



## TECHNICAL DATA SHEET

### VK852 Quick Response Cleanroom Pendent Sprinkler K5.6

#### 1. PRODUCT IDENTIFICATION

This document covers the following product, hereafter referred to as “sprinkler”:

VK852: Quick Response, Standard Coverage, Pendent, K5.6 (80.6) Sprinkler.

#### 2. INTENDED USE

The sprinkler is intended to be used in automatic fire sprinkler systems as allowed by applicable approval authorities. The unique frame design allows for installation into ceiling grid structures typically used in cleanroom environments. The sprinkler must be used in accordance with:

1. the sprinkler's Listings, Approvals, and associated design requirements.
2. the recognized design and installations standards issued. For example: NFPA, FM, EN, VdS, or LPCB.
3. the latest revisions of all applicable manufacturer's documentation.



Governmental codes, ordinances, and standards may apply and may differ from one another.

#### **WARNING**

Cancer and Reproductive Harm [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

#### 3. LISTING AND APPROVALS

Refer to section 5 for details and requirements that must be followed.





## TECHNICAL DATA SHEET

### VK852 Quick Response Cleanroom Pendent Sprinkler K5.6

#### 4. TECHNICAL SPECIFICATIONS

##### 4.1 Definitions

**Standard Pendent Sprinkler:** A sprinkler intended to be oriented with the deflector below the frame so water flows downward through the orifice, striking the deflector and forming an umbrella-shaped spray pattern downward. These sprinklers are marked “SP/RP” (Standard Pendent/Recessed Pendent). When a standard pendent sprinkler is used with a recessed escutcheon, it becomes a recessed pendent sprinkler.

**Recessed Sprinkler:** A spray sprinkler assembly intended for installation with a concealed piping system. The assembly consists of a sprinkler installed in a decorative adjustable recessed escutcheon that minimizes the protrusion of the sprinkler beyond the ceiling or wall without adversely affecting the sprinkler distribution or sensitivity. Refer to the appropriate technical data page for allowable sprinkler models, temperature ratings, and occupancy classifications.

**NOTICE: Do not recess any sprinkler not listed or approved for use with the escutcheon. Refer to Section 5.**

**Corrosion-Resistant Sprinkler:** A special service sprinkler with non-corrosive protective coatings, or that is fabricated from non-corrosive material, for use in atmospheres that would normally corrode sprinklers. Standard pendent sprinklers can be ordered as corrosion-resistant sprinklers and can be used with escutcheons when allowed by the approval body.

##### 4.2 Ratings and Physical Characteristics

| Parameter                               | Value                                             |
|-----------------------------------------|---------------------------------------------------|
| Minimum operating pressure              | 7 psi (0.5 bar)                                   |
| Maximum rated pressure                  | UL: 250 psi (17 bar); FM and CE: 175 psi (12 bar) |
| Factory tested pressure                 | 500 psi (35 bar)                                  |
| Thread size                             | 1/2" NPT                                          |
| Nominal K-factor                        | 5.6 U.S. (80.6)                                   |
| Minimum temperature rating (glass bulb) | -65 °F (-55 °C)                                   |



