

Model F1FR Series Quick Response Standard Spray

Model F1FR56 Sprinkler Types

Standard Upright
Standard Pendent
Conventional
Vertical Sidewall
Horizontal Sidewall

Model F1FR56 Recessed Sprinkler Types

Standard Pendent/F1/F2/FP
Horizontal Sidewall

Model F1FR56 Concealed Sprinkler Types

Standard Pendent

Model F1FR42, F1FRXLH & F1FR28 Sprinkler Types

Standard Upright
Standard Pendent

Model F1FR42, F1FRXLH & F1FR28 Recessed Sprinkler Types

Standard Pendent

Listing & Approvals

1. Underwriters Laboratories Inc. and Certified for Canada (cULus).
2. Factory Mutual Approvals (FM)
3. Loss Prevention Council (LPCB, UK)
4. VdS Schadenverhütung GmbH

UL Listing Category

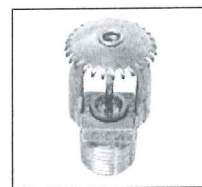
Sprinklers, Automatic & Open (VNIV)
Quick Response Sprinkler

Product Description

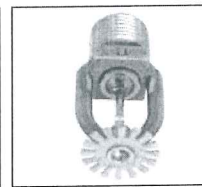
Reliable Models F1FR56, F1FR42, F1FRXLH & F1FR28 Series Sprinklers are quick response sprinklers which combine the durability of a standard sprinkler with the attractive low profile of a decorative sprinkler.

The Models F1FR56, F1FR42, F1FRXLH & F1FR28 Series Recessed automatic sprinklers utilize a 3.0 mm frangible glass bulb. These sprinklers have demonstrated response times in laboratory tests which are five to ten times faster than standard response sprinklers. This quick response enables the Model F1FR56, F1FR42, F1FRXLH & F1FR28 Series sprinklers to apply water to a fire much faster than standard sprinklers of the same temperature rating.

The glass bulb consists of an accurately controlled amount of special fluid hermetically sealed inside a precisely manufactured glass capsule. This glass bulb is specially constructed to provide fast thermal response.



