



TECHNICAL DATA

STANDARD RESPONSE FUSIBLE LINK PENDENT SPRINKLER VK110 (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 Standard Response Fusible Link Pendent Sprinkler VK110 is a small thermosensitive solder link spray sprinkler available with various finishes and temperature ratings to meet design requirements. The special Polyester 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 cULus listed as corrosion resistant as indicated in Approval Chart 1. (Note: FM Global has no approval classification for Polyester coatings as corrosion resistant.)



2. LISTINGS AND APPROVALS



cULus Listed: Category VNIV

FM Approved: Classes 2016 and 2017

Refer to Approval Chart 1 and UL Design Criteria on pages cULus Listing requirements, and refer to Approval Chart 2 and FM Design Criteria for 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)
 Thread size: 1/2" NPT
 Nominal K-Factor: 5.6 U.S. (80.6 metric**)
 Glass-bulb fluid temperature rated to -65 °F (-55 °C)
 Overall Length: 2-1/4" (58 mm)

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

Material Standards:

Frame Casting: Brass UNS-C84400 or QM Brass
 Deflector: Copper UNS-C19500
 Fusible Link Assembly: Brass UNS-C40500 and UNS-C51000
NOTE: For chrome sprinklers, the fusible link assembly is painted silver for decorative purposes only.
 Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape
 Screw: Brass UNS-C36000
 Seat: Copper UNS-C11000
 Pip Cap Attachment: UNS-C36000

For Polyester Coated Sprinklers: Belleville Spring-Exposed

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

Viking Standard Response Fusible Link Pendent Sprinkler VK110 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, Wax Coated = C

Temperature Suffix: 165 °F (74 °C) = C, 220 °F (104 °C) = M, 286 °F (141 °C) = G

For example, sprinkler VK110 with a 1/2" thread, Brass finish and a 165 °F (74 °C) temperature rating = Part No. 12972AB

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).
 D. Wrench for recessed pendent and/or Wax Coated Sprinklers: Part No. 13577W/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)

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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4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

5. OPERATION

During fire conditions, the heat-sensitive fusible link disengages, the pip cap and spring are released, and the waterway is opened. 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 Standard Response Fusible Link Pendent Sprinkler VK110 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.

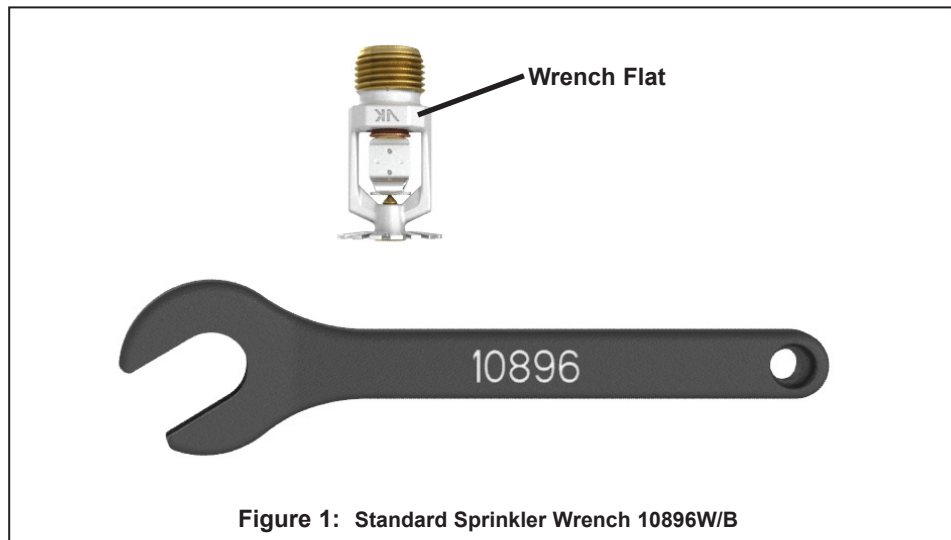


Figure 1: Standard Sprinkler Wrench 10896WB



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TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating ¹	Maximum Ambient Ceiling Temperature ²	Bulb Color
Ordinary	165 °F (74 °C)	100 °F (38 °C)	None
Intermediate	220 °F (104 °C)	150 °F (65 °C)	White
High	286 °F (141 °C)	225 °F (107 °C)	Blue

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

Corrosion-Resistant Coatings⁴: White Polyester and Black Polyester in all temperature ratings. Wax-Coated Brass for sprinklers with the following temperature ratings:

