Approved Escutcheons**

- W - Installed with standard surface-mounted escutcheons
- X - Installed with standard surface-mounted escutcheons or the Viking Microfast<sup>®</sup> Model F-1 Adjustable Escutcheon, or recessed with the Viking Micromatic<sup>®</sup> Model E-1, E-2, or G-1 Recessed Escutcheon
- Y - Installed with standard surface-mounted escutcheons or the Viking Microfast<sup>®</sup> Model F-1 Adjustable Escutcheon
- Z - Installed with standard surface-mounted escutcheons or recessed with the Viking Micromatic Model E-1

**Footnotes**

- <sup>1</sup> Base part number shown. For complete part number, refer to Viking's current price schedule.
- <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.
- <sup>4</sup> Listed by Underwriters Laboratories Inc. for use in the U.S. and Canada.
- <sup>5</sup> cULus Listed as corrosion-resistant.
- <sup>6</sup> Other colors are available on request with the same Listings and Approvals as the standard colors.

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**DESIGN CRITERIA - UL**  
 (Also refer to Approval Chart 1 on page 43w.)

**cULus Listing Requirements:**

Quick Response Horizontal Sprinkler VK305 is cULus Listed as indicated in Approval Chart 1 for installation in accordance with the latest edition of NFPA 13 for sidewall standard spray sprinklers.

- Designed for use in Light and Ordinary Hazard occupancies.
- Locate with the deflector 4" to 12" (102 mm to 305 mm) below the ceiling.
- Protection areas and maximum spacing shall be in accordance with the tables provided in NFPA 13.
- Minimum spacing allowed is 6 ft. (1.8 m).
- Align the top of the deflector parallel with the ceiling.
- Locate no less than 4" (102 mm) from end walls.
- Maximum distance from end walls shall be no more than one-half of the allowable distance between sprinklers. The distance shall be measured perpendicular to the wall.
- The sprinkler installation and obstruction rules contained in NFPA 13 for sidewall standard spray sprinklers must be followed.

**IMPORTANT: Always refer to Bulletin Form No. F\_091699 - Care and Handling of Sprinklers. Also refer to page QR1-3 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, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.**

**Approval Chart 2 (FM)**  
**Quick Response Sidewall Sprinklers**  
**Maximum 175 PSI WWP**

Temperature	<b>KEY</b>
Finish	
A1X ← Escutcheon (if applicable)	

Base Part Number <sup>1</sup>	SIN	Thread Size		Nominal K-Factor		Overall Length		FM Approvals <sup>3,4</sup> (Refer also to Design Criteria below.)
		NPT	BSP	U.S.	metric <sup>2</sup>	Inches	mm	
12997	VK305	1/2"	15 mm	5.6	80.6	2-11/16	68	A1Y, B1X
12983	VK306	1/2"	15 mm	5.6	80.6	2-1/4	58	A2Z

<p><b>Approved Temperature Ratings</b></p> <p>A - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C)</p> <p>B - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)</p>	<p><b>Approved Finishes</b></p> <p>1 - Brass</p> <p>2 - Brass and Chrome</p>	<p style="text-align: center;"><b>Approved Escutcheons</b></p> <p>X - Installed with standard surface-mounted escutcheons or the Viking Microfast® Model F-1 Adjustable Escutcheon, <b>or</b> recessed with the Viking Micromatic® Model E-1, E-2, or G-1 Recessed Escutcheon</p> <p>Y - Installed with standard surface-mounted escutcheons or the Viking Microfast® Model F-1 Adjustable Escutcheon</p> <p>Z - Installed with standard surface-mounted escutcheons only.</p>
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**Footnotes**

<sup>1</sup> Base part number shown. For complete part number, refer to Viking's current price schedule.

<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 FM Approvals available at the time of printing. Other approvals may be in process.

<sup>4</sup> Viking vertical sidewall sprinklers may be installed pendent or upright.