Upright



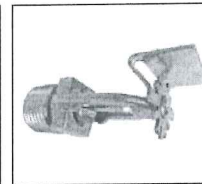
Pendent



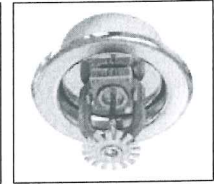
Conventional



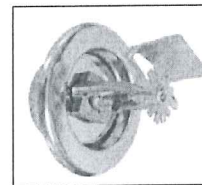
Vertical Sidewall



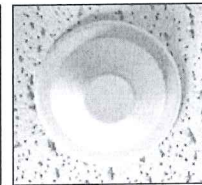
Horizontal Sidewall



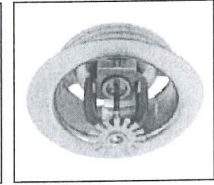
Recessed
Pendent/F1/F2



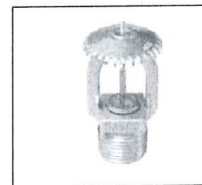
Recessed
Horizontal Sidewall



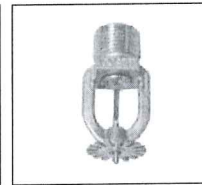
Concealed
Pendent



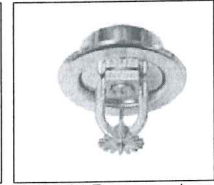
Recessed
Pendent/FP



XLH Upright



XLH Pendent



XLH Recessed
Pendent F1/F2

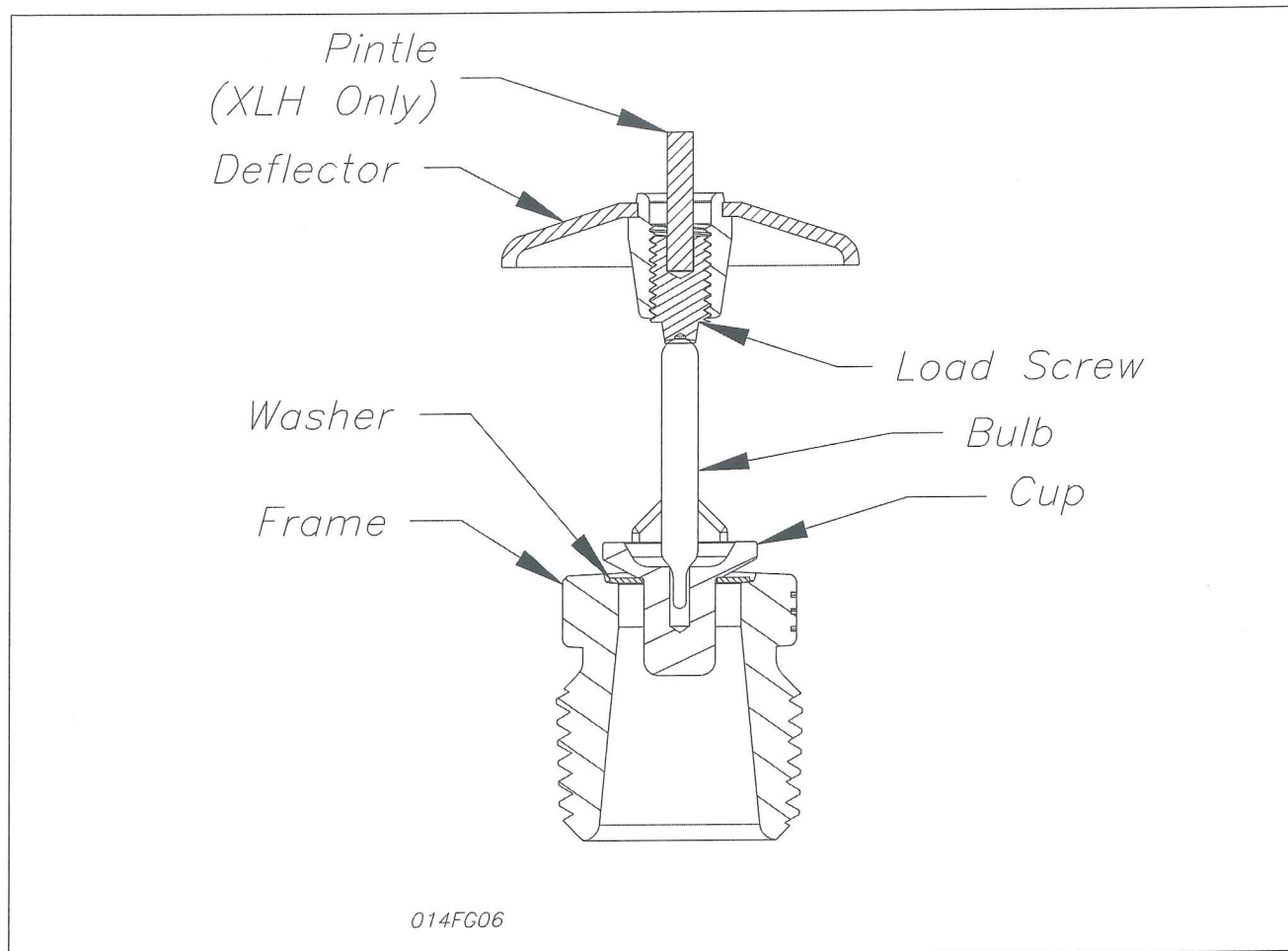


XLH Recessed
Pendent FP

At normal temperatures, the glass bulb contains the fluid in both the liquid and vapor phases. The vapor phase can be seen as a small bubble. As heat is applied, the liquid expands, forcing the bubble smaller and smaller as the liquid pressure increases. Continued heating forces the liquid to push out against the bulb, causing the glass to shatter, opening the waterway and allowing the deflector to distribute the discharging water.

