



TECHNICAL DATA

MICROFAST® STANDARD/ QUICK RESPONSE EXTENDED COVERAGE PENDENT 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 Microfast® EC/QREC Pendent Sprinklers are small thermosensitive spray sprinklers available in several different finishes and temperature ratings to meet varying design requirements. These sprinklers have both standard response and quick response listings. The fast response type glass bulb and special deflector combine speed of operation and area of coverage to meet quick response extended coverage standards.

The special Polyester coating can be used in decorative applications where colors are desired.



For Light Hazard Occupancies Only

2. LISTINGS AND APPROVALS

cULus Listed: Category VNIV

FM Approved: Class 2020

NYC Approved: City of New York Board of Standards and Appeals, Calendar No. 219-76-SA

Refer to Approval Chart 1 and Design Criteria on pages 81c-d for cULus Listing requirements, and refer to Approval Chart 2 and Design Criteria on page 81e for FM Approval requirements that must be followed.

3. TECHNICAL DATA

Specifications:

Available since 1988.

Minimum Operating Pressure: Refer to the Approval Charts.

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

Factory tested hydrostatically to 500 psi (34.5 bar).

Testing: U.S.A. Patent No. 4,831,870

Thread sizes: Part No. 06778B: 1/2" (15 mm) NPT

Part No. 07077: 3/4" (20 mm) NPT

Nominal K-Factors: 06778B: 5.6 U.S. (80.6 metric†)

07077: 8.0 U.S. (115.2 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: Part No. 06778B: 2-5/16 (59 mm)

Part No. 07077: 2-3/8" (61 mm)

Material Standards:

Sprinkler Frame: Brass UNS-C84400 or QM Brass for Sprinkler 06778B. Brass UNS-C84400 for all other sprinklers.

Deflector: Brass UNS-C26000

Bulb: Glass, nominal 3 mm diameter

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

Screw: Brass UNS-C36000

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

For Polyester Coated Sprinklers: Belleville Spring-Exposed

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

Order Microfast® EC/QREC Pendent 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-Enloy® = F, White Polyester = M-W, and Black Polyester M-/B

Temperature Suffix (°F/°C): 135°/57° = A, 155°/68° = B, 175°/79° = D

For example, sprinkler VK600 with a Brass finish and a 155 °F/68 °C temperature rating = Part No. 06778BAB

Available Finishes And Temperature Ratings: Refer to Table 1

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

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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Sprinkler Wrenches:

- A. Standard Wrench: Part No. 10896W/B (available since 2000)
 - B. Wrench for recessed pendent sprinklers: Part No. 13577W/B** (available since 2006)
- **A ½" 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

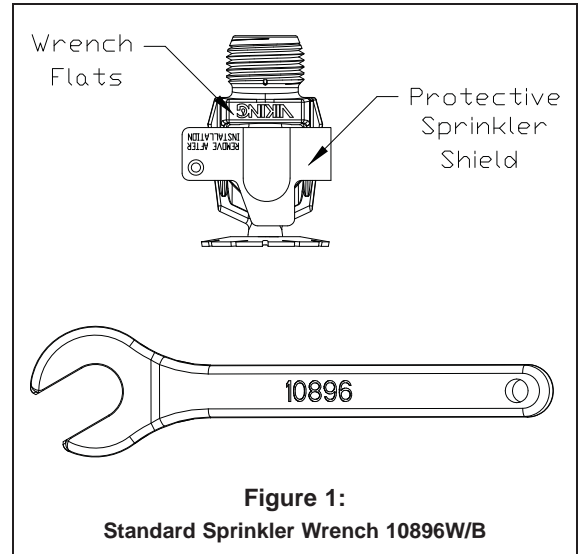
Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

7. AVAILABILITY

Viking Microfast® EC/QREC Pendent 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.



**Figure 1:
Standard Sprinkler Wrench 10896W/B**

TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating ¹	Maximum Ambient Ceiling Temperature ²	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

Sprinkler Finishes: Brass, Chrome-Enloy®, White Polyester³, and Black Polyester³

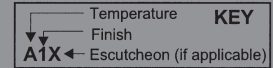
Footnotes

- ¹ The sprinkler temperature rating is stamped on the deflector.
- ² 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.
- ³ 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.