# TECHNICAL DATA SHEET

## VK852 Quick Response Cleanroom Pendent Sprinkler K5.6

### 4.3 Markings and Dimensions

**NOTE:** Images are representative only. Your sprinkler may vary in appearance.

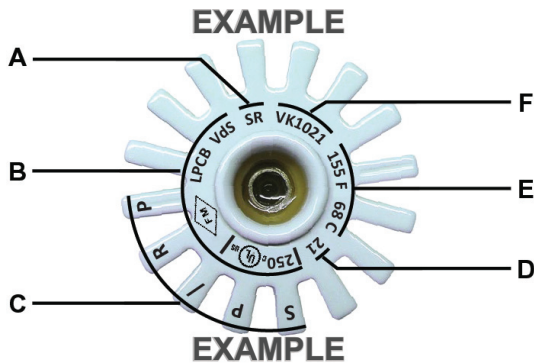


Figure – 1: Markings

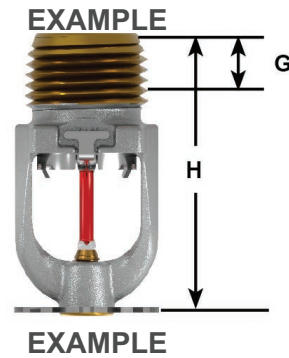


Figure – 2: Dimensions



Figure – 3: Top View

| Ref | Description                                         | Value                                    |
|-----|-----------------------------------------------------|------------------------------------------|
| A   | Response type                                       | QR: Quick Response                       |
| B   | Listings and Approvals                              | See sections 3 and 5                     |
| C   | Sprinkler type                                      | SP/RP: Standard Pendent/Recessed Pendent |
| D   | Manufacture date (year)                             | See marking                              |
| E   | Nominal temperature rating                          | See marking                              |
| F   | Manufacturers Sprinkler Identification Number (SIN) | VK852                                    |
| G   | Nominal pipe engagement                             | 7/16" (11 mm)                            |
| H   | Height                                              | 1-15/16" (49 mm)                         |
| I   | Deflector diameter                                  | 1" (25.5 mm)                             |



# TECHNICAL DATA SHEET

## VK852 Quick Response Cleanroom Pendent Sprinkler K5.6

### 4.4 Materials of Construction

**NOTICE:** Do not disassemble the sprinkler.

**NOTE:** Images are representative only. Your sprinkler may vary in appearance.

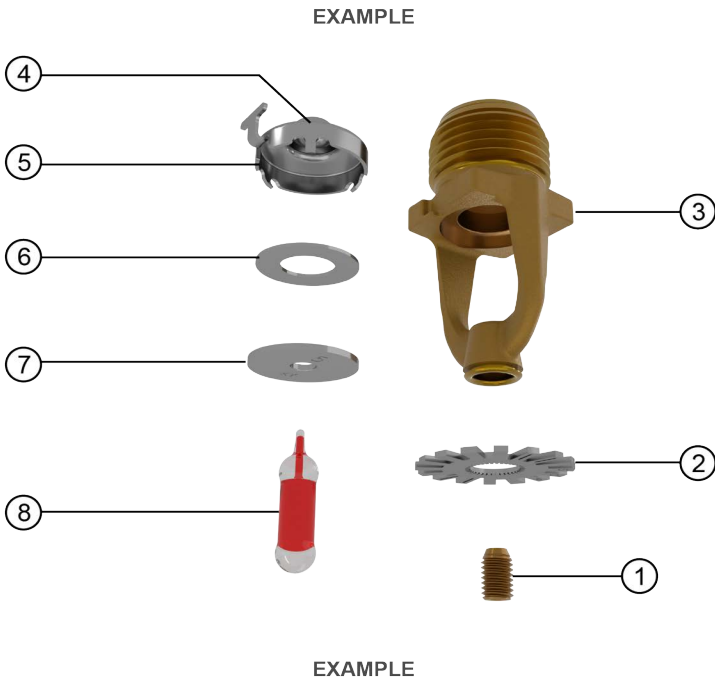


Figure – 4 Sprinkler Components

| Ref | Description       | Material                                                |
|-----|-------------------|---------------------------------------------------------|
| 1   | Compression screw | Brass UNS-C37700, UNS-C36000, UNS-C27200, or UNS-C26000 |
| 2   | Deflector         | Stainless steel UNS S30400                              |
| 3   | Sprinkler body    | CW602N                                                  |
| 4   | Pip cap seal      | Polytetrafluoroethylene (PTFE)                          |
| 5   | Pip cap shell     | Stainless steel UNS-S44400                              |
| 6   | Belleville spring | Nickel alloy                                            |
| 7   | Pip cap disc      | Stainless steel UNS-S30100                              |
| 8   | Bulb              | Glass, nominal 0.10" (3 mm) diameter                    |



