

# Model A-1

## Dry Pendant

Flush, Recessed, & Extended Automatic Sprinkler

Manufactured by: Central Sprinkler Company  
451 North Cannon Avenue, Lansdale, Pennsylvania 19446

### Product Description

The Model A-1 Dry Pendant Sprinklers are designed for use in special applications such as freezing environments or in conditions where sediment or foreign material might accumulate in ordinary drop nipples.

The Model A-1 is Listed by FM for use as a standard sprinkler in accordance with FM Loss Prevention Data Sheets and current NFPA 13 Standards. The spacing, deflector distances and associated installation criteria shall be in accordance with these standards.

**Operation:** A fusible alloy is sealed into a bronze center strut by a stainless steel ball. When the alloy melts at its rated temperature, the ball is forced down, releasing the strut and allowing the seat of the sprinkler to fall away. This action causes a guide tube contained within the barrel of the dry sidewall to reposition itself, releasing ball bearings holding the cap (plunger) in place at the other end of the dry sidewall barrel. The cap (plunger) is then discharged from the barrel assembly, out the open sprinkler, followed by discharge of water.

### Technical Data

- Model:** A-1
- Style:** Flush, Recessed, or Extended
- Wrench:** Apply a pipe wrench to the upper brass thread connector only.
- Orifice Size:** 1/2" (12.7 mm)
- Maximum Length:** 36" (914.4 mm)
- K-Factor:** 5.6 (80.8 metric) Nominal
- Maximum Working Pressure:** 175 psi (12.1 bar)
- Factory Hydro Test:** 100% at 500 psi (34.5 bar)



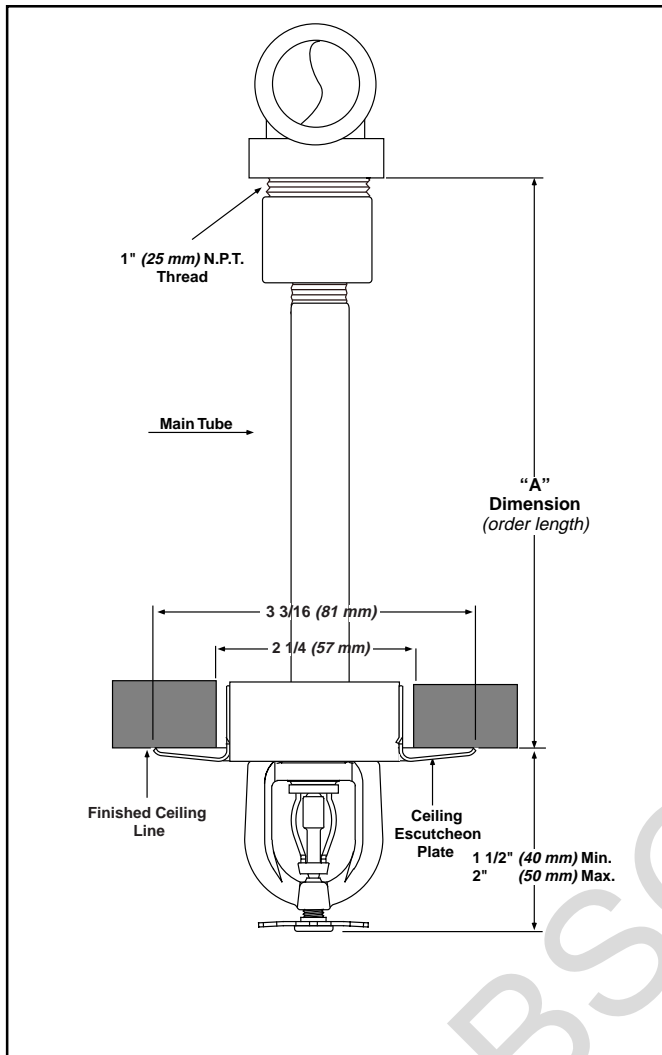
1/2" (12.7 mm)  
Orifice  
Non-Adjustable  
Dry Pendant  
Automatic  
Sprinkler

### Approvals

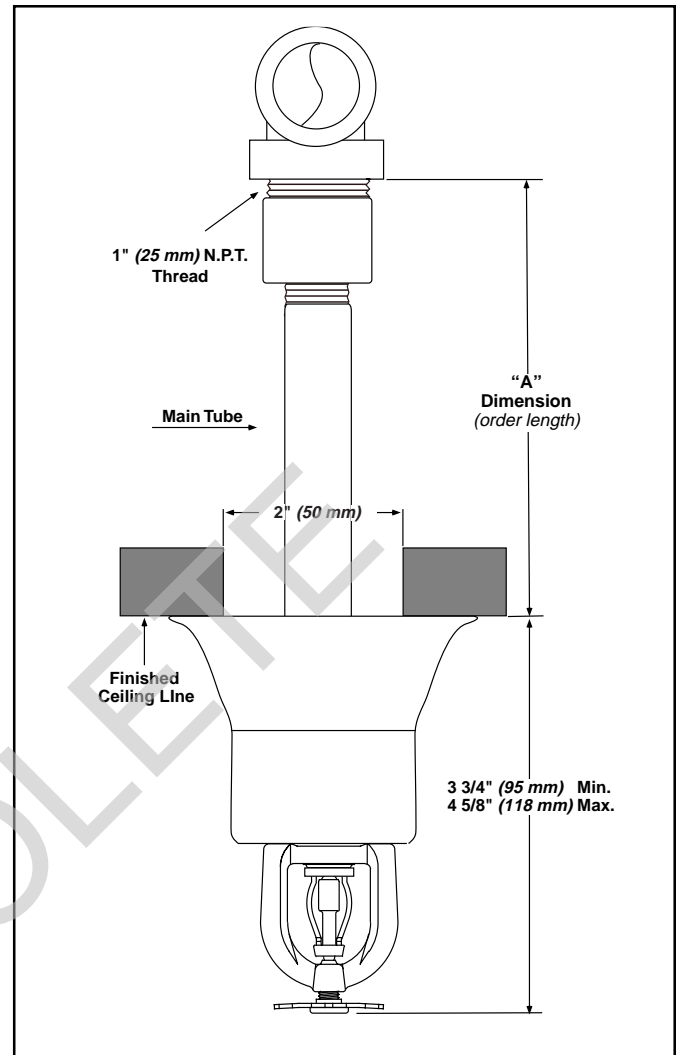
| Style                      | Temperature Rating                       | Standard Finishes         | Approvