



Model M336 ESFR Pendent Sprinklers

175 psi (12 bar) rated

Features

- FM Approved as a quick-response storage sprinkler
- Robust fusible link operating element

Product Description

The Reliable Model M336 is an Early Suppression Fast Response (ESFR) fire sprinkler with a nominal K-factor of 33.6 (480 metric). The sprinkler uses a levered fusible alloy solder link in either a 165°F (74°C) or a 212°F (100°C) temperature rating. These sprinklers are designed to respond quickly to growing fires and will deliver a heavy water discharge to suppress a fire. Suppression is considered a higher level of control characterized by a sharp reduction in heat release rate along with preventing regrowth of the fire.

FM Approvals classifies the Model M336 as a quick-response storage sprinkler when used in accordance with FM Property Loss Prevention Data Sheets. Sprinkler has successfully completed the test program with 4 ft (1.2m) aisles.

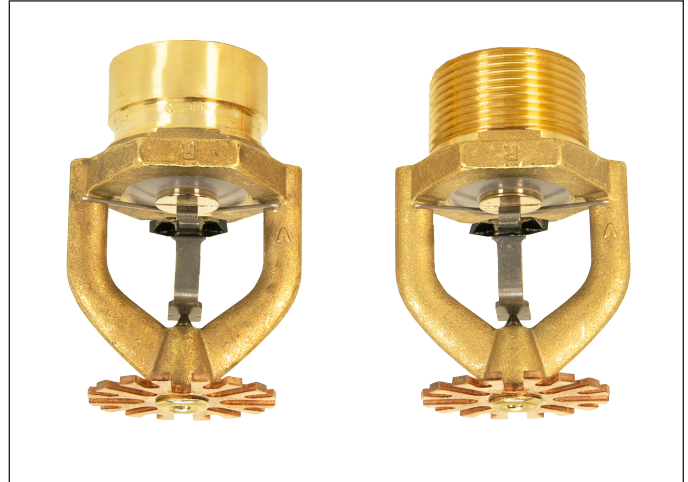
Installation

Model M336 sprinklers are intended for installation in accordance with FM Loss Prevention Data Sheets 2-0 and 8-9, as well as the requirements of any Authorities Having Jurisdiction.

Caution: When handling sprinklers, hold sprinklers only by the frame arms and do not apply any force on the link assembly.

For grooved sprinklers, align the sprinkler frame arms and the pads of the coupling, to prevent inadvertent contact with the operating element during coupling installation. Install the coupling in accordance with the manufacturer's installation instructions. Failure to follow these installation instructions may results in leaks or inadvertent operation of sprinklers.

Important! Reliable fire sprinklers must be handled, stored, and installed in accordance with the guidelines in Caution Sheet 310 and this bulletin. Failure to follow these instructions may result in unintended operation or nonoperation of the fire protection system.



Model M336 ESFR Sprinkler

For threaded sprinklers only, use the Model W17 sprinkler wrench (see Figure 3) for removal and installation. Any other type of wrench may damage the sprinkler. After applying a thread sealant to the male sprinkler threads, Model M336 sprinklers should be tightened between 35-45 lb-ft (47-61 N·m) torque. Exceeding the maximum recommended torque may cause leakage or impairment of the sprinkler. Damaged sprinklers must be replaced immediately.

Failure to follow these installation instructions may results in leaks, inadvertent operation, or non-operation of sprinklers.

Model M336 ESFR Pendent Sprinkler

Table A

Model	Nominal K-factor gpm/psi ^{1/2} (L/min/bar ^{1/2})	Approvals	Sprinkler Identification Number (SIN)
M336	33.6 (480)	FM, CE	R610

Technical Specifications**Style:** Pendent**Connection:**

Threaded: 1-1/4" NPT

Threaded: ISO7-1R1-1/4 (BSPT)

Grooved: 1-1/4" Groove - AWWA-C606

Nominal K-Factor: 33.6 (480 metric)**Max. Working Pressure:** 175 psi (12 bar)**Material Specifications****Thermal Sensor:** Nickel Alloy Solder Link**Sprinkler Frame:** Brass Alloy**Cap:** Bronze Alloy**Sealing Assembly:** Nickel Alloy with PTFE**Load Screw:** Bronze Alloy**Deflector:** Bronze Alloy**Kick Spring:** Nickel Alloy**Sprinkler Finishes**

Bronze

Sensitivity

Quick-Response

Temperature Ratings

Ordinary: 165°F (74°C)

