1. DESCRIPTION
The Viking Quick Response Recessed Flush Dry Sprinkler VK482 is a small high-sensitivity fusible element sprinkler designed for installation on concealed pipe systems where the appearance of a smooth ceiling is desired. The sprinkler orifice design, with a K-Factor of 5.6 (80.6 metric*), allows the sprinkler's efficient use of available water supplies for the hydraulically designed fire-protection system. The two-piece design of the sprinkler and escutcheon allows installation and testing of the sprinkler prior to ceiling installation. The escutcheon allows for up to 3/4" (19.5 mm) of vertical adjustment and can be removed and re-installed, allowing access above removable ceiling panels without shutting down the sprinkler system and removing the sprinkler.

2. LISTINGS AND APPROVALS

UL Listed: Category VNIV
Refer to the Approval Chart and Design Criteria on pages 3 and 4 for UL Listing requirements that must be followed.

3. TECHNICAL DATA
Specifications:
Minimum Operating Pressure: 7 psi (0.5 bar)
Maximum Working Pressure: 175 psi (12 bar). Factory tested hydrostatically to 500 psi (34.5 bar).
Thread size: 1" NPT (25mm)
Nominal K-Factor: 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.

Covered by the following U.S. Patents: 8,636,075 and 10,220,231

Material Standards:
Sprinkler Body: QM Brass
Deflector Assembly: Bronze UNS-C22000 and Brass UNS-C36000
Pin Assembly: Stainless Steel UNS-S30200 and Brass UNS-C23000
Seat Assembly: Brass UNS-C31400 or UNS-C31600
Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape
Fusible Element Assembly: Beryllium Nickel and Eutectic Solder
Element Cover: Copper UNS-C11000
Lever Bar Assembly: Copper Alloy UNS-C72500 and Brass UNS-C36000
Lever Arm: Stainless Steel UNS-S31600
Element Assembly: Copper UNS-C11000 and Nickel Alloy
Barrel: Steel Pipe UNS-G10260, Electrodeposited Epoxy Base Finish
Inlet and Barrel End: QM Brass

Escutcheon Materials:
Flush Dry Escutcheons: Cold Rolled Steel UNS-G10080

Ordering Information: (Also refer to the current Viking price list.)
Order Recessed Flush Dry Sprinkler VK482 by first adding the appropriate suffix for the sprinkler and escutcheon finish, the appropriate suffix for the temperature rating, and then the suffix for the length ("A" dimension) to sprinkler base part number. Order in a specific length noted as the "A" dimension (see Figure 2). The "A" dimension is the distance from the face of the fitting (tee) to the desired finished surface of the ceiling. These sprinklers are listed and approved in lengths from 4-1/2" to 48" (114 mm to 1,219 mm).

Finish Suffix: White Polyester = M-W
Temperature Suffix: 165 °F (74 °C) = C, 205 °F (96 °C) = E
For example, sprinkler VK482 a White Polyester finish and a 165 °F (74 °C) temperature rating, and "A" length of 10" = Part No. 18385MC/W10.

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

Accessories:
(Also refer to the Viking website.)

Sprinkler Wrench:
A. Dry Flush Sprinkler Wrench Part No. 18315 (available since 2012)**
**Requires a ½” ratchet (not available from Viking).

Sprinkler Cabinet:
Part No. 01731A, Capacity: five (5) sprinklers (available since 1971)

Replacement Escutcheon:
(3-5/8” diameter): Base Part No. 18386
Specify finish of the escutcheon by adding the appropriate suffix for the finish to the base part number:
Finish Suffix: White Polyester = W
For example, escutcheon 18386 with a White Polyester finish = 18386W.