Application

Quick response sprinklers are used in fixed fire protection systems: Wet, Dry, Deluge or Preaction. Care must be exercised that the orifice size, temperature rating, deflector style and sprinkler type are in accordance with the latest published standards of the National Fire Protection Association or the approving Authority Having Jurisdiction. Quick response sprinklers are intended for installation as specified in NFPA 13. Quick response sprinklers and standard response sprinklers should not be intermixed.



Model F1FR42, F1FRXLH Upright

Technical data:

| Models | Discharge Coefficient | Response | Thread Size | Max. Working Pressure | Min. Working Pressure | Temperature Rating | Finish |
|----------------|-----------------------|----------------|-----------------|-----------------------|-----------------------|----------------------------------|--------------------|
| F1FR56 | K 5.6 | Quick Response | 1/2" NPT (R1/2) | 175 PSI | 7 PSI | See "Temperature Ratings" Table. | See "Finish Table" |
| F1FR42 | K 4.2 | | | | | | |
| F1FRXLH | K 4.2 | | | | | | |
| F1FR28 | K 2.8 | | | | | | |

Material Data:

| Frame | Deflector | Load Screw | Pintle | Cup | Washer | Bulb |
|-----------------------|--|--------------------------------------|--------------------------------------|--------------------------------------|--|-------|
| DZR Brass QM Brass | CDA Alloy 260, CDA Alloy 220 or CDA Alloy 510 | CDA Alloy 360 or CDA Alloy 544 | CDA Alloy 360 or CDA Alloy 544 | CDA Alloy 651 or CDA Alloy 693 | Nickel Alloy 440 or Alloy 360 coated with PTFE Adhesive Tape | Glass |

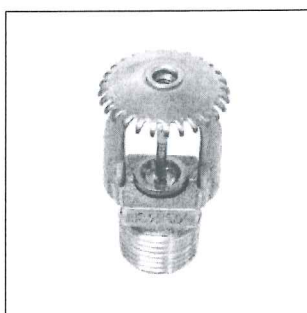
Model F1FR56, Upright, Pendent & Conventional Sprinklers
Model F1FR42, F1FRXLH & F1FR28 Upright & Pendent Sprinklers
Installation Wrench: Model D Sprinkler Wrench
Installation Data:

| Nominal Orifice | Thread | Nominal K Factor | | Sprinkler | Approval | Sprinkler Identification Number (SIN) | |
|---|-----------------|------------------|--------|--------------|--------------|---------------------------------------|-----------------------------|
| | Size | US | Metric | Height | Organization | Upright | Pendent |
| Standard-Upright (SSU) and pendent Deflectors Marked to Indicate Position | | | | | | | |
| 1/2" (15mm) ⁽¹⁾ | 1/2" NPT (R1/2) | 5.6 | 80 | 2.25" (57mm) | 1,2,3,4 | RA1425 ⁽¹⁾⁽²⁾⁽³⁾ | RA1414 ⁽¹⁾⁽²⁾⁽³⁾ |
| 7/16" (10mm) | 1/2" NPT (R1/2) | 4.2 | 60 | 2.25" (57mm) | 1 | RA1423 ⁽¹⁾ | RA1413 |
| 3/8" (10mm) | 1/2" NPT (R1/2) | 2.8 | 40 | 2.25" (57mm) | 1 | RA1421 ⁽¹⁾ | RA1411 |
| Conventional-Install in Upright or Pendent Position | | | | | | | |
| 15mm ⁽¹⁾ | 1/2" NPT (R1/2) | 5.6 | 80 | 57mm | 3, 4 | RA1475 ⁽³⁾ | |

⁽¹⁾ cULus listed corrosion resistant (Polyester coated) sprinkler.

⁽²⁾ Polyester coated FM approved sprinkler.

⁽³⁾ Polyester coated LPCB & VdS approved sprinkler RA1425, RA1414 & RA1475.



