

Reliable®

Model N25 (SIN RA0912) K25.2 (360 metric) Early Suppression Fast Response Sprinkler

Product Description

The Reliable Model N25 Early Suppression Fast Response Sprinkler (ESFR/Quick Response Storage Sprinkler) is intended for use against severe fire challenges. This sprinkler is designed to respond quickly to growing fires and deliver a heavy water discharge to “suppress” rather than “control.”

The Model N25 ESFR sprinkler utilizes a levered fusible alloy solder link in either a 165°F (74°C) or a 212°F (100°C) rating. FM Global considers this a “Quick Response” storage sprinkler for use per FM Data Sheet 8-9.

The sprinkler has a Nominal K Factor of 25.2 (metric 360).

The smaller deflector and frame provide a broad, very symmetrical, hemispherical pattern capable of suppressing fires between sprinklers in high storage height areas and at the same time retaining a high momentum central core to penetrate and suppress fires occurring directly beneath the sprinkler in low storage height areas.

The N25 ESFR sprinkler is also less susceptible to damage due to smaller deflector and frame design. The lighter N25 ESFR passed rough use and abuse test in the labs without plastic protectors.

Application and Installation

The Model N25 is an ESFR sprinkler is intended for installation in accordance with NFPA 13 and as a QR Storage Sprinkler for use in all FM Loss Prevention Data Sheets as well as approval of the Authority Having Jurisdiction.



Model N25 ESFR Sprinkler

Design Criteria

General guidelines:

Orientation: Pendent, deflector should be parallel with the ceiling or roof.

System Type: Wet Pipe Systems Only

Maximum area of coverage: 100 ft² (9.3m²), greater coverage area are allowable in some cases.

Minimum area of coverage: 64 ft² (5.8m²)

Maximum slope ceiling: 2/12 pitch (9.5°)

Maximum spacing: 12 ft (3.7m) for building heights up to 30 ft (9.1m) and 10 feet (3.1m) for building heights greater than 30 ft (9.1m)

Minimum spacing: 8 feet (2.4m)

Deflector distance from walls: At least 4 inches (102mm) from walls, and no more than one-half the allowable distance permitted between sprinklers.

Deflector to Top of Storage: at least 36 in (914mm).

Deflector to ceiling Distance: 6 - 18 in (152 - 457mm).

Center Line of Thermal Sensing

Element To Ceiling Distance: 4 - 17 in (101.6 - 425mm).

Listings and Approvals

1. FM Approved as a quick response storage sprinkler.
2. CNBOP-PIB Technical Approval.

Technical Data:

| Classification | Sprinkler Temperature | | Link Color | Frame Color | Maximum Ceiling Temperature | | Sprinkler Identification Number (SIN) |
|--------------------------|-----------------------|-----------|----------------|--------------------|-----------------------------|----------|---------------------------------------|
| | °F | °C | | | °F | °C | |
| Ordinary Intermediate | 165 212 | 74 100 | Black White | Uncolored White | 100 150 | 38 66 | RA0912 |

Material Data:

| Frame | Deflector | Load Screw | Lever | Strut | Link Assembly | Cap | Washer | Kick Spring |
|-------|-----------|-----------------|-----------------|-----------------|----------------------------|-------|------------------|-----------------|
| Brass | Bronze | Stainless Steel | Stainless Steel | Stainless Steel | Beryllium Nickel, Soldered | Brass | Beryllium Nickel | Stainless Steel |

Installation Data

| Sprinkler Type | Thread Size | "K" Factor | | Maximum Working Pressure | Finish |
|----------------|-------------|------------|---------|--------------------------|--------|
| | | US | Met-ric | | |
| Pendent Only | 1" NPT (R1) | 25.2 | 360 | 175 psi (12,1 bar) | Bronze |

Maintenance

The Model N25 ESFR Sprinkler should be inspected and the sprinkler system maintained in accordance with NFPA 25. Do not clean sprinkler with soap and water, ammonia or any other cleaning fluid. Remove any sprinkler that 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 until used, to minimize the potential for damage to sprinklers that would cause improper operation or non-operation.

Once operated, automatic sprinklers cannot be reassembled and reused. New sprinklers of the same size, type and temperature rating must be installed. A cabinet of replacement sprinklers should be provided for this purpose.