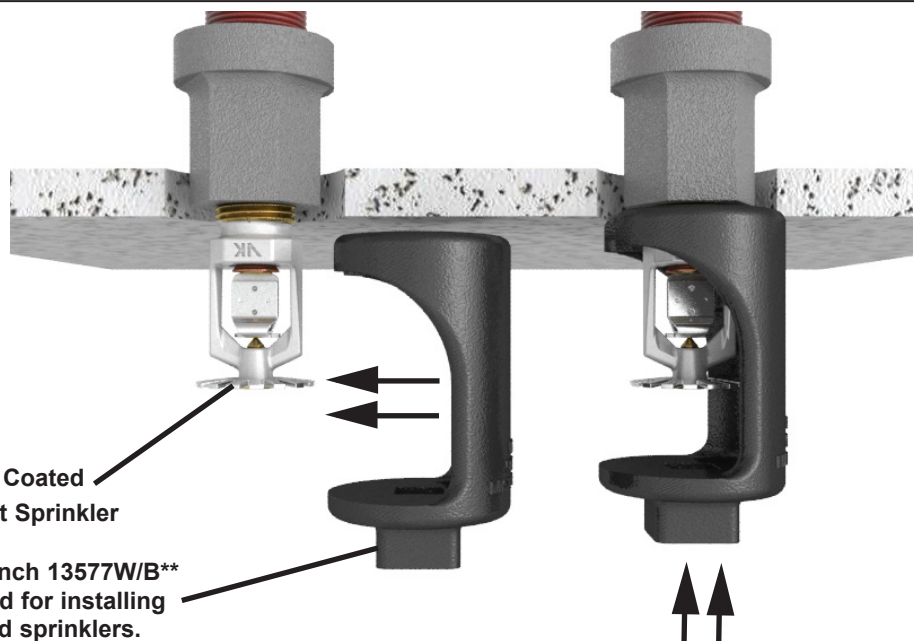
165 °F (74 °C) Lt. Brown Wax 220 °F (104 °C) Dark Brown Wax⁵ 286 °F (141 °C) Dark Brown Wax⁵

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 Sprinklers of Ultra-High temperature rating are intended for use inside ovens, dryers, or similar enclosures with normal operating temperatures above 300 °F (149 °C). Where the ambient temperature around the Ultra-High temperature rated sprinkler is significantly reduced below 300 °F (149 °C), response time may be severely retarded.
- ⁴ 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. Note that the spring is exposed on sprinklers with Polyester coatings.
- ⁵ Wax melting point is 170 °F (76 °C) for 220 °F (104 °C) and 286 °F (141 °C) temperature rated sprinklers.

Step 1: Carefully slide the wrench sideways around the deflector, ensuring engagement with the sprinkler wrench flats.

Wax Coated Pendent Sprinkler
 Sprinkler wrench 13577W/B** must be used for installing wax coated sprinklers.



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

Step 2: Carefully press the wrench upward and ensure engagement with the sprinkler wrench flats.

Figure 2: Wrench 13577W/B for Recessed and/or Wax Coated Sprinklers



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Approval Chart 1 (UL)

Standard Response Pendent Sprinkler VK110
Maximum 175 PSI (12 bar) WWP

KEY	
Temperature	→
Finish	→
Escutcheon (if applicable)	←

Sprinkler Base Part Number ¹	SIN	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals ³ (Refer also to UL Design Criteria.)			
		NPT	BSP	U.S.	metric ²	Inches	mm	cULus ⁴	VdS	LPCB	CE
Standard Orifice											
12972	VK110	1/2"	15 mm	5.6	80.6	2-1/4"	58	A2, B1, B2X	--	--	--
Approved Temperature Ratings A - 165 °F (74 °C), 220 °F (104 °C), and 286 °F (141 °C) B - 165 °F (74 °C) and 220 °F (104 °C)				Approved Finishes 1 - Wax-Coated Brass (corrosion resistant) 2 - Brass, Chrome, White Polyester ^{5,6} , and Black Polyester ^{5,6}				Approved Escutcheons X - Installed with standard surface-mounted escutcheons or the Viking Microfast® Model F-1 Adjustable Escutcheon, or recessed with the Viking Micromatic® Model E-1 or E-2 Recessed Escutcheon.			
Footnotes											
¹ Base part number is shown. For complete part number, refer to Viking's current price schedule. ² Metric K-factor shown is for use 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 use in the U.S. and Canada. ⁵ cULus Listed as corrosion resistant. ⁶ 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.)

cULus Listing Requirements:

Viking Standard Response Fusible Link Pendent Sprinkler VK110 is cULus Listed as indicated in Approval Chart 1 for installation in accordance with the latest edition of NFPA 13 for standard spray sprinklers.

Designed for use in Light, Ordinary, and Extra Hazard occupancies.

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) 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.

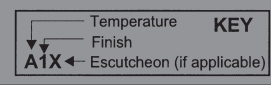
The sprinkler installation and obstruction rules contained in NFPA 13 for standard spray pendent sprinklers must be followed.

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to page SR1-3 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) Standard Response Pendent Sprinkler VK110 Maximum 175 PSI (12 bar) WWP								
Sprinkler Base Part Number ¹	SIN	Thread Size		Nominal K-Factor		Overall Length		FM Approvals ³ (Refer also to Design Criteria below.)
		NPT	BSP	U.S.	metric ²	Inches	mm	
Standard Orifice								
12972	VK110	1/2"	15 mm	5.6	80.6	2-1/4"	58	A1
Approved Temperature Ratings A - 165 °F (74 °C), 220 °F (104 °C), and 286 °F (141 °C)				Approved Finishes 1 - Brass, White Polyester ⁴ , and Black Polyester ⁴				
Footnotes								
¹ Base part number is shown. For complete part number, refer to Viking's current price schedule. ² Metric K-factor shown is for use 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 Other colors are available on request with the same Approvals as the standard colors.								