Upright



Pendent

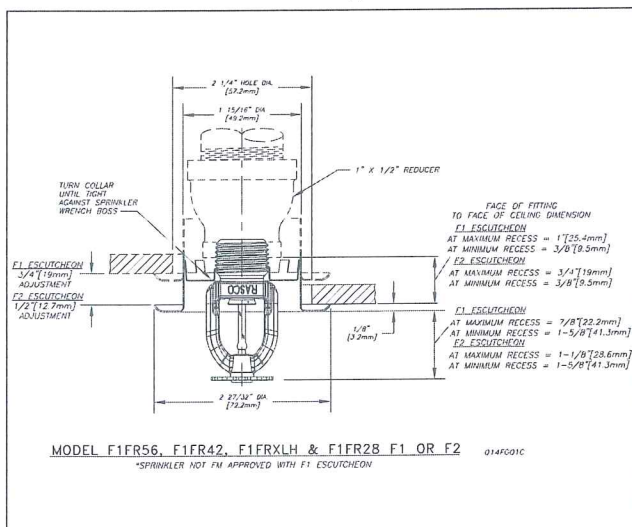


Conventional

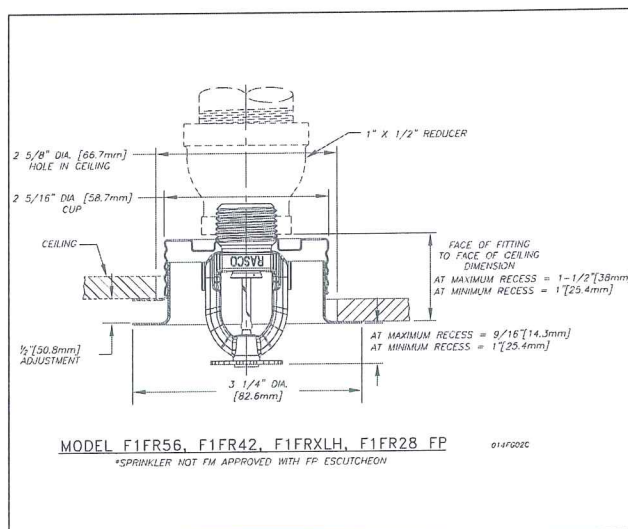
Model F1FR56, F1FR42, F1FRXLH & F1FR28 Quick Response Recessed Pendent Sprinkler⁽¹⁾
Installation Wrench: Model GFR2 Sprinkler Wrench
Installation Data:

| Nominal Orifice | Thread Size | K Factor | | Sprinkler Height | Sprinkler Identification Number (SIN) |
|-----------------|-----------------|----------|--------|------------------|---------------------------------------|
| | | US | Metric | | |
| 1/2" (15mm) | 1/2" NPT(R1/2) | 5.6 | 80 | 2.25" (57mm) | RA1414 |
| 7/16" (10mm) | 1/2" NPT (R1/2) | 4.2 | 60 | 2.25" (57mm) | RA1413 |
| 3/8" (10mm) | 1/2" NPT (R1/2) | 2.8 | 40 | 2.25" (57mm) | RA1411 |

⁽¹⁾ Refer to escutcheon data table for approvals & dimensions



Model F1FR56, F1FRXLH & F1FR28 F1 or F2



Model F1FR56, F1FRXLH & F1FR28 FP

Model F1FR56 Quick Response Vertical Sidewall Sprinkler

Installation Wrench: Model D Sprinkler Wrench

Installation Position: Upright or Pendent

Approval Type: Light Hazard Occupancy

Installation Data:

| Nominal Orifice | Thread Size | Nominal K Factor | | Sprinkler Height | Approval Organizations | Sprinkler Identification Numbers (SIN) |
|-----------------|---------------|------------------|--------|------------------|------------------------|--|
| | | US | Metric | | | |
| ½" (15mm) | ½" NPT (R1/2) | 5.6 | 8.0 | 2.25" (57mm) | 1,2,3,4 | RA1485 ⁽²⁾ |
| 15mm | ½" NPT (R1/2) | 5.6 | 8.0 | 2.25" (57mm) | 4 ⁽¹⁾ | |

⁽¹⁾ LPC Approval is for pendent position only.

