1. DESCRIPTION
The Viking MicrofastHP® EC/QREC Fusible Element Horizontal Sidewall Sprinkler VK613 is a small thermosensitive solder link spray sprinkler available with various finishes and temperature ratings to meet design requirements. The VK613 has both standard response and quick response listings. The fusible operating element and special deflector characteristics meet the challenges of quick response extended coverage standards. The special Polyester and Electroless Nickel PTFE (ENT) coatings can be used in decorative applications where colors are desired. In addition, the Electroless Nickel PTFE (ENT) coating has been investigated for installation in corrosive environments and is listed/approved as indicated in the Approval Chart(s).

2. LISTINGS AND APPROVALS
cULus Listed: Category VNIV
Refer to Approval Chart 1 and Design Criteria for cULus Listing requirements that must be followed.

3. TECHNICAL DATA
Specifications:
- Minimum Operating Pressure: 7 psi (0.5 bar)
- Maximum Working Pressure: 250 psi (17 bar)
Factory tested hydrostatically to 500 psi (34.5 bar)
- Deflector (Sprinkler 13949): U.S.A. Patent No. 4,296,816
- Thread Size: 1/2" (15 mm) NPT
- Nominal K-Factor: 5.6 U.S. (80.6 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.
- Overall Length: 2-11/16" (68 mm)

Material Standards:
- Frame Casting: Brass UNS-C84400
- Deflector: Phosphor Bronze UNS-C51000
- 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 ENT Coated Sprinklers:
- Belleville Spring-Exposed, Screw and Pip Cap-ENT Coated
For Polyester Coated Sprinklers:
- Belleville Spring-Exposed

Ordering Information: (Also refer to the current Viking price list.)
Order Quick Response Horizontal Sidewall Fusible Element Sprinkler VK613 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 ENT = JN

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

For example, sprinkler VK613 with a Brass finish and a 165 °F / 74 °C temperature rating = Part No. 13973AC

Available Finishes And Temperature Ratings: Refer to Table 1.

Accessories: (Also refer to the Viking website.)

Sprinkler Wrenches:
A. Standard Wrench: Part No. 21475M/B (available since 2017).
B. Wrench for recessed sprinklers with protective shields: Part No. 13655W/B** (available since 2003)
**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 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
Viking Quick Response Horizontal Sidewall 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.
TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

<table>
<thead>
<tr>
<th>Sprinkler Temperature Classification</th>
<th>Sprinkler Nominal Temperature Rating¹</th>
<th>Maximum Ambient Ceiling Temperature²</th>
<th>Frame Paint Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordinary</td>
<td>165 °F (74 °C)</td>
<td>100 °F (38 °C)</td>
<td>None</td>
</tr>
<tr>
<td>Intermediate</td>
<td>205 °F (96 °C)</td>
<td>150 °F (65 °C)</td>
<td>White</td>
</tr>
</tbody>
</table>

Sprinkler Finishes: Brass, Chrome, White Polyester³, Black Polyester³, and ENT⁴,⁵
Corrosion Resistant Sprinkler Coatings: ENT⁴,⁵

Footnotes

¹ Decorative sprinklers may not be color coded. The 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 ENT coating is applied to the exposed exterior surfaces including the waterway.
⁴ 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 ENT sprinklers, the waterway is coated. Note that the spring is exposed on sprinklers with ENT coatings.
⁵ cULus Listed as corrosion resistant.

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

Sprinkler wrench 13655W/B⁰ must be used for installing recessed HSW sprinklers.

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

Step 2: Carefully press the wrench onto the sprinkler wrench flats.

Figure 2: Wrench 13655W/B for Recessed Sprinklers
MicrofastHP® EC/QREC
FUSIBLE ELEMENT HSW
HIGH PRESSURE
SPRINKLER VK613 (K5.6)

## Approval Chart
MicrofastHP® EC/QREC Extended Coverage Fusible Element HSW Sprinkler VK613
For Light Hazard Occupancies Only.