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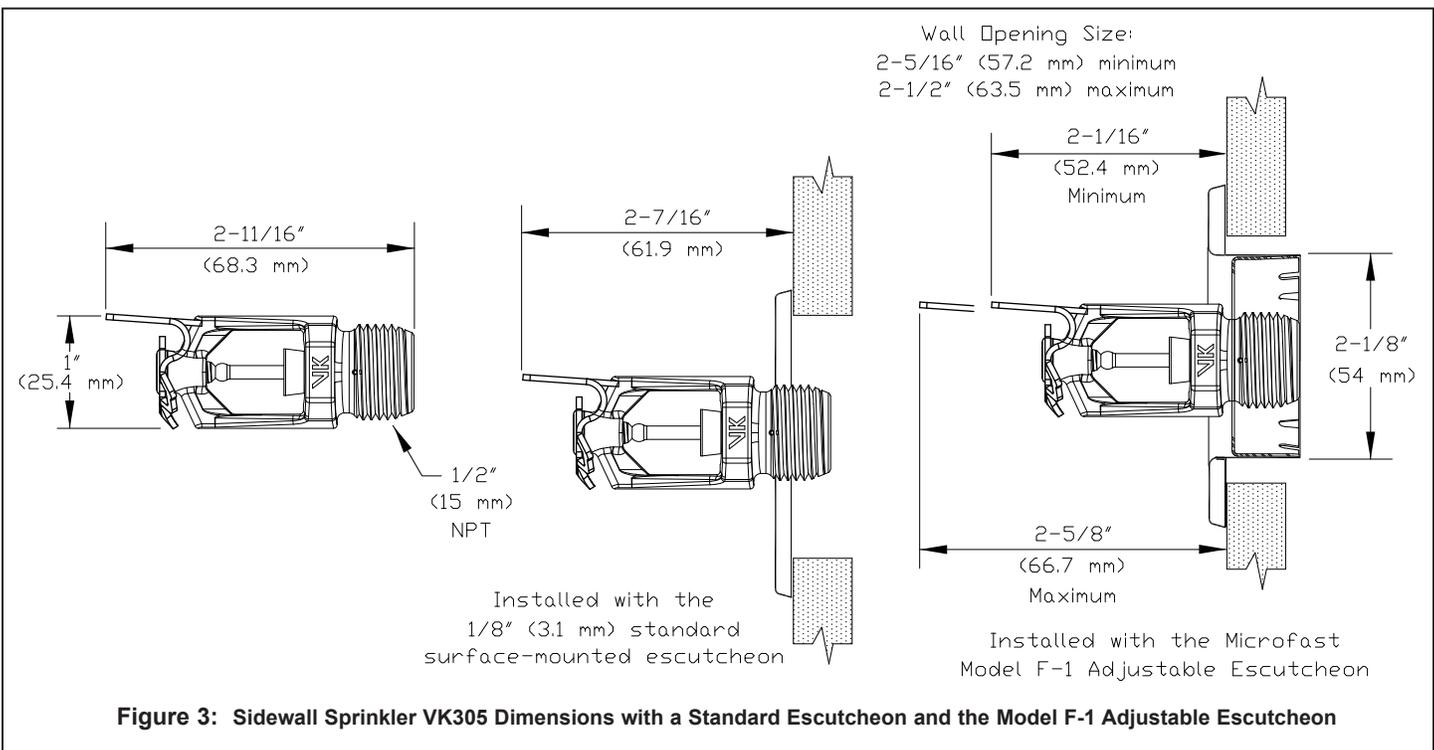
**DESIGN CRITERIA - FM**  
 (Also refer to Approval Chart 2 above.)

**FM Approval Requirements:**

Horizontal Sidewall Sprinklers VK305 and Vertical Sidewall Sprinkler VK306 are FM Approved as a quick response **Non-Storage** sidewall sprinklers as indicated in the FM Approval Guide. For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0). FM Global Loss Prevention Data Sheets contain guidelines relating to, but not limited to: minimum water supply requirements, hydraulic design, ceiling slope and obstructions, minimum and maximum allowable spacing, and deflector distance below the ceiling.

**NOTE:** The FM installation guidelines may differ from cULus and/or NFPA criteria.

**IMPORTANT:** Always refer to Bulletin Form No. F\_091699 - Care and Handling of Sprinklers. Also refer to page QR1-3 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, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.





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