



## TECHNICAL DATA

### QUICK RESPONSE EXTENDED COVERAGE FUSIBLE ELEMENT PENDENT SPRINKLER VK601 (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

#### 1. DESCRIPTION

Viking QREC Fusible Element Pendent Sprinkler VK601 is a thermosensitive solder link spray sprinkler available in several different finishes and temperature ratings to meet varying design requirements. The fusible operating element and special deflector characteristics meet the challenges of quick response extended coverage standards. The special Polyester coatings can be used in decorative applications where colors are desired.

#### 2. LISTINGS AND APPROVALS

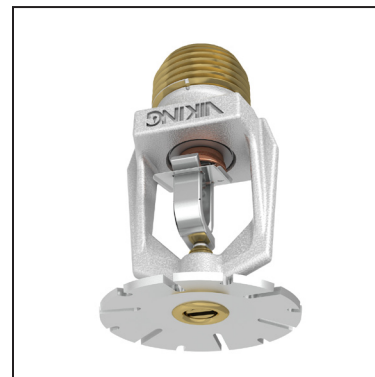
**cULus Listed:** Category VNIV



**FM Approved:** Class 2020



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



For Light Hazard Occupancies Only

#### 3. TECHNICAL DATA

##### Specifications:

Minimum Operating Pressure: Refer to the Approval Charts.

Maximum Working Pressure: 175 psi (12 bar). Factory tested hydrostatically to 500 psi (34.5 bar).

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

Nominal K-Factors: 5.6 U.S. (80.6 metric†)

† Metric K-factor measurement shown is in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

Overall Length: 2-5/16 (59 mm)

##### Material Standards:

Sprinkler Frame: Brass UNS-C84400

Deflector: Brass UNS-C26000

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 Polyester Coated Sprinklers: Belleville Spring-Exposed

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

Order QREC Fusible Element Pendent Sprinkler VK601 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, and Black Polyester = M-/B

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

For example, sprinkler VK601 with a Brass finish and a 165 °F (74 °C) temperature rating = Part No. 13969AC

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

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

##### Sprinkler Wrenches:

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

B. Wrench for coated and/or recessed sprinklers: Part No. 13655W/B†† (available since 2006)

††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

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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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 Model VK601 Sprinkler 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.

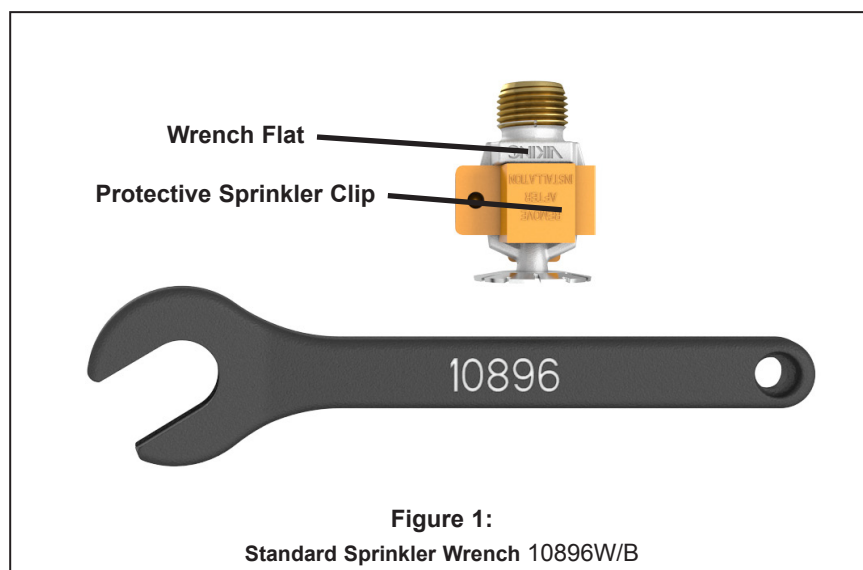
**TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES**

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

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


**Footnotes**

- <sup>1</sup> Decorative sprinklers may not be color coded. The 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 coatings.