⁽²⁾ cULus Listed corrosion resistant (Polyester coated) sprinkler.



Vertical Sidewall

| Sprinkler Type | Deflector to Ceiling Distance (Min. - Max.) |
|----------------|---|
| Upright | 4" (102mm) - 12" (305mm) |
| Pendent | 4" (102mm) - 12" (305mm) |

Model F1FR56 Quick Response Horizontal Sidewall Sprinkler

Deflector: HSW

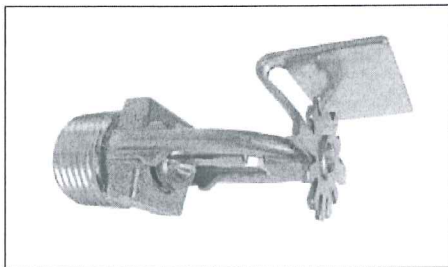
Installation Wrench: Model D Sprinkler Wrench

Installation Data: Horizontal Sidewall

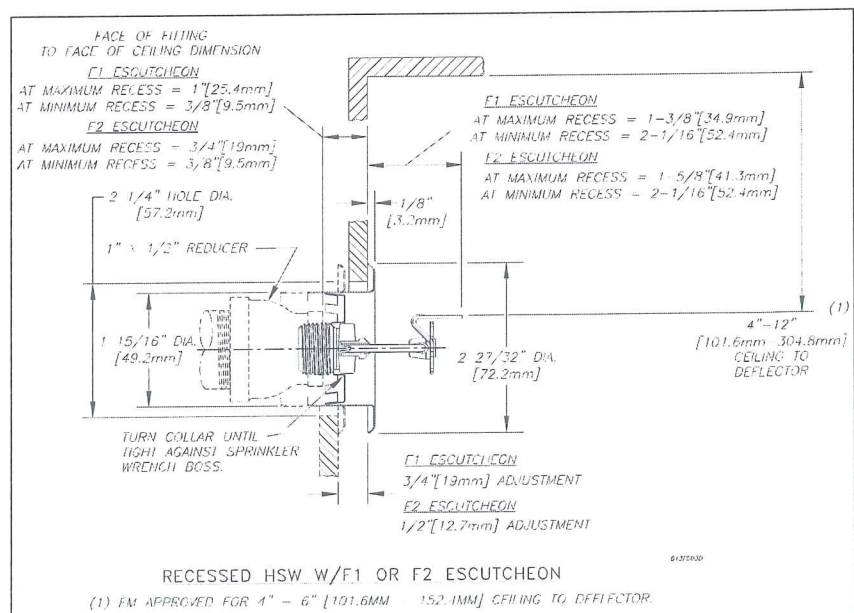
| Nominal Orifice | Thread Size | Nominal K Factor | | Sprinkler Height | Approval Organizations and Type of Approval | | Sprinkler Identification Numbers (SIN) |
|-----------------|---------------|------------------|--------|------------------|---|-----------------|--|
| | | US | Metric | | Light Hazard | Ordinary Hazard | |
| ½" (15mm) | ½" NPT (R1/2) | 5.6 | 80 | 2.63" (67mm) | 1,2 | 1 | RA1435 ⁽¹⁾⁽²⁾ |

⁽¹⁾ cULus Listed corrosion resistant (Polyester coated) sprinkler.

⁽²⁾ Polyester coated FM approved sprinkler.



Horizontal Sidewall



Note: For Recessed HSW Sprinklers use installation wrench GFR2.