Insulating Boot: Part No. 22087M/W

4. INSTALLATION
Refer to appropriate NFPA Installation Standards.

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

<table>
<thead>
<tr>
<th>Sprinkler Temperature Classification</th>
<th>Sprinkler Nominal Temperature Rating(^1)</th>
<th>Maximum Ambient Ceiling Temperature(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordinary</td>
<td>165 °F (74 °C)</td>
<td>100 °F (38 °C)</td>
</tr>
<tr>
<td>Intermediate</td>
<td>205 °F (96 °C)</td>
<td>150 °F (65 °C)</td>
</tr>
</tbody>
</table>

Finishes: White Polyester

**Footnotes**

\(^1\) The sprinkler temperature rating is stamped on the sprinkler inlet.

\(^2\) 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.

\(^3\) Part number shown is the base part number for the replacement escutcheon. For complete part number, refer to current Viking price list schedule.
**Technological Data**

**Quick Response Recessed Flush Dry Sprinkler**

**VK482 (K5.6)**

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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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<table>
<thead>
<tr>
<th>Approval Chart</th>
<th>Temperature</th>
<th>KEY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quick Response Recessed Flush Dry Sprinkler VK482</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum 175 PSI (12 bar) WWP</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Base Part Number¹</th>
<th>SIN</th>
<th>Thread Size</th>
<th>Nominal K-Factor</th>
<th>Maximum Water Working Pressure</th>
<th>Order Length Increment</th>
<th>Listings and Approvals³</th>
</tr>
</thead>
<tbody>
<tr>
<td>18385</td>
<td>VK482</td>
<td>1&quot;</td>
<td>5.6</td>
<td>175 psi (12 bar)</td>
<td>1/4&quot;</td>
<td>UL⁴</td>
</tr>
</tbody>
</table>

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### Quick Response Applications

- **Approved Temperature Ratings**
  - A - 165 °F (74 °C) and 205 °F (96 °C)

- **Approved Finishes and “A” Dimensions⁵**
  - 1 - White Polyester with “A” dimensions 4-1/2” to 48” (114 mm to 1,219 mm)

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**Footnotes**

1. Base part number is shown. For complete part number, refer to Viking’s current price 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 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.
5. Painted finish consists of Polyester Baked Enamel. Other paint colors are available on request with the same listings as the standard paint colors. Listings and approvals apply for any paint manufacturer. Contact Viking for additional information. Custom colors are indicated on a label on the sprinkler body.

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**5. OPERATION**

During fire conditions, when the fusible element reaches its operating temperature, the element cover, fusible element and lever assembly fall away. The deflector is suspended below the ceiling. Water flowing through the sprinkler orifice strikes the deflector, forming a uniform spray pattern over a specific area of coverage determined by the water supply pressure at the sprinkler to extinguish or control the fire.

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**6. INSPECTIONS, TESTS AND MAINTENANCE**

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

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**7. AVAILABILITY**

Viking Sprinkler VK482 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.

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**8. GUARANTEE**

For details of warranty, refer to Viking’s current list price schedule or contact Viking directly.
DESIGN CRITERIA
(Also refer to the Approval Chart on page 111c.)

NOTICE When using CPVC fittings with Viking dry sprinklers, use only new Nibco Model 5012-S-Bl tees. When selecting other CPVC fittings, contact Viking Technical Services.

UL Listing Requirements:
Viking Recessed Flush Dry Sprinkler VK482 is UL Listed as indicated in the Approval Chart for installation in accordance with the latest edition of NFPA 13 for standard spray pendent sprinklers.

- Designed for use in Light and Ordinary 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.
- Locate no less than 4" (102 mm) from walls.
- 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 pages DRY1-3 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 and any other similar Authorities Having Jurisdiction, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.

**Figure 2: Adjustment Range and “A” Dimension**

1. Determine the distance from the face of the tee to the finished ceiling. Round up to the nearest 1/4" (6.35 mm) between 4-1/2" (114 mm) and 48" (1,207 mm).
   E.g., if “A” dimension is 14-1/16" (357 mm) then round up to 14-1/4" (362 mm).
   