Intermediate: 212°F (100°C)

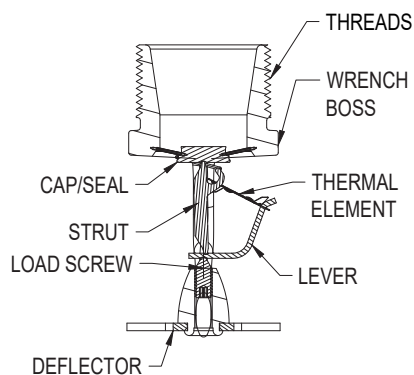
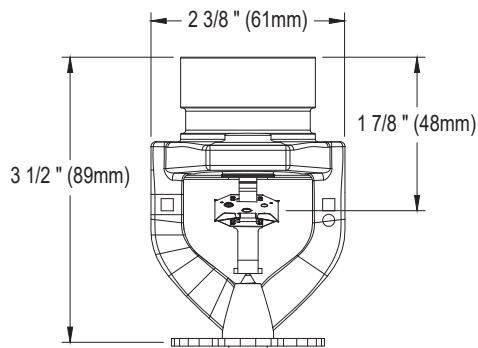
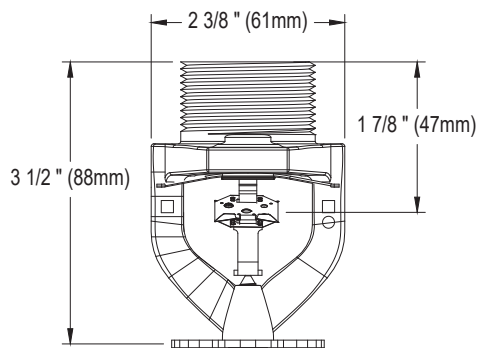
Sprinkler Wrench

Model W17

Listings and Approvals

FM Approved

CE Certified

**Model M336 Sprinkler Dimensions and Components****Figure 1**

Model M336 Commodity Selection and Installation Criteria Overview
Table B

Storage Arrangement	Commodity	Max. Storage Height, ft (m)	Max. Ceiling Height, ft (m)	Ceiling Sprinkler K-Factor (metric)	Max. Vertical Distance from Ceiling to Sprinkler's Thermal Element, in. (mm)	Min. Aisle Width, When Protecting Racks ft (m) ⁽²⁾	Sprinkler System Design		
							Ceiling Sprinkler System, No. of AS @ psi (bar)	Hose Demand, gpm (L/min)	System Duration, min
Solid-Piled, Palletized, Bin-Box, Shelf, and Open-Frame Racks	Class 1, 2, 3, 4 and Cartoned Unexpanded Plastics	45 (13.7)	50 (15.2)	33.6 (480)	17 (425)	6 (1.8)	9 @ 55 (3.8)	250 (950)	60
						4 (1.2) ⁽¹⁾	9 @ 55 (3.8) ⁽¹⁾		
		50 (15.2)	55 (16.8)	33.6 (480)	17 (425)	6 (1.8)	9 @ 55 (3.8)		
						4 (1.2) ⁽¹⁾	10 @ 55 (3.8) ⁽¹⁾		

Note:

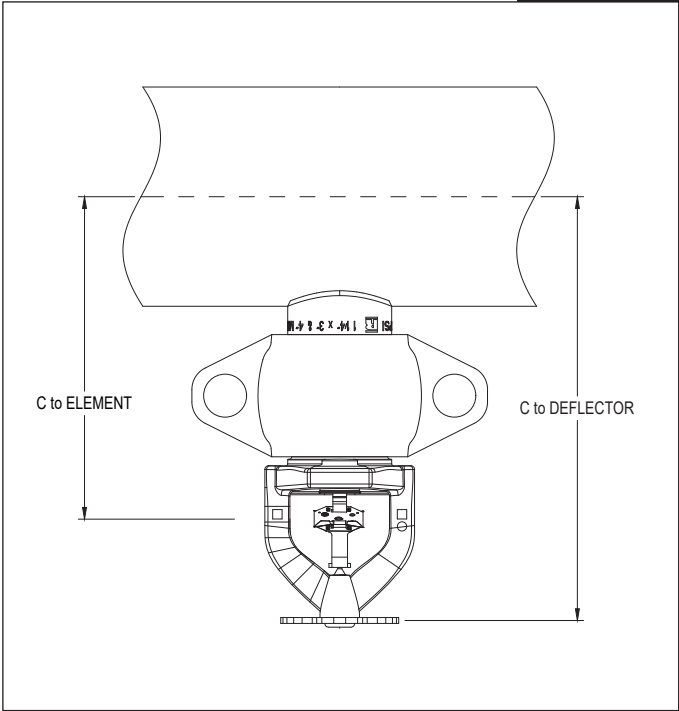
- Design criteria based on the results of large-scale fire tests at FM with the Reliable Model M336 sprinkler.
- Adequate flue spaces must be provided in accordance with the options set forth in FM 8-9. If no longitudinal flues are present in a multiple-row rack configuration, a minimum 8 ft (2.4 m) aisle is required separating racks.