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Approval Chart 1 (UL) Microfast® Standard/Quick Response Extended Coverage Pendent Sprinklers For Light Hazard Occupancies Only. Maximum 175 PSI (12 Bar) WWP										
Sprinkler Base Part No. ¹	SIN	NPT Thread Size		Nominal K-Factor		Maximum Areas of Coverage ⁴ (Length x Width)	Minimum Water Supply Requirements ⁴ Flow/Pressure	Listings and Approvals ³ (Refer also to Design Criteria on page 81d.)		
		Inches	mm	U.S.	metric ²					
Standard Response Applications⁶								cULus⁵	NYC⁷	
07077	VK602	3/4	20	8.0	115.2	20' x 20' (6.1 m x 6.1 m)	40 gpm @ 25.0 psi (151.4 L/min @ 1.72 Bar)	B1Z	B1Y	
06778B	VK600	1/2	15	5.6	80.6	20' x 20' (6.1 m x 6.1 m)	40 gpm @ 51.0 psi (151.4 L/min @ 3.52 Bar)	B1Z	B1Y	
Quick Response Applications										
07077	VK602	3/4	20	8.0	115.2	16' x 16' (4.9 m x 4.9 m)	26 gpm @ 10.6 psi (98.4 L/min @ 0.73 Bar)	E1Z	E1Z	
06778B	VK600	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)	E1Z	E1Z	
07077	VK602	3/4	20	8.0	115.2	18' x 18' (5.5 m x 5.5 m)	33 gpm @ 17.0 psi (124.9 L/min @ 1.17 Bar)	E1Z	E1Z	
06778B	VK600	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)	E1Z	E1Z	
07077	VK602	3/4	20	8.0	115.2	20' x 20' (6.1 m x 6.1 m)	40 gpm @ 25.0 psi (151.4 L/min @ 1.72 Bar)	D1Y	D1Z	
06778B	VK600	1/2	15	5.6	80.6	20' x 20' (6.1 m x 6.1 m)	40 gpm @ 51.0 psi (151.4 L/min @ 3.52 Bar)	D1Y	D1Z	
Sprinkler Temperature Ratings A - 135 °F (57 °C) and 155 °F (68 °C) B - 155 °F (68 °C) and 175 °F (79 °C) C - 175 °F (79 °C) D - 135 °F (57°C) E - 135 °F (57 °C), 155 °F (68 °C), and 175 °F (79 °C)					Approved Finishes 1 - Brass, Chrome-Enloy®, White Polyester, and Black Polyester			Approved Escutcheons Y - Standard surface-mounted escutcheons or the Viking Microfast® Model F-1 Adjustable Escutcheon ⁹ Z - Standard surface-mounted escutcheons or the Viking Microfast® Model F-1 Adjustable Escutcheon ⁹ , or recessed with the Micromatic® Model E-1 or E-2 Recessed Escutcheon		
Footnotes										
¹ Part number shown is the base part number. For complete part number, refer to current Viking price list 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 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. ⁴ 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. ⁵ Listed by Underwriter's Laboratories, Inc. for use in the U.S. and Canada for Light Hazard occupancies with smooth, flat, horizontal ceilings only. ⁶ cULus Listings are limited to Light Hazard occupancies, where allowed by the installation standards being applied. ⁷ Accepted for use, City of New York Board of Standards and Appeals, Calendar Number 219-76-SA.										





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DESIGN CRITERIA - UL

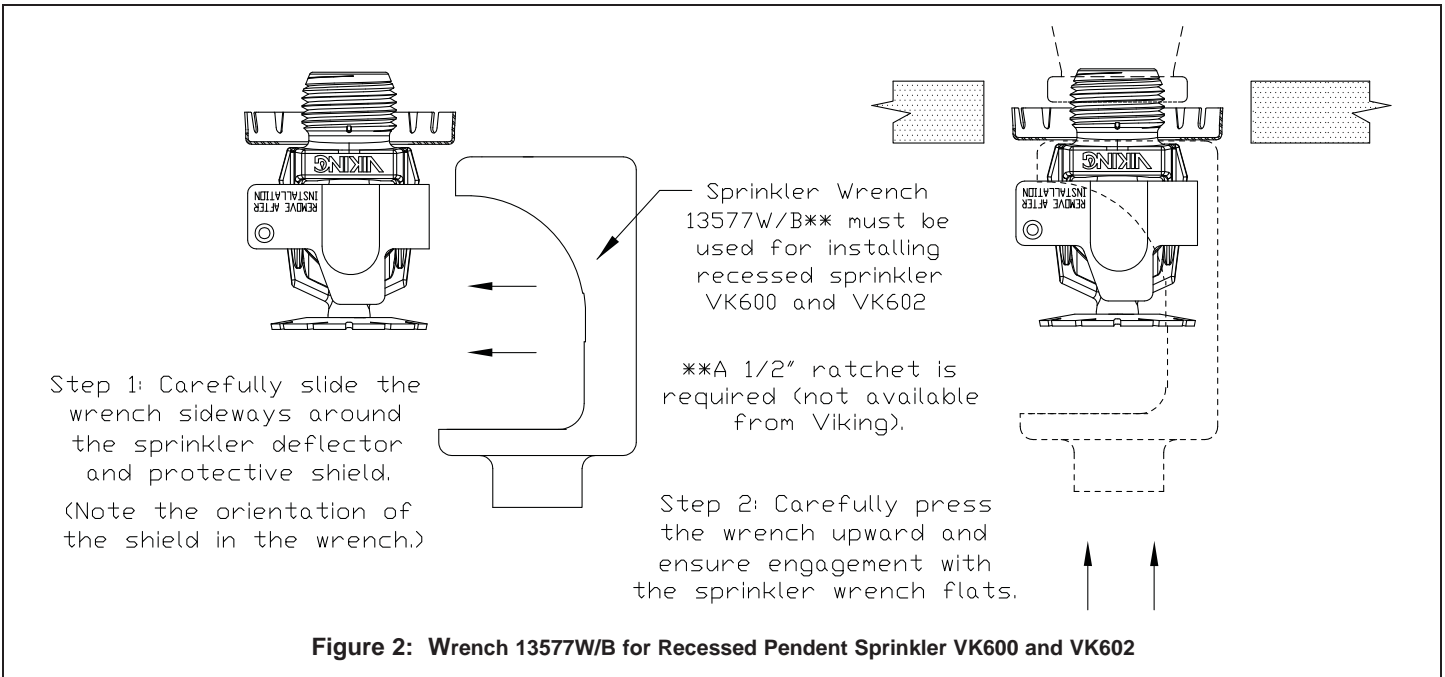
(Also refer to Approval Chart 1 on page 81c.)

cULus Listing Requirements:

Standard/Quick Response Extended Coverage Pendant Sprinklers SIN VK600 and VK602 are cULus Listed as indicated in the Approval Chart for installation in accordance with the latest edition of NFPA 13 for extended coverage pendant spray sprinklers:

- Limited to Light Hazard occupancies, where allowed by the installation standards being applied, 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 pendant 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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Approval Chart 2 (FM)								<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Temperature</td> <td style="text-align: center;">KEY</td> </tr> <tr> <td style="text-align: center;">Finish</td> <td></td> </tr> <tr> <td style="text-align: center;">A1X ← Escutcheon (if applicable)</td> <td></td> </tr> </table>	Temperature	KEY	Finish		A1X ← Escutcheon (if applicable)	
Temperature	KEY													
Finish														
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Microfast® Quick Response Extended Coverage Pendent Sprinklers Maximum 175 PSI (12 Bar) WWP														
Sprinkler Base Part Number ¹	SIN	NPT Thread Size		Nominal K-Factor		Maximum Areas of Coverage ⁴	Minimum Water Supply Requirements ⁴ Flow/Pressure	FM Approvals ³ (Refer also to Design Criteria below.)						
		Inches	mm	U.S.	metric ²	(Length x Width)								
07077	VK602	3/4	20	8.0	115.2	16' x 16' (4.9 m x 4.9 m)	26 gpm @ 10.6 psi (98.4 L/min @ 0.73 Bar)	A1Z						
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DESIGN CRITERIA - FM (Also refer to Approval Chart 2 above.)
<p>FM Approval Requirements:</p> <p>Quick Response Extended Coverage Pendent Sprinklers VK600 and VK602 are FM Approved as quick response Non-Storage extended coverage pendent 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.</p> <p>NOTE: The FM installation guidelines may differ from cULus and/or NFPA criteria.</p>
<p>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.</p>



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