# TECHNICAL DATA SHEET

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### 5. LISTING AND APPROVAL DESIGN REQUIREMENTS

#### 5.1 Listing and Approval Specifications

| Sprinkler<br>Base Part<br>Number <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                 | Thread Size |      | Approval Specifications |                 |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------|-------------------------|-----------------|--------------|
|                                                                                                                                                                                                                                                                                                                                                                                               | NPT         | BSPT | cULus                   | FM              | CE           |
| <b>Maximum WWP PSI (bar) →</b>                                                                                                                                                                                                                                                                                                                                                                |             |      | <b>250 (17)</b>         | <b>175 (12)</b> |              |
| 28605                                                                                                                                                                                                                                                                                                                                                                                         | 1/2"        | —    | A1, A2X, B3Y            | A1, B2X, B3Y    | C1, D2X, D3Y |
| <b>Approval Specification (Temperature Ratings) Key:</b><br><b>A</b> = 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C) and 286 °F (141 °C)<br><b>B</b> = 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)<br><b>C</b> = 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C)<br><b>D</b> = 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C) |             |      |                         |                 |              |
| <b>Approval Specification (Finishes) Key:</b><br><b>1</b> = Brass, white polyester <sup>2,3</sup> , black polyester <sup>2,3</sup> , and ENT <sup>3,4</sup><br><b>2</b> = Brass, white polyester <sup>2,3</sup> , and black polyester <sup>2,3</sup><br><b>3</b> = ENT <sup>3,4</sup>                                                                                                         |             |      |                         |                 |              |
| <b>Approval Specification (Escutcheons) Key:</b><br><b>X</b> = Installed with Viking recessed escutcheons models E-1, E-2, E-3 or Viking standard surface-mounted escutcheons<br><b>Y</b> = Installed with Viking recessed escutcheons models E-1 or Viking standard surface-mounted escutcheons                                                                                              |             |      |                         |                 |              |
| 1. For complete part number, refer to Viking's current price list.<br>2. For white polyester and black polyester, other colors are available upon request and will carry the same Listings and Approvals as the standard colors.<br>3. cULus Listed as corrosion-resistant.<br>4. FM Approved as corrosion-resistant.                                                                         |             |      |                         |                 |              |

#### 5.2 cULus Listing Requirements and Details

The sprinkler is cULus Listed (VNIV), as indicated in Table 5.1, for installation in accordance with the latest edition of NFPA 13 for standard spray sprinklers. This sprinkler is designed for use in light and ordinary hazard occupancies. Venting is not required.

#### 5.3 FM Approval Requirements and Details

The sprinkler is FM Approved (classes 2015, 2017, 2043) as quick response Non–Storage pendent sprinkler, as indicated in the FM Approval Guide. The sprinkler is also approved for use in FM Approved vacuum dry sprinkler systems with a maximum supervisory vacuum pressure of –3 psi (–207 mbar). 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. For specific application and installation requirements, refer to the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2–0).



## TECHNICAL DATA SHEET

### VK852 Quick Response Cleanroom Pendent Sprinkler K5.6

#### 5.4 Additional Approval Requirements and Details

Refer to Table 5.1 for approved configurations allowed by each of the following approvals.

- CE CPR: Standard EN 12259-1:1999 +A3:2006; Declaration of Performance DOP\_VK852.

For specific application and installation requirements, refer to the latest applicable governmental codes, ordinances, and standards for the installation location.

#### 5.5 Corrosion-Resistant Coatings

The corrosion-resistant coatings have passed the standard corrosion tests required by the approving agencies and are listed and approved, as indicated in Table 5.1. These tests do not represent all possible corrosive environments. The Electro-less Nickel PTFE (ENT) finish passed the UL 199 thirty-day corrosion test and is cULus Listed and FM Approved as corrosion-resistant. For automatic sprinklers, the ENT coating is applied to all exposed exterior surfaces, including the waterway.

Prior to installation, verify that the coatings are compatible with, or suitable for, the proposed environment.

**NOTE: ENT is not recommended for environments containing ferric chloride, a chemical commonly used in indoor swimming pool areas as a PH level balancer.**

#### 5.6 Sprinkler Guards and Water Shields

The sprinkler is approved for use with the Model XG Sprinkler Guard and the Model F-1 water shield. Refer to the Guards and Water Shields for XT1 Sprinklers technical data sheet for more information.

#### 5.7 Escutcheons

The sprinkler is approved for use with various styles of Viking escutcheons. Specific installation dimensions apply that must be observed. Refer to the sprinkler's Handling and Installation instructions for more information.

#### 5.8 Available Temperature Ratings

Viking sprinklers are available in several temperature ratings that relate to a specific temperature classification. Applicable installation rules mandate the use and limitations of each temperature classification. In selecting the appropriate temperature classification, the maximum expected ceiling temperature must be known. When there is doubt as to the maximum temperature at the sprinkler location, a maximum-reading thermometer should be used to determine the temperature under conditions that would show the highest readings to be expected. In addition, recognized installation rules may require a higher temperature classification, depending upon sprinkler location, occupancy classification, commodity classification, storage height, and other hazards. In all cases, the maximum expected ceiling temperature dictates the lowest allowable temperature classification. Sprinklers located immediately adjacent to a heat source may require a higher temperature rating.



# TECHNICAL DATA SHEET

## VK852 Quick Response Cleanroom Pendent Sprinkler K5.6

### 6. ORDERING PROCEDURE

#### 6.1 Sprinkler

1. Choose a sprinkler base part number with the required thread size and listing or approval (refer to section 5):
2. Add the suffix for the desired finish.
3. Add the suffix for the desired temperature rating.