<table>
<thead>
<tr>
<th>Sprinkler Base Part Number¹</th>
<th>SIN</th>
<th>Max. Pressure</th>
<th>NPT Thread Size</th>
<th>Nominal K-Factor</th>
<th>Maximum Areas of Coverage²</th>
<th>Minimum Water Supply Requirements³, Flow/Pressure</th>
<th>Listings⁴ (Refer also to Design Criteria.)</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13973</td>
<td>VK613</td>
<td>250 psi</td>
<td>1/2</td>
<td>15</td>
<td>5.6</td>
<td>80.6</td>
<td>16' x 18' (4.9 m x 5.5 m)</td>
</tr>
<tr>
<td>HP Sprinkler VK613 (Base Part No. 13973) for Standard Response⁶ Extended Coverage Applications</td>
<td>Installed with the deflectors located 6” to 12” (152 mm to 305 mm) below smooth, flat, horizontal ceilings only.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
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<tr>
<td>HP Sprinkler VK613 (Base Part No. 13973) for Quick Response Extended Coverage Applications</td>
<td>Installed with the deflectors located 6” to 12” (152 mm to 305 mm) below smooth, flat, horizontal ceilings only.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
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<tr>
<th>Approved Temperature Ratings</th>
<th>Approved Finishes</th>
<th>Approved Escutcheons</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - 165 °F (74 °C) and 205 °F (96 °C)</td>
<td>1 - Brass, Chrome, White Polyester, and Black Polyester</td>
<td>X - Installed with standard surface-mounted escutcheons or recessed with the Viking Micromatic® Model E-1, E-2, or G-1 Recessed Escutcheon</td>
</tr>
<tr>
<td>B - 165 °F (74 °C)</td>
<td>2 - ENT⁹</td>
<td>Y - Installed with standard surface-mounted escutcheons or recessed with the Viking Micromatic® Model E-1</td>
</tr>
</tbody>
</table>

**Footnotes**

1. Base part number is shown. For complete part number, refer to current Viking price list schedule.
2. Metric K-factor shown is for use when pressure is measured in kPa. When pressure is measured in bar, multiply the metric K-factor by 10.0.
3. This chart shows listings and approvals available at time of printing. Check with the manufacturer for any additional approvals.
4. Listed by Underwriter’s Laboratories, Inc. for use in Canada.
5. Meets New York City requirements, effective July 1, 2008.
6. Listings and Approvals are limited to Light Hazard Occupancies where allowed by the installation standards being applied.
7. For areas of coverage smaller than shown, use the “Minimum Water Supply Requirement” for the next larger listed area of coverage with sprinklers of similar K-Factor.
8. Listed area of coverage measured along ceiling slope. Consult Figure 6 for installation notes.
9. cULus Listed as corrosion resistant.
**TECHNICAL DATA**

MicrofastHP® EC/QREC FUSIBLE ELEMENT HSW HIGH PRESSURE SPRINKLER VK613 (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 www.vikinggroupinc.com.

**DESIGN CRITERIA**
(Also refer to the Approval Chart.)

**cULus Listing Requirements:** MicrofastHP® EC/QREC Horizontal Sidewall Sprinkler VK613 is cULus Listed as indicated in the Approval Chart for installation in accordance with the latest edition of NFPA 13 for extended coverage sidewall spray sprinklers:

- Sprinkler VK613 is limited to Light Hazard occupancies with smooth, flat, horizontal ceilings only.
- Refer to the Approval Chart for required deflector distance below the ceiling. Install with the leading edge of the deflector oriented parallel to the ceiling.
- Minimum distance from end walls is 4 in. (102 mm).
- Maximum distance from the end wall 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 sidewall spray sprinklers must be followed.

**IMPORTANT:** Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to 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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**Figure 3: Sidewall Sprinkler Dimensions with a Standard Escutcheon**

Wall Opening Size:
- 2-1/16" (59 mm) minimum
- 2-1/2" (64 mm) maximum

Installed with a Standard 1/8" Surface-Mounted Escutcheon
MicrofastHP® EC/QREC
FUSIBLE ELEMENT HSW
HIGH PRESSURE
SPRINKLER VK613 (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
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Figure 4: Sidewall Sprinkler Dimensions with the Model E-1 and E-2 Recessed Escutcheons

Adjustable Adapter Ring

1-1/16” (27 mm) Depth

Adjustable Outer Cup

2-5/8” (66 mm)

1/8” (3 mm)

4” (102 mm)

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

Step 2: Carefully press the wrench onto the sprinkler wrench flats.

Figure 5: Sidewall Sprinkler Dimensions with the Model G-1 Escutcheon

Wall opening size with the Model G-1 Escutcheon:
2-5/8” (66 mm) minimum
3-3/4” (95 mm) maximum

Maximum Recess:
1/2” (13 mm)