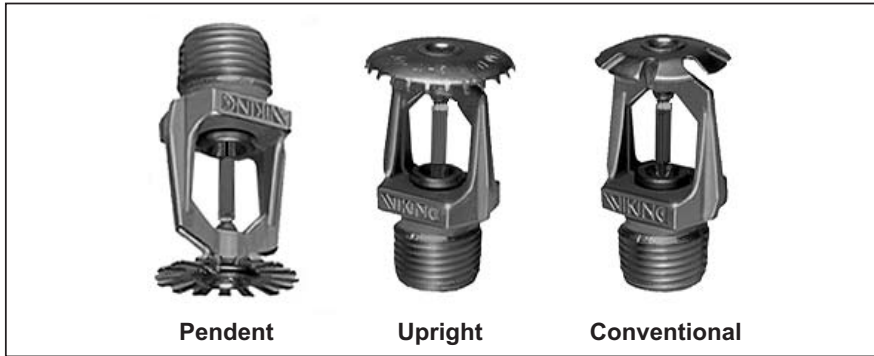




TECHNICAL DATA

**MICROMATIC®
SPECIAL RESPONSE
SPRINKLERS**



1. PRODUCT NAME

Viking Micromatic® Special Response Sprinklers

- Available Styles: Upright, Pendent, and Conventional

2. MANUFACTURER

THE VIKING CORPORATION
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Hastings, Michigan 49058, U.S.A.
Telephone: (269) 945-9501
(877) 384-5464
Fax: (269) 945-9599
e-mail: techsvcs@vikingcorp.com

VIKING S.A.
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Telephone: (352) 58.37.37
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3. PRODUCT DESCRIPTION

Viking Micromatic® Special Response Sprinklers are small thermosensitive glass bulb sprinklers available in various finishes, temperature ratings, and orifice sizes to meet design requirements.

During fire conditions, the heat-sensitive liquid in the glass bulb expands, causing the bulb 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.

4. TECHNICAL DATA LISTINGS AND APPROVALS

Refer to the Approval Chart on pg 125 c. Glass-bulb fluid temperature rated to -65 °F (-55 °C). Factory tested hydrostatically to 500 PSI (3 448 kPa). Min. Operating Pressure: 7 PSI (48,3 kPa)

Rated to 175 PSI (1 207 kPa) water working pressure.

Testing: USA Patent No. 4,831,870
Response Time Index (RTI): 50-80 (ms)^{1/2}

SPRINKLER MATERIALS

Frame: Brass Castings UNS-C84400
Deflector: Brass UNS-C26000
Bulb: Glass, nominal 4 mm or 5 mm diameter

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

Compression Screw: Brass UNS-C36000
Pip Cap: Brass UNS-C31600, or:
Pip Cap and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400

Polyester Coated Sprinklers:

Belleville Spring Sealing Assembly: Exposed

Screw: Nickel Plated

AVAILABLE FINISHES

Brass, Chrome-Enloy® (patents pending), and White Polyester

ACCESSORIES (order separately)

Sprinkler Wrenches:

- A. Standard Wrench: Part No. 10896W/B (available since 2000) or 05000CW/B (no longer available)

- B. Wrench for Coated and Recessed Sprinklers: Part No. 07398W* (available since 1990) or Part No. 12144W/B** (available since 2003).

NOTE: Recessed pendent sprinklers with protective caps must use wrench 12144W/B.

*A 1/2" ratchet is required (not available from Viking). See the "Sprinkler Accessories" section of the Viking data book.

5. INSTALLATION

WARNING: Viking sprinklers are manufactured and tested to meet the rigid requirements of approving agencies. The sprinklers are designed to be installed in accordance with recognized installation standards. Deviation from the standards or any alteration to the sprinkler after it leaves the factory including, but not limited to: painting, plating, coating, or modification, may render the sprinkler inoperative and would automatically nullify the approval and any guarantee made by The Viking Corporation.

- A. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the latest standards of NFPA, FM Global, LPCB, Assemblée Plenièrè, VdS, or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards whenever applicable. The use of Special Response sprinklers may be limited due to occupancy and hazard. Refer to the Authority Having Jurisdiction prior to installation.