Fig. 3 - Model N1 Wrench

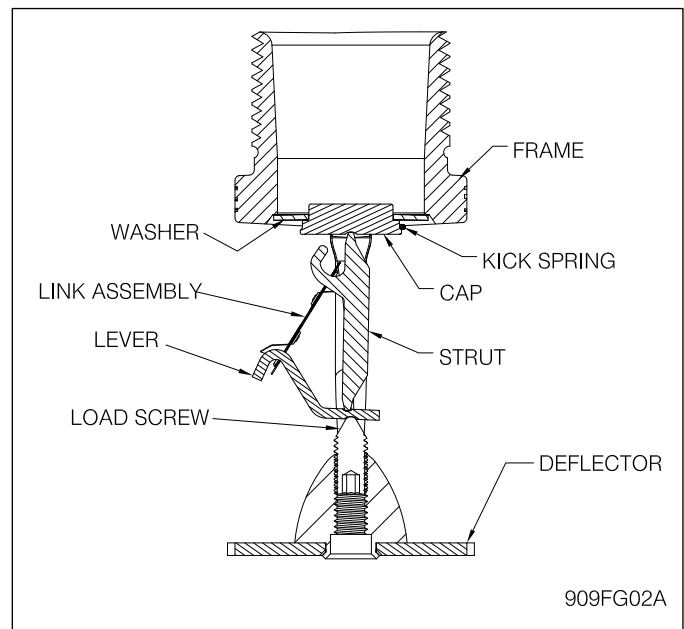


Fig. 1

Model N25 ESFR Sprinkler Specification

Sprinklers shall be Early Suppression Fast Response (ESFR) pendent suppression mode sprinklers specifically tested and [FM Approved] for commodity storage applications. Sprinkler frame and deflector to be of bronze construction. Fusible link assembly shall utilize the strut and lever principle of operation with approved fast response black-painted or white-painted beryllium-nickel thermal element. Water seal shall consist of a Teflon-coated Bellville spring washer and brass cap assembly containing no plastic parts. ESFR sprinklers shall have a nominal K-factor of 25.2 with 1" NPT threaded end connections. Sprinkler temperature rating shall be [Ordinary 165°F (74°C)] [Intermediate 212°F (100°C)].

Model N25 Technical Data

Table A

| ITEM | DESCRIPTION |
|---------------------------------------|------------------|
| Sprinkler Identification Number (SIN) | RA0912 |
| K Factor us (Metric) | 25.2 (360) |
| Thread Size | 1" (R1) |
| Sprinkler Orientation | Pendent |
| Maximum Working Pressure, PSI (bar) | 175 PSI (12 bar) |

Use only the Model N1 sprinkler wrench for removal and installation. Any other type of wrench may damage the sprinkler.

Note: When handling sprinklers, hold sprinklers only on frame arms and do not apply any force on the link assembly. Sprinklers should be tightened between 22 - 30 ft-lbs (29.8 - 40.7 Nm) torque. Sprinklers not tightened to recommended torque may cause leakage or impairment of the sprinkler. Damage sprinklers must be replaced immediately.

Ordering Information

Specify:

1. Temperature rating
2. Thread type 1" NPT or ISO 7-R1

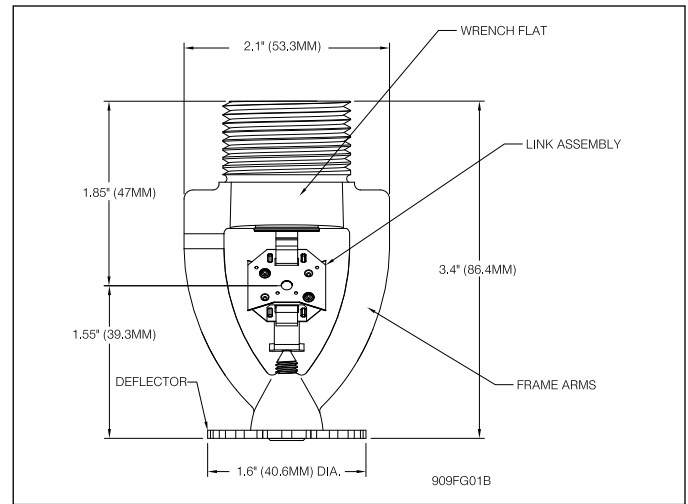


Fig. 2

Model N25 Commodity Selection and Design Criteria Overview

Table B

| Storage Type | NFPA | FM GLOBAL |
|---|--------------------|-------------------------|
| Sprinkler Type | ESFR | Storage |
| Response Type | ESFR | QR |
| System Type | Wet | Wet |
| Temperature Rating F (C) | 165, 212 (74, 100) | 165, 212 (74, 100) |
| Roof Construction | See NFPA 13 | See FM Global 2-0 |
| Ceiling Slope | See NFPA 13 | See FM Global 2-0 |
| Maximum Coverage Area | See NFPA 13 | See FM Global 2-0 |
| Minimum Coverage Area | See NFPA 13 | See FM Global 2-0 |
| Maximum Spacing | See NFPA 13 | See FM Global 2-0 |
| Minimum Spacing | See NFPA 13 | See FM Global 2-0 |
| Minimum Clearance to Commodity | See NFPA 13 | See FM Global 2-0 |
| Sprinkler Distance to Ceiling | See NFPA 13 | See FM Global 2-0 |
| Open Frame, Single, Double, Multiple Row, or Portable Rack Storage of Class I - IV, Cartoned Unexp Plastics | See NFPA 13 | See FM 2-0 and 8-9 |
| Solid Pile or Palletized Storage of Class I - IV and Cartoned Unexp Plastics | See NFPA 13 | See FM 2-0 and 8-9 |
| Idle Pallet Storage | See NFPA 13 | See FM 2-0,8-9 and 8-24 |
| Rubber Tire Storage | See NFPA 13 | See FM 2-0 and 8-3 |
| Rolled Paper Storage | See NFPA 13 | See FM 8-21 |
| Flammable Liquid Storage | See NFPA 30 | See FM 7-29 |
| Aerosol Storage | See NFPA 30B | See FM 7-31 |
| Auto Components in Portable Racks | N/A | N/A |

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 almost 100 years.

Manufactured by



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Revision lines indicate updated or new data.