DESIGN CRITERIA - FM (Also refer to Approval Chart 2.)
<p>FM Approval Requirements:</p> <p>Sprinkler VK110 is FM Approved as a standard response Non-Storage 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.</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 page SR1-3 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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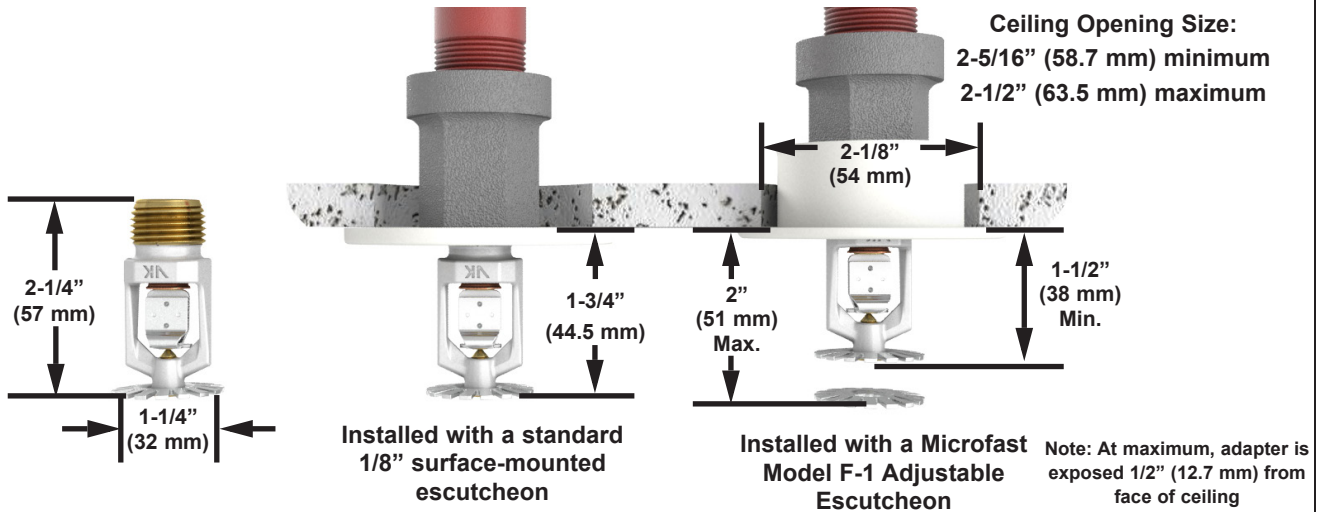


Figure 3: Sprinkler Dimensions with a Standard Escutcheon and the Model F-1 Adjustable Escutcheon

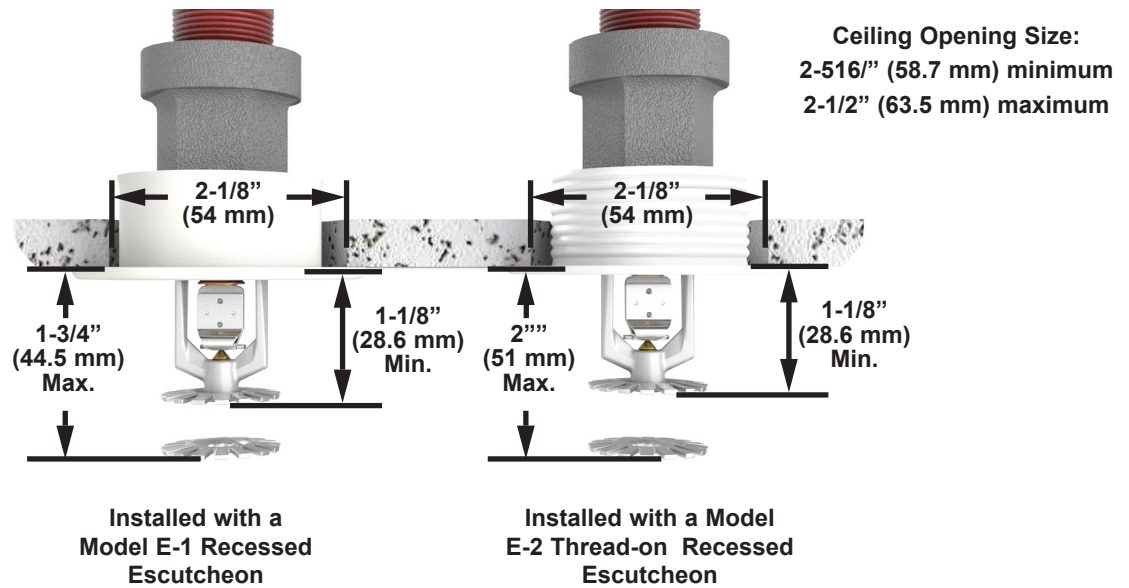


Figure 4: Sprinkler Dimensions with the Model E-1 and E-2 Recessed Escutcheons