- B. Sprinklers must be handled with care. They must be stored in a cool, dry place in their original shipping container. Never install sprinklers that have been dropped, damaged, or exposed to temperatures exceeding

Sprinkler Temperature Classification	Nominal Sprinkler Temperature Rating (Fusing Point)	Maximum Ambient Ceiling Temperature ¹	Bulb Color ²
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-Enloy®, and White Polyester

¹ 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.
² The temperature rating is stamped on the deflector.

Table 1

	<h2 style="margin: 0;">TECHNICAL DATA</h2>	<h3 style="margin: 0;">MICROMATIC® SPECIAL RESPONSE SPRINKLERS</h3>
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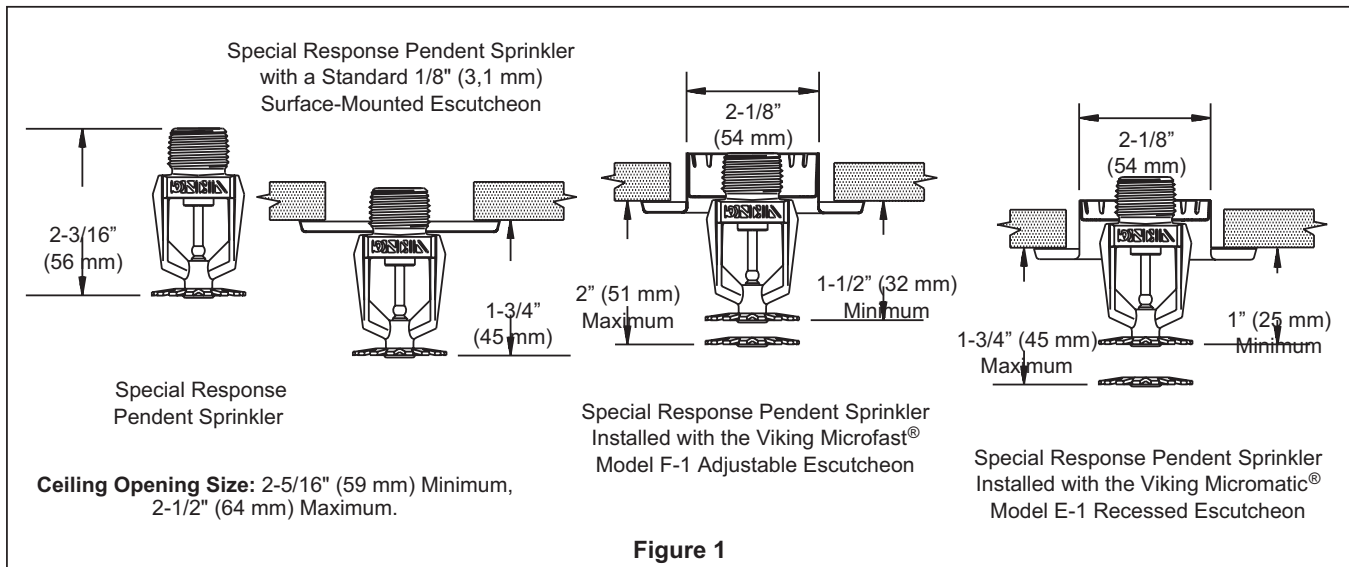
Approval Chart															
Micromatic® Special Response Sprinklers															
Standard Orifice															
Thread Size		Maximum Pressure	Sprinkler Description			Nominal K-Factor		Overall Length		Listings and Approvals ²					
NPT	BSP		Style	Base Part No. ¹	SIN	U.S.	metric ⁴	Inches	mm	UL	C-UL	FM	NYC	VdS	LPCB
½"	–	175 psi	Pendent ³	09224	VK134	5.6	8,1	2-3/16	56	–	–	–	–	A2X, B2Y	–
–	15 mm	175 psi	Pendent ³	09956	VK134	5.6	8,1	2-3/16	56	–	–	–	–	A2X, B2Y	–
½"	–	175 psi	Upright	09226	VK138	5.6	8,1	2-3/16	56	–	–	–	–	A1	–
–	15 mm	175 psi	Upright	09959	VK138	5.6	8,1	2-3/16	56	–	–	–	–	A1	–
½"	–	175 psi	Conventional	09225	VK136	5.6	8,1	2-3/16	56	–	–	–	–	A1	–
–	15 mm	175 psi	Conventional	09958	VK136	5.6	8,1	2-3/16	56	–	–	–	–	A1	–
Large Orifice															
¾"	20 mm	175 psi	Pendent ³	09228	VK212	8.0	11,5	2-3/8	60	–	–	–	–	A1X, B1Y	–
¾"	20 mm	175 psi	Upright	09227	VK210	8.0	11,5	2-3/8	60	–	–	–	–	A1	–
¾"	20 mm	175 psi	Conventional	09229	VK214	8.0	11,5	2-3/8	60	–	–	–	–	A1	–
Small Orifice															
–	10 mm	175 psi	Pendent ³	09285	VK032	4.2	6,0	2-3/16	56	–	–	–	–	A2X, B2Y	–
–	10 mm	175 psi	Upright	09284	VK030	4.2	6,0	2-3/16	56	–	–	–	–	A1	–
Approved Temperature Ratings				Approved Finishes				Approved Escutcheons							
A - 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C) B - 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)				1 - Brass and Chrome-Enloy® 2 - Brass, Chrome-Enloy®, and White Polyester				X - Standard surface-mounted escutcheon or the Viking Microfast® Model F-1 Adjustable Escutcheon ⁵ Y - Standard surface-mounted escutcheon or the Viking Microfast® Model F-1 Adjustable Escutcheon ⁵ , or recessed with the Viking Micromatic® Model E-1 or E-2 Recessed Escutcheon							
Footnotes															
¹ Sprinkler base part number shown. For complete part number, refer to Viking's current price schedule. ² 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. ³ Refer to the "Sprinkler Accessories" section of the data book for approved escutcheons and other accessories. ⁴ Metric K-Factor shown is for use when pressure is measured in kPa. When pressure is measured in BAR, multiply the metric K-factor shown by 10.0. ⁵ The Viking Microfast® Model F-1 Adjustable Escutcheon is considered a surface-mounted escutcheon because it does not allow the fusible element of the sprinkler to be recessed behind the face of the wall or ceiling.															

- the maximum ambient temperature allowed (refer to Table 1). Never install any glass-bulb sprinkler if the bulb is cracked or if there is a loss of liquid from the bulb. Any sprinkler with a loss of liquid from the glass bulb should be destroyed immediately.
- C. Sprinklers must be protected from mechanical damage. Sprinklers subject to mechanical damage must be protected with an approved sprinkler guard.
 - D. Use only sprinklers listed as corrosion resistant when subject to corrosive environments. When installing corrosion-resistant sprinklers, take care not to damage the corrosion-resistant coating. Use only the special wrench designed for installing coated and recessed Viking sprinklers (any other wrench may damage the unit).
 - E. Use care when locating sprinklers near fixtures that can generate heat. Do not install sprinklers where they could be exposed to temperatures exceeding the maximum recommended ambient temperature for the temperature rating used.
 - F. Wet-pipe systems must be provided with adequate heat. Sprinklers supplied from dry systems in areas subject to freezing must be listed dry sprinklers, or upright or horizontal sidewall sprinklers installed so that water is not trapped. For dry systems, pendent sprinklers and sidewall sprinklers installed on return bends are permitted, where the sprinklers, return bend, and branch line piping are in an area maintained at or above 40 °F (4 °C). When installing Special Response Sprinklers on dry systems, refer to the installation standards and the Authority Having Jurisdiction.
 - G. Before installation, be sure to have the appropriate sprinkler model and style, with the correct orifice size, temperature rating, and response characteristics. The sprinklers must be installed after the piping is in place to prevent mechanical damage. Keep sprinklers with protective caps or shields contained within the caps or shields during installation and testing, and any time the sprinkler is shipped or handled.
 1. Install the escutcheon, (if used) which is designed to thread onto the external threads of the sprin-

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kler. Refer to the "Sprinkler Accessories" section of the data book for approved escutcheons and other accessories.