**NOTE: For Polyester, insert the desired temperature rating suffix where the dash (–) is shown.**

**EXAMPLE: 28605MB/W** = VK852 with white polyester finish and 155 °F (68 °C) nominal temperature rating. This sprinkler is to be installed into an area with a maximum ambient temperature of 100 °F (38 °C).

| 1. Sprinkler Base Part Number |          | 2. Finish       |        | 3. Temperature Rating      |            |                                     |        |
|-------------------------------|----------|-----------------|--------|----------------------------|------------|-------------------------------------|--------|
| See Section 5                 |          | Description     | Suffix | Nominal Temperature Rating | Bulb Color | Maximum Ambient Ceiling Temperature | Suffix |
| 28605                         | 1/2" NPT | Brass           | A      | 135 °F (57 °C)             | Orange     | 100 °F (38 °C)                      | A      |
|                               |          | White Polyester | M–/W   | 155 °F (68 °C)             | Red        | 100 °F (38 °C)                      | B      |
|                               |          | Black Polyester | M–/B   | 175 °F (79 °C)             | Yellow     | 150 °F (65 °C)                      | D      |
|                               |          | ENT             | JN     | 200 °F (93 °C)             | Green      | 150 °F (65 °C)                      | E      |
|                               |          |                 |        | 286 °F (141 °C)            | Blue       | 225 °F (107 °C)                     | G      |
|                               |          |                 |        | OPEN                       | —          | —                                   | Z      |



## TECHNICAL DATA SHEET

### VK852 Quick Response Cleanroom Pendent Sprinkler K5.6

#### 6.2 Sprinkler Accessories



Figure – 5: Sprinkler Accessories

| Image Reference | Part Number | Description                                                       |
|-----------------|-------------|-------------------------------------------------------------------|
| 1)              | 23559MB     | Straight wrench: required for proper installation                 |
| 2)              | 23560MB     | Recessed socket wrench                                            |
| 3)              | 01724A      | Sprinkler cabinet: holds up to 6 sprinklers                       |
| 4)              | 01725A      | Sprinkler cabinet: holds up to 12 sprinklers (not shown)          |
| 5)              | 06419A      | Model E-1 Slip-on style recessed escutcheon                       |
|                 | 07902       | Model E-1 Slip-on style recessed escutcheon (stainless steel)     |
| 6)              | 11038       | Model E-2 Threaded recessed escutcheon                            |
| 7)              | 18347       | Model E-3 Threaded recessed escutcheon (large diameter outer cup) |
| 8)              | 01960A      | Large standard flat surface-mount escutcheon (steel)              |
|                 | 09488       | Large standard flat surface-mount escutcheon (stainless steel)    |
| 9)              | 02960A      | Small standard flat surface-mount escutcheon (steel)              |
|                 | 07526       | Small standard flat surface-mount escutcheon (stainless steel)    |
| 10)             | 01961B      | Large standard raised surface-mount escutcheon (brass)            |



## TECHNICAL DATA SHEET

### VK852 Quick Response Cleanroom Pendent Sprinkler K5.6

#### 7. CONTACT

The sprinkler and accessories are available through Viking distributors only. Contact your local Viking sales office which can be found on our website:

Americas and Asia: [www.vikinggroupinc.com/locations](http://www.vikinggroupinc.com/locations) OR Europe, Middle East, Africa (EMEA): [www.viking-emea.com/contact](http://www.viking-emea.com/contact)

##### **Manufacturer:**

The Viking Corporation  
5150 Beltway SE  
Caledonia, MI 49316  
Tel.: (800) 968-9501  
Fax: 269-818-1680  
Technical Services: 1-877-384-5464  
[techsvcs@vikingcorp.com](mailto:techsvcs@vikingcorp.com)

##### **Importer EU:**

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21, Z.I. Haneboesch  
L-4562 Differdange / Niederkorn  
Tel.: +352 58 37 37 – 1  
Fax: +352 58 37 36  
[vikinglux@viking-emea.com](mailto:vikinglux@viking-emea.com)

##### **Asia Pacific (APAC) Main Office:**

The Viking Corporation (Far East) Pte. Ltd.  
69 Tuas View Square  
Westlink Techpark, Singapore 637621  
Tel: (+65) 6 278 4061  
Fax: (+65) 6 278 4609  
[vikingAPAC@vikingcorp.com](mailto:vikingAPAC@vikingcorp.com)