Model F1FR56 Quick Response Concealed Pendent Sprinklers

Installation Wrench: Model RC1 Sprinkler Wrench

Technical Data:

| Nominal Orifice | "K" Factor | | Thread Size | Model | Temp. Rating | | Max. Ambient Temp | Bulb Color | Approvals | Sprinkler Identification Number(SIN) |
|-----------------|------------|--------|-------------|-------|--------------|------------|-------------------|------------|---------------------|--------------------------------------|
| | US | Metric | | | Sprinkler | Cover | | | | |
| 1/2" (15mm) | 5.6 | 80 | 1/2" NPT | F1FR | 135°F/57°C | 135°F/57°C | 100°F/38°C | Orange | 1 | RA1414 |
| 1/2" (15mm) | 5.6 | 80 | 1/2" NPT | F1FR | 155°F/68°C | 135°F/57°C | 100°F/38°C | Red | 1, 4 ⁽¹⁾ | RA1414 |
| 1/2" (15mm) | 5.6 | 80 | 1/2" NPT | F1FR | 175°F/79°C | 165°F/74°C | 100°F/38°C | Yellow | 1 | RA1414 |
| 1/2" (15mm) | 5.6 | 80 | 1/2" NPT | F1FR | 200°F/93°C | 165°F/74°C | 150°F/65°C | Green | 1 | RA1414 |

⁽¹⁾ For VdS only = 155°F/68°C Norbulb and 1/2" [12,7mm] adjustment.

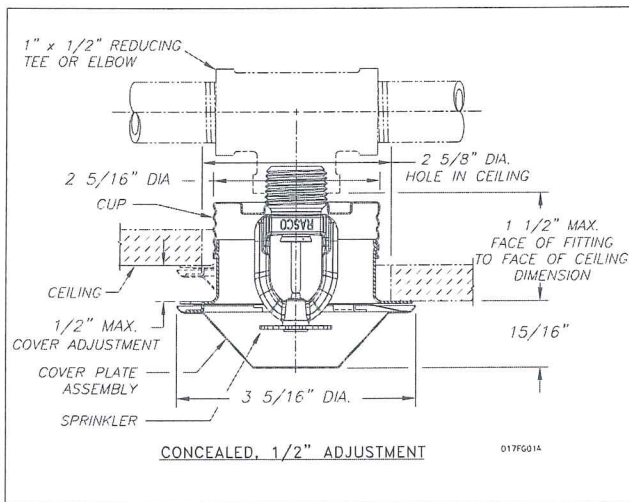


Figure 1

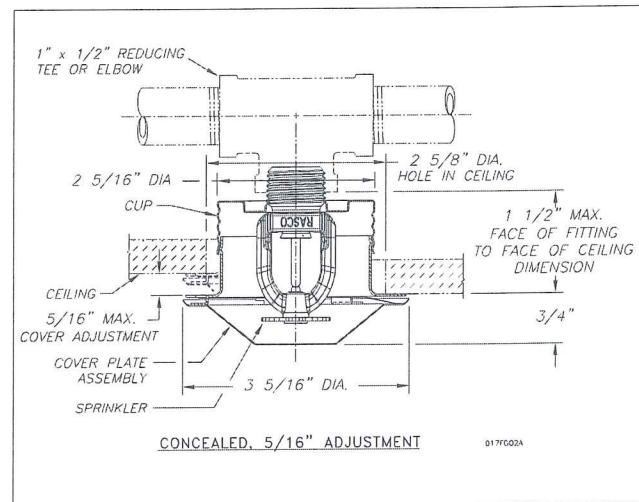


Figure 2

Installation Aid

A protective cap is included for use during installation.

Important: The F1FR56 Sprinkler with Model CCP cover plate is not an FM Approved combination.

Installation

Quick response sprinklers are intended for installation as specified in NFPA 13. Quick response sprinklers and standard response sprinklers should not be intermixed.