2. Apply a small amount of pipe-joint compound or tape to the external threads of the sprinkler only, taking care not to allow a buildup of compound in the sprinkler inlet. **NOTE:** Sprinklers with protective caps or bulb shields must be contained within the caps or shields before applying pipe-joint compound or tape.
3. Install the sprinkler onto the piping using the special sprinkler wrench only, taking care not to over-tighten or damage the sprinkler operating parts. **DO NOT** use the deflector to start or thread the sprinkler into a fitting.
- H. After installation, the entire sprinkler system must be tested. The test must be conducted to comply with the installation standards. Make sure the sprinkler has been properly tightened. If a thread leak occurs, normally the sprinkler must be removed, new pipe-joint compound or tape applied, and then re-installed. This is due to the fact that when the joint seal is damaged, the sealing compound or tape is washed out of the joint. Air testing the sprinkler piping prior to testing with water may be considered in areas where leakage during testing

must be prevented. Refer to the installation standards and the Authority Having Jurisdiction.

- I. **Remove plastic protective sprinkler caps or shields AFTER the ceiling finish work is completed where the sprinkler is installed and there no longer is a potential for mechanical damage to sprinkler operating elements.** To remove the bulb shields, simply pull the ends of the shields apart where they are snapped together. To remove caps from frame style sprinklers, turn the caps slightly and pull them off the sprinklers. **SPRINKLER CAPS OR BULB SHIELDS MUST BE REMOVED FROM SPRINKLERS BEFORE PLACING THE SYSTEM IN SERVICE!** Retain a protective cap in the spare sprinkler cabinet.
- J. If it is necessary to remove the entire sprinkler unit, the system must be taken out of service. See section 7. MAINTENANCE and follow all warnings and instructions.

7. MAINTENANCE

NOTICE: The owner is responsible for maintaining the fire protection system and devices in proper operating condition. For minimum maintenance and inspection requirements, refer to the NFPA standard that describes care and maintenance of sprinkler systems. In addition, the Authority Having Jurisdiction may have additional maintenance,

testing, and inspection requirements that must be followed.

- A. Sprinklers must be inspected on a regular basis for corrosion, mechanical damage, obstructions, paint, etc. The frequency of the inspections may vary due to corrosive atmospheres, water supplies, and activity around the device.
- B. Sprinklers that have been painted, caulked, or mechanically damaged must be replaced immediately. Sprinklers showing signs of corrosion shall be tested and/or replaced immediately as required. Installation standards require sprinklers to be tested, and if necessary, replaced after a specified term of service. Refer to the installation standards (e.g., NFPA 25) and the Authority Having Jurisdiction for the specified period of time after which testing and/or replacement is required. Sprinklers that have operated cannot be re-assembled or re-used, but must be replaced. When replacing sprinklers, use only new sprinklers.
- C. The sprinkler discharge pattern is critical for proper fire protection. Nothing should be hung from, attached to, or otherwise obstruct the discharge pattern. All obstructions must be immediately removed or, if necessary, additional sprinklers installed.
- D. When replacing existing sprinklers, the system must be removed from service. Refer to the appropriate sys-



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tem description and/or valve instructions. Prior to removing the system from service, notify all Authorities Having Jurisdiction. Consideration should be given to employment of a fire patrol in the affected area.

1. Remove the system from service, drain all water, and relieve all pressure on the piping.
2. Using the special sprinkler wrench, remove the old sprinkler and install the new unit. Care must be taken to ensure that the replace-

ment sprinkler is the proper model and style, with the correct orifice size, temperature rating, and response characteristics. A fully stocked spare sprinkler cabinet should be provided for this purpose. Follow instructions in section 6. INSTALLATION.

3. Place the system back in service and secure all valves. Check for and repair all leaks. Sprinkler systems that have been subjected to a fire must be returned to service

as soon as possible. The entire system must be inspected for damage and repaired or replaced as necessary. Sprinklers that have been exposed to corrosive products of combustion or high ambient temperatures, but have not operated, should be replaced. Refer to the Authority Having Jurisdiction for minimum replacement requirements.