**Figure 1:**

**Standard Sprinkler Wrench 10896W/B**

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<b>Approval Chart 1 (UL)</b> Quick Response Extended Coverage Pendent Fusible Element Sprinkler VK601 For Light Hazard Occupancies Only. Maximum 175 PSI (12 Bar) WWP	<table border="1" style="border-collapse: collapse;"> <tr> <td style="font-size: small;">Temperature</td> <td style="text-align: center;">KEY</td> </tr> <tr> <td style="font-size: small;">Finish</td> <td></td> </tr> <tr> <td style="font-size: small;">Escutcheon (if applicable)</td> <td></td> </tr> </table>	Temperature	KEY	Finish		Escutcheon (if applicable)	
Temperature	KEY						
Finish							
Escutcheon (if applicable)							

Sprinkler Base Part Number <sup>1</sup>	SIN	NPT Thread Size		Nominal K-Factor		Maximum Areas of Coverage <sup>4</sup> (Length x Width)	Minimum Water Supply Requirements <sup>4</sup> Flow/Pressure	Listings and Approvals <sup>3</sup> (Refer also to Design Criteria below.)	
		Inches	mm	U.S.	metric <sup>2</sup>			cULus <sup>5</sup>	NYC
13969	VK601	1/2	15	5.6	80.6	16' x 16' (4.9 m x 4.9 m)	26 gpm @ 21.6 psi (98.4 L/min @ 1.49 Bar)	A1Y, B1Z	See Footnote 6.
13969	VK601	1/2	15	5.6	80.6	18' x 18' (5.5 m x 5.5 m)	33 gpm @ 34.7 psi (124.9 L/min @ 2.39 Bar)	B1Z	See Footnote 6.

<b>Sprinkler Temperature Ratings</b> A - 205 °F (96 °C) B - 165 °F (74 °C)	<b>Approved Finishes</b> 1 - Brass, Chrome, White Poly-ester, and Black Polyester	<b>Approved Escutcheons</b> Y - Standard surface-mounted escutcheons or the Viking Microfast® Model F-1 Adjustable Escutcheon Z - Standard surface-mounted escutcheons or the Viking Microfast® Model F-1 Adjustable Escutcheon, or recessed with the Micromatic® Model E-1 or E-2 Recessed Escutcheon
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**Footnotes**

<sup>1</sup> Part number shown is the base part number. For complete part number, refer to current Viking price list 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 chart shows the listings and approvals available at the time of printing. Other approvals may be in process. Check with the manufacturer for any additional approvals.

<sup>4</sup> For areas of coverage smaller than shown, use the "Minimum Water Supply Requirement" for the next larger area listed with sprinklers of similar K-factor. Flows and pressures listed are per sprinkler.

<sup>5</sup> Listed by Underwriter's Laboratories, Inc. for use in the U.S. and Canada for Light Hazard occupancies with smooth, flat, horizontal ceilings only.


<sup>6</sup> Meets New York City requirements, effective July 1, 2008.

**DESIGN CRITERIA - UL**  
(Also refer to Approval Chart 1 above.)

**cULus Listing Requirements:**  
 QREC Pendent Sprinkler VK601 is cULus Listed as indicated in Approval Chart 1 for installation in accordance with the latest edition of NFPA 13 for extended coverage pendent spray sprinklers:

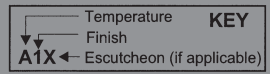
- Limited to Light Hazard occupancies with smooth, flat, horizontal ceilings only.
- Minimum spacing allowed is 8 ft. (2.4 m) unless baffles are installed in accordance with NFPA 13.
- Minimum distance from walls is 4 in. (102 mm).
- Maximum distance from walls shall be no more than one-half of the allowable distance between sprinklers. The distance shall be measured perpendicular to the wall.
- The sprinkler installation and obstruction rules contained in NFPA 13 for extended coverage pendent spray sprinklers must be followed.

