



## TECHNICAL DATA

### MICROFAST® QUICK RESPONSE FUSIBLE ELEMENT UPRIGHT SPRINKLER VK301 (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.

### 1. DESCRIPTION

The Viking Microfast® Quick Response Upright Fusible Element Sprinkler VK301 is a small, thermosensitive, solder link spray sprinkler available in several different finishes and temperature ratings to meet design requirements. The special Polyester and PTFE coatings can be used in decorative applications where colors are desired.

### 2. LISTINGS AND APPROVALS



cULus Listed: Category VNIV



FM Approved: Classes 2002 and 2020



CCCF Approved: Approved by the China Certification Center for Fire Products (CCCF)

**NOTE:** Other International approval certificates are available upon request.

Refer to Approval Chart 1 and Design Criteria on for cULus Listing requirements and refer to Approval Chart 2 and Design Criteria FM Approval requirements that must be followed.

### 3. TECHNICAL DATA

#### Specifications:

Minimum Operating Pressure: 7 psi (0.5 bar)\*  
 Maximum Working Pressure: 175 psi (12 bar) wwp.  
 Factory tested hydrostatically to 500 psi (34.5 bar)  
 Testing: U.S.A. Patent No. 4,831,870  
 Thread size: 1/2" NPT, 15 mm BSP  
 Nominal K-Factor: 5.6 U.S. (80.6 metric\*\*)  
 Overall Length: 2-1/4" (58 mm)

\*cULus Listing, FM Approval, and NFPA 13 installs require a minimum of 7 psi (0.5 bar). The minimum operating pressure for LPCB and CE Approvals ONLY is 5 psi (0.35 bar).

#### Material Standards:

Frame Casting: QM Brass  
 Deflector: Brass UNS-C23000 or Copper UNS-C19500  
 Fusible Element Assembly: Nickel Alloy  
 Trigger and Support: Stainless Steel UNS-S31600  
 Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape  
 Seat and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400  
 Screw: Brass UNS-C36000  
For PTFE Coated Sprinklers: Belleville Spring-Exposed, Screw-Nickel Plated, Pip Cap-PTFE Coated  
For Polyester Coated Sprinklers: Belleville Spring-Exposed

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

Order Viking Microfast® Quick Response Fusible Element Upright Sprinkler VK301 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, and Black PTFE = N

Temperature Suffix: 165 °F (74 °C) = C, 205 °F (96 °C) = E, and 280 °F (138 °C)

For example, sprinkler VK301 with a 1/2" NPT thread, Brass finish and a 165 °F (74 °C) temperature rating = Part No. 17535AC

**Available Finishes And Temperature Ratings:** Refer to Table 1.

**Accessories:** (Also refer to the Viking website.)

**Sprinkler Wrench:** Standard Wrench: Part No. 10896W/B (available since 2000)

#### Sprinkler Cabinets:

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

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



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**4. INSTALLATION**

Refer to appropriate NFPA Installation Standards.

**5. OPERATION**

During fire conditions, the heat-sensitive fusible element assembly disengages, releasing the seat and spring assemblies to open the waterway. 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**

The Viking Microfas® Quick Response Upright Fusible Element Sprinkler VK301 is 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.

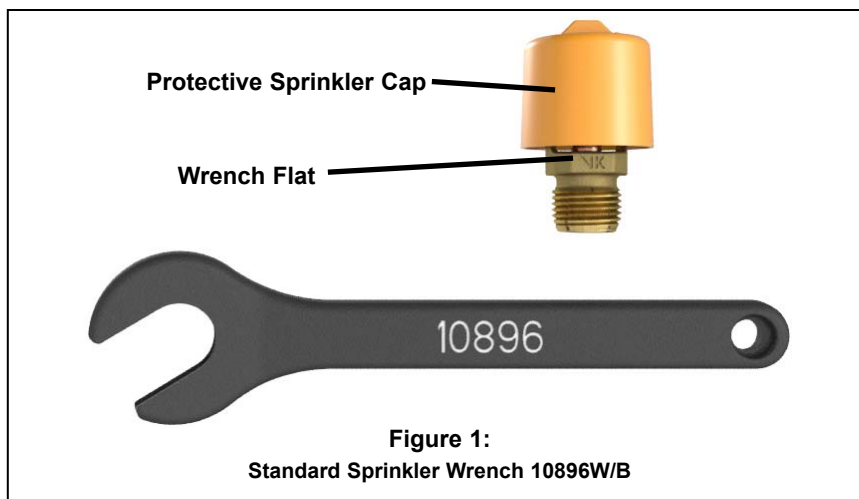
**TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES**

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating <sup>1</sup>	Maximum Ambient Ceiling Temperature <sup>2</sup>	Frame Paint Color
Ordinary	165 °F (74 °C)	100 °F (38 °C)	None
Intermediate	205 °F (96 °C)	150 °F (65 °C)	White
High	280 °F (138 °C)	225 °F (107 °C)	Blue

**Sprinkler Finishes:** Brass, Chrome, White Polyester<sup>3</sup>, Black Polyester<sup>3</sup>, and Black PTFE<sup>3</sup>

**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> For automatic sprinklers, the coatings indicated are applied to the exposed exterior surfaces only. Note that the spring is exposed on sprinklers with Polyester and PTFE coatings.