   **NOTE:** Subtract 1/2" (12.7 mm) from the “A” dimensions for a recessed finish. Can not subtract 1/2" (12.7 mm) from the minimum “A” dimension of 4-1/2".

   - Minimum ceiling opening: 2-1/4" (57 mm) diameter.
   - Maximum ceiling opening: 2-1/2" (63.5 mm) diameter.
   - Maximum 1/2" (12.7 mm)
   - Maximum 1/4" (6.4 mm)
   - 3-5/8" (92.1 mm)

   Straight “A” Dimension Used
   “Flush Finish”

   Maximum recess of 1/2" (12.7 mm) from bottom face of Escutcheon Adapter to the bottom face of Escutcheon Cup.

   “A” Dimension with 1/2" Subtracted
   “Recessed Finish”
**Figure 3:** Recessed Flush Dry Pendent Sprinkler Required Minimum Barrel Length Based on Ambient Temperature in the Protected Area

<table>
<thead>
<tr>
<th>Ambient Temperature of Protected Area</th>
<th>Exposed Barrel Length (in.)</th>
<th>Minimum Ceiling Opening Diameter (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40°F (4°C)</td>
<td>0</td>
<td>2-1/4” (57 mm)</td>
</tr>
<tr>
<td>30°F (-1°C)</td>
<td>0</td>
<td>2-1/2” (53.3 mm)</td>
</tr>
<tr>
<td>20°F (-7°C)</td>
<td>0</td>
<td>2-1/2” (53.3 mm)</td>
</tr>
<tr>
<td>10°F (+1°C)</td>
<td>1</td>
<td>2-1/2” (53.3 mm)</td>
</tr>
<tr>
<td>0°F (-18°C)</td>
<td>2</td>
<td>2-1/2” (53.3 mm)</td>
</tr>
<tr>
<td>-10°F (-23°C)</td>
<td>3</td>
<td>2-1/2” (53.3 mm)</td>
</tr>
<tr>
<td>-20°F (-29°C)</td>
<td>4</td>
<td>2-1/2” (53.3 mm)</td>
</tr>
<tr>
<td>-30°F (-34°C)</td>
<td>5</td>
<td>2-1/2” (53.3 mm)</td>
</tr>
<tr>
<td>-40°F (-40°C)</td>
<td>6</td>
<td>2-1/2” (53.3 mm)</td>
</tr>
<tr>
<td>-50°F (-51°C)</td>
<td>7</td>
<td>2-1/2” (53.3 mm)</td>
</tr>
</tbody>
</table>

**Figure 4:** Recessed Flush Dry Sprinkler Seal

- **Seal:** Part No. 22087M/W (or equivalent method)
- **Clearance Opening**
- **Insulated Ceiling**
- **Dry Sprinkler Seal on the Exterior of the Ceiling**
- **Dry Sprinkler Seal Within the Ceiling**

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*The protected area refers to the area below the ceiling. The ambient temperature is the temperature at the discharge end of the sprinkler. For protected area temperatures that occur between the values listed, use the next cooler temperature.*

**The minimum required barrel length is not the same as the “A” dimension. Refer to Figure 2 for the “A” dimension.**

**NOTE:** Exposed minimum barrel lengths are inclusive up to 30 mph wind velocities.
Figure 5: Recessed Flush Dry Sprinkler Escutcheon Instructions

1. Push adapter up until stopped.
2. Rotate adapter clock-wise until stopped.
3. Let adapter drop until stopped.
4. Rotate outer cup until it comes into contact with the ceiling.

Figure 5: Recessed Flush Dry Sprinkler Escutcheon Instructions
NOTE: After installed, the inner escutcheon adapter must not extend beyond the outer escutcheon cup. This will result in exceeding the maximum recess distance of 1/2”.

Measure from Escutcheon Adapter/Sprinkler Base to the bottom face of Escutcheon Cup for recess measurement. Also see figure 2.

NOTE: Do not measure from Element Assembly.