**IMPORTANT: Always refer to Bulletin Form No. F\_091699 - Care and Handling of Sprinklers. Also refer to pages EC1-3 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.**

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<b>Approval Chart 2 (FM)</b> Quick Response Extended Coverage Pendent Fusible Element Sprinkler VK601 Maximum 175 PSI (12 Bar) WWP									
Sprinkler Base Part Number <sup>1</sup>	SIN	NPT Thread Size		Nominal K-Factor		Maximum Areas of Coverage <sup>4</sup> (Length x Width)	Minimum Water Supply Requirements <sup>4</sup> Flow/Pressure	FM Approvals <sup>3</sup> (Refer also to Design Criteria below.)	
		Inches	mm	U.S.	metric <sup>2</sup>				
13969	VK601	1/2	15	5.6	80.6	16' x 16' (4.9 m x 4.9 m)	26 gpm @ 21.6 psi (98.4 L/min @ 1.49 Bar)	A1Z	
13969	VK601	1/2	15	5.6	80.6	18' x 18' (5.5 m x 5.5 m)	33 gpm @ 34.7 psi (124.9 L/min @ 2.39 Bar)	A1Z	
<b>Sprinkler Temperature Rating</b> A - 165 °F (74 °C)		<b>Approved Finishes</b> 1 - Brass, Chrome, White Polyester, and Black Polyester				<b>Approved Escutcheons</b> Z - Standard surface-mounted escutcheons or the Viking Microfast® Model F-1 Adjustable Escutcheon, or recessed with the Micromatic® Model E-1 or E-2 Recessed Escutcheon			
<b>Footnotes</b>									
<sup>1</sup> Part number shown is the base part number. For complete part number, refer to current Viking price list 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 chart shows the FM Approvals available at the time of printing. Other approvals may be in process. Check with the manufacturer for any additional approvals. <sup>4</sup> For areas of coverage smaller than shown, use the "Minimum Water Supply Requirement" for the next larger area listed with sprinklers of similar K-factor. Flows and pressures listed are per sprinkler.									