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Approval Chart 1 (UL)												
Microfast® Quick Response Fusible Element Upright Sprinkler VK301 Maximum 175 PSI (12 bar) WWP												
Base Part Number <sup>1</sup>	SIN	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals <sup>3</sup>				
		NPT	BSP	U.S.	metric <sup>2</sup>	Inches	mm	cULus	VdS	LPCB	CE	CCC
17535	VK301	1/2"	15 mm	5.6	80.6	2-1/4	58	A1	--	--	--	--
19779	VK301	1/2"	--	5.6	80.6	2-1/4	58	--	--	--	--	B3
21353	VK301	--	15 mm	5.6	80.6	2-1/4	58	--	--	--	--	B3
<b>NOTICE - Product Below - Limited Availability (Contact Local Viking Office)</b>												
12279	VK301	1/2"	15 mm	5.6	80.6	2-1/4	58	A2	--	--	--	B3
<b>Approved Temperature Ratings</b> A - 165 °F (74 °C), 205 °F (96 °C), 280 °F (138 °C) B - 165 °F (74 °C), 205 °F (96 °C)							<b>Approved Finishes</b> 1 - Brass, Chrome, White Polyester5, Black Polyester5, and Black PTFE 2 - Brass, Chrome, White Polyester5, and Black Polyester5 3 - Brass					
<b>Footnotes</b>												
1 Base part number is shown. For complete part number, refer to Viking's current price schedule.												
2 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.												
3 This table shows the listings and approvals available at the time of printing. Check with the manufacturer for any additional approvals.												
4 Listed by Underwriters Laboratories Inc. for us in the U.S. and Canada												
5 Other colors are available on request with the same Listings and Approvals as the standard colors.												

### DESIGN CRITERIA - UL

(Also refer to Approval Chart 1 above.)

#### **cULus Listing Requirements:**

Quick Response Fusible Element Upright Sprinkler VK301 is cULus Listed as indicated in the Approval Chart for installation in accordance with the latest edition of NFPA 13 for standard spray sprinklers.

- Designed for use in Light and Ordinary Hazard occupancies.
- Protection areas and maximum spacing shall be in accordance with the tables provided in NFPA 13. Maximum spacing allowed is 15 ft. (4.6 m).
- Minimum spacing allowed is 6 ft. (1.8 m) unless baffles are installed in accordance with NFPA 13.
- Minimum distance from walls is 4 in. (102 mm).
- Maximum distance from 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 rules contained in NFPA 13 for standard spray upright sprinklers must be followed.

**IMPORTANT: Always refer to Bulletin Form No. F\_091699 - Care and Handling of Sprinklers. Also refer to Bulletin 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, 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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<b>Approval Chart 2 (FM)</b> Microfast® Quick Response Fusible Element Upright Sprinkler VK301 Maximum 175 PSI (12 bar) WWP								
Base Part Number <sup>1</sup>	SIN	Thread Size		Nominal K-Factor		Overall Length		FM Approvals <sup>3</sup> (Refer also to Design Criteria below.)
		NPT	BSP	U.S.	metric <sup>2</sup>	Inches	mm	
17535	VK301	1/2"	15 mm	5.6	80.6	2-1/4	58	A1
<b>NOTICE - Product Below - Limited Availability (Contact Local Viking Office)</b>								
12279	VK301	1/2"	15 mm	5.6	80.6	2-1/4	58	A2
<b>Approved Temperature Ratings</b> A - 165 °F (74 °C), 205 °F (96 °C), and 280 °F (138 °C)						<b>Approved Finishes</b> 1 - Brass and Chrome 2 - Brass, Chrome, White Polyester <sup>4</sup> , and Black Polyester <sup>4</sup>		
<b>Footnotes</b>								
<sup>1</sup> Base part number is 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. Check with the manufacturer for any additional approvals. <sup>4</sup> Other colors are available on request with the same Approvals as the standard colors.								

KEY	
Temperature	—
Finish	—
A1X ←	Escutcheon (if applicable)

### DESIGN CRITERIA - FM

(Also refer to Approval Chart 2 above.)

#### FM Approval Requirements:

The Microfast® Quick Response Fusible Element Upright Sprinkler VK301 is FM Approved as a quick response Non-Storage upright sprinkler 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 Bulletin 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, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.**