The Model F1FR56, F1FR42, F1FRXLH & F1FR28 Recessed Quick Response Sprinklers are to be installed as shown. The Model F1 or F2 Escutcheons illustrated are the only recessed escutcheons to be used with the Model F1FR56, F1FR42, F1FRXLH & F1FR28 Sprinklers. The use of any other recessed escutcheon will void all approvals and negate all warranties.

When installing Model F1FR56, F1FR42, F1FRXLH & F1FR28 Sprinklers, use the Model D Sprinkler Wrench. Use the Model GFR2 Wrench for installing F1FR56, F1FR42, F1FRXLH & F1FR28 Recessed Pendent Sprinklers. Any other type of wrench may damage these sprinklers.

NOTE: A leak tight 1/2" NPT (R1/2) sprinkler joint can be obtained with a torque of 8-18 ft-lbs (10,8 - 24,4 N-m). Do not tighten sprinklers over maximum recommended torque. It may cause leakage or impairment of the sprinklers.

*DuPont Registered Trade Mark

The Model F1FR56/ CCP Concealed Sprinkler uses the 1/2" orifice, 1/2" NPT (R1/2), 135°F (57°C), 155°F (68°C), 175°F (79°C) or 200°F (93°C) Model F1FR56 Pendent Sprinkler with a threaded Model CCP cup which is factory attached to the sprinkler. The assembly is completed by the installation of the attractive, low profile, 135°F (57°C) or 165°F (74°C) rated Model CCP push on cover plate assembly. The cover plate and sprinkler cup assemblies are joined using a cover plate skirt with flexible tabs for threaded engagement. A choice of two cover plate assemblies provide either 1/2" (13mm) or 5/16" (8mm) of cover adjustment.

Do not install these sprinklers in ceiling which have positive pressure in the space above.

After a 2 5/8" (67mm) diameter hole is cut in the ceiling, the sprinkler is easily installed with the Model RC1 Wrench. A Teflon* based thread sealant should be applied to the sprinkler threads only. The Model RC1 Wrench is then used to engage the sprinkler wrenching surfaces and to install the sprinkler in the fitting. When inserting or removing the wrench from the sprinkler/cup assembly, care should be taken to prevent damage to the sprinkler. **DO NOT WRENCH ON ANY OTHER PART OF THE SPRINKLER.** The cover plate is then pushed onto the cup. Final adjustment is made by hand turning the cover plate until the skirt flange makes full contact with the ceiling. Cover plate removal requires turning in the counter clockwise direction.

After installation, inspect all sprinklers to ensure that there is a gap between the cover plate and ceiling and that the four cup slots are open and free from any air flow impediment to the space above.

Concealed cover plate/cup assemblies are listed only for use with specific sprinklers. The use of any other concealed cover plate/cup assembly with the Model F1FR56 Pendent Sprinkler or the use of the Model CCP Concealed cover plate assembly on any sprinkler with which it is not specifically listed may prevent good fire protection and will void all guarantees, warranties, listings and approvals.

Glass bulb sprinklers have orange bulb protectors to minimize bulb damage during shipping, handling and installation. REMOVE THIS PROTECTION AT THE TIME THE SPRINKLER SYSTEM IS PLACED IN SERVICE FOR FIRE PROTECTION. Removal of the protectors before this time may leave the bulb vulnerable to damage. RASCO wrenches are designed to install sprinklers when covers are in place. REMOVE PROTECTORS BY UNDOING THE CLASP BY HAND. DO NOT USE TOOLS TO REMOVE THE PROTECTORS.

Temperature Ratings

| Classification | Sprinkler Temperature | | Max. Ambient Temp. | Bulb Color |
|---------------------|-----------------------|-----|--------------------|------------|
| | °C | °F | | |
| Ordinary | 57 | 135 | 100°F (38°C) | Orange |
| Ordinary | 68 | 155 | 100°F (38°C) | Red |
| Intermediate | 79 | 175 | 150°F (66°C) | Yellow |
| Intermediate | 93 | 200 | 150°F (66°C) | Green |
| High ⁽¹⁾ | 141 | 286 | 225°F (107°C) | Blue |

⁽¹⁾ Not available for recessed sprinklers.