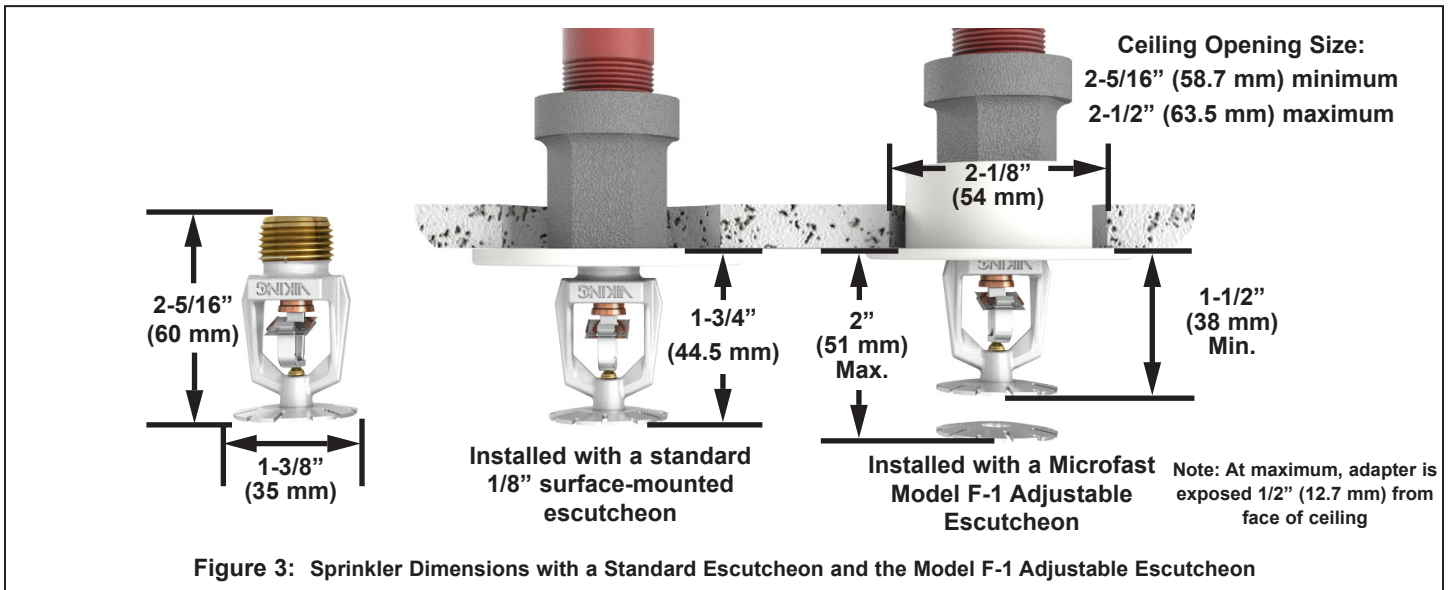
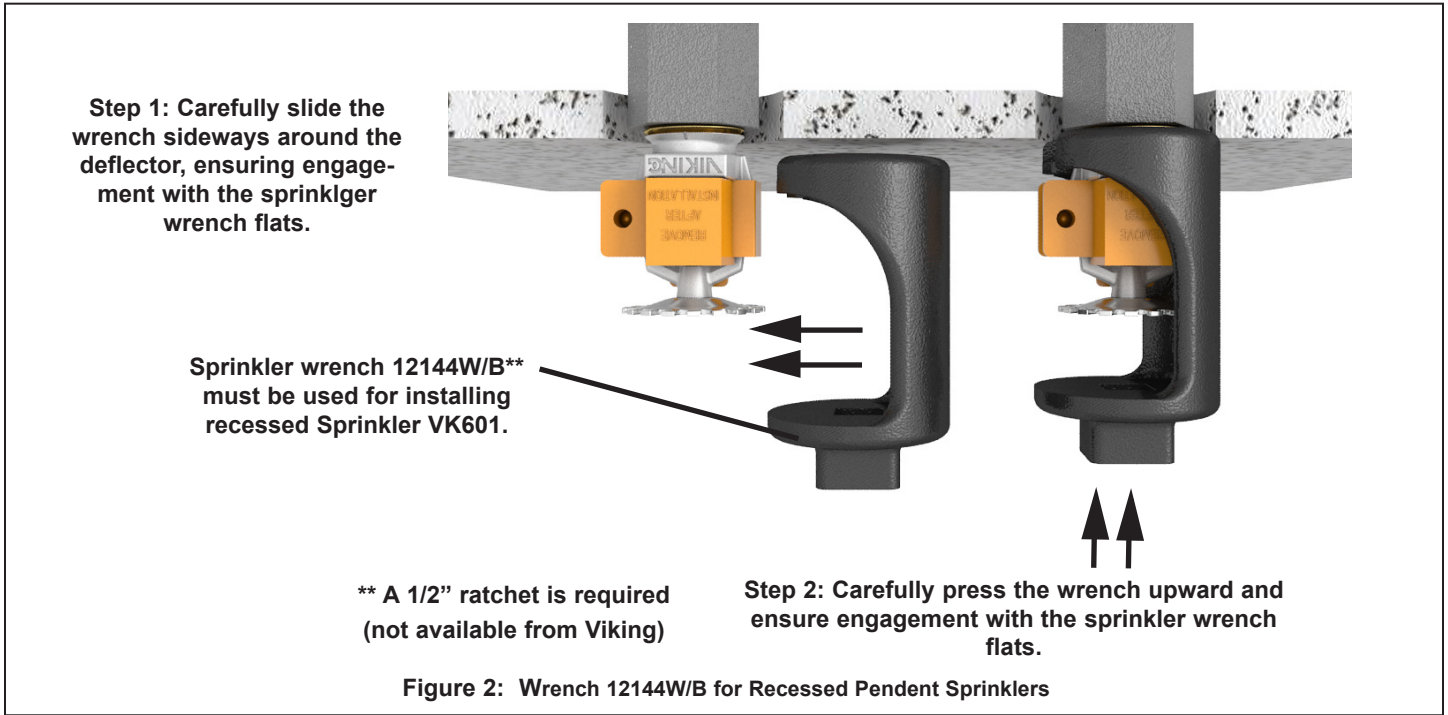
<b>DESIGN CRITERIA - FM</b> (Also refer to Approval Chart 2 above.)
QREC Sprinkler VK601 is FM Approved as a quick response <b>Non-Storage</b> extended coverage pendent sprinkler as indicated in the FM Approval Guide. For specific application and installation requirements, reference the latest applicable 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. <b>NOTE: The FM installation guidelines may differ from cULus and/or NFPA criteria.</b>
<b>IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to pages EC1-3 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.</b>



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