Model M336 Commodity Selection and Installation Criteria Overview
Table C

Storage Type	FM
Sprinkler Type	Storage
Response Type	Quick Response
System Type	Wet
Temperature Rating °F (°C)	165 °F (74 °C), 212 °F (100 °C)
Roof Construction	See FM 2-0
Ceiling Slope	See FM 2-0
Maximum Coverage Area	See FM 2-0
Minimum Coverage Area	See FM 2-0
Maximum Spacing	See FM 2-0
Minimum Spacing	See FM 2-0
Minimum Clearance to Commodity	See FM 2-0
Sprinkler Distance to Ceiling	See FM 2-0
Open Frame, Single, Double, Multiple Row, or Portable Rack Storage of Class I-IV, and Group A Plastics	See FM 2-0 & 8-9
Solid Pile or Palletized Storage of Class I - IV and Group A Plastics	See FM 2-0 & 8-9
Idle Pallet Storage	See FM 2-0, 8-9 & 8-24
Rubber Tire Storage	See FM 2-0 & 8-3
Rolled Paper Storage	See FM 8-21
Flammable Liquid Storage	See FM 7-29
Aerosol Storage	See FM 7-31
Auto Components in Portable Racks	See FM 2-0 and 8-9

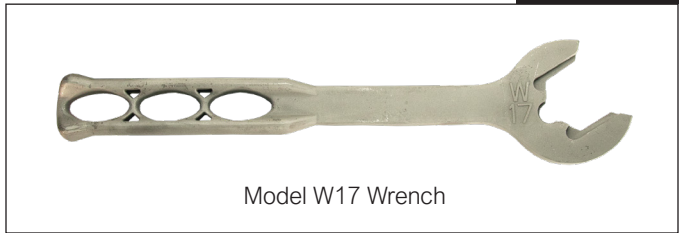
**Model M336 with Model 114
Welded Outlet Fitting**

Figure 2



Wrenches

Figure 3



Maintenance

Reliable Model M336 sprinklers should be inspected and the sprinkler system maintained in accordance with NFPA 25, as well as the requirements of any Authorities Having Jurisdiction.

Prior to installation, sprinklers should remain in the original cartons and packaging until used. This will minimize the potential for damage to sprinklers that could cause improper operation or non-operation.

Do not clean sprinklers with soap and water, ammonia liquid or any other cleaning fluids. Remove dust by gentle vacuuming without touching the sprinkler. Replace any sprinkler which has been painted (other than factory applied).

Once operated, automatic sprinklers cannot be reassembled and/or reused. A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers.

Failure to properly maintain sprinklers may result in inadvertent operation or non-operation during a fire event.

Table D

Nominal Pipe Size in (mm)	PIPE OD in (mm)	C to ELEMENT in (mm)	C to DEFLECTOR in (mm)
2" (50mm)	2.375" (60mm)	4-3/4" (121mm)	6-3/8" (162mm)
2-1/2" (65mm)	2.875" (73mm)	5 " (127mm)	6-5/8" (168mm)
3" (76mm)	3.5" (89mm)	5-1/4" (133mm)	6-7/8" (175mm)
4" (100mm)	4.5" (114mm)	5-3/4" (146mm)	7-3/8" (187mm)

Guarantee

For the Reliable Automatic Sprinkler Co., Inc. guarantee, terms, and conditions, visit www.reliablesprinkler.com.

Ordering Information

Specify:

Sprinkler

- M336

Temperature Rating

- 165°F (74°C)
- 212°F (100°C)

End Connection

- 1-1/4" NPT
- ISO7-1R1-1/4 (BSPT)
- 1-1/4" Groove - AWWA-C606