Escutcheon Data ⁽¹⁾

⁽¹⁾ SIN RA1435 – cULus permits use with F1, F2 or FP escutcheons for "light hazard" only, while FM limits use for same hazard with F2 escutcheon only.

Maintenance

The Model F1FR56, F1FR42, F1FRXLH and Model F1FR56, F1FR42, F1FRXLH & F1FR28 Recessed Sprinklers should be inspected quarterly and the sprinkler system maintained in accordance with NFPA 25. Do not clean sprinklers with soap and water, ammonia or any other cleaning fluids. Remove dust by using a soft brush or gentle vacuuming. Remove any sprinkler which has been painted (other than factory applied) or damaged in any way. A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers. Prior to installation, sprinklers should be maintained in the original cartons and packaging to minimize the potential for damage to sprinklers that would cause improper operation or non-operation.

Sprinkler Types

Standard Upright
Standard Pendent
Conventional
Recessed Pendent
Vertical Sidewall
Horizontal Sidewall
Recessed Horizontal sidewall
Concealed pendent

Maximum Working Pressure

175 psi (12 bar)
100% Factory tested hydrostatically to 500 psi (34.5 bar)

Finishes ⁽¹⁾

| Standard Finishes | | |
|-------------------------------|---------------|----------------------------|
| Sprinkler | Escutcheon | Cover plate ⁽¹⁾ |
| Bronze | Brass | |
| Chrome Plated | Chrome | Chrome |
| Polyester | Plated | White |
| Coated ⁽⁴⁾⁽⁵⁾⁽⁶⁾ | White Painted | |
| Special Application Finishes | | |
| Sprinkler | Escutcheon | Cover plate ⁽¹⁾ |
| Bright Brass ⁽³⁾ | Bright Brass | Bright Brass |
| Black Plated | Black Plated | Satin |
| Black Paint ⁽²⁾⁽⁶⁾ | Black Paint | Off White |
| Off White ⁽²⁾⁽⁶⁾ | Off White | Black Paint |
| Satin Chrome | Satin Chrome | Black Plated |

⁽¹⁾ Other finishes and colors are available on special order. Consult the factory for details. Custom color painted sprinklers may not retain their UL Corrosion resistance listing. Coverplate custom paint is semi-gloss, unless specified otherwise.

⁽²⁾ cULus Listed only.

⁽³⁾ 200°F (93°C) maximum.

⁽⁴⁾ cULus listed "corrosion resistance" applies to SIN Numbers RA1435 (HSW), RA1485(VSW), RA1425 (Upright) and RA1414 (Pendent) in standard black or white. Corrosion resistance in other polyester colors is available upon request.

⁽⁵⁾ FM Approvals finish as "Polyester coated" applies to SIN Number RA1414 (Pendent) in standard black or white.

⁽⁶⁾ LPCB and VdS Approved finish applies only to RA1425, RA1414 and RA1475.

Ordering Information

Specify:

1. Sprinkler Model
2. Sprinkler Type
3. Orifice Size
4. Deflector Type
5. Temperature Rating
6. Sprinkler Finish
7. Escutcheon Type
8. Escutcheon Finish (where applicable)
9. Cover plate Model
10. Cover plate Thread size
11. Cover plate Temperature
12. Cover plate Adjustment
13. Cover plate Finish

Note: When Model F1FR56 Recessed sprinklers are ordered, the sprinklers and escutcheons are packaged separately.

The equipment presented in this bulletin is to be installed in accordance with the latest published Standards of the National Fire Protection Association, Factory Mutual Research Corporation, or other similar organizations and also with the provisions of governmental codes or ordinances whenever applicable. Products manufactured and distributed by Reliable have been protecting life and property for over 90 years, and are installed and serviced by the most highly qualified and reputable sprinkler contractors located throughout the United States, Canada and foreign countries.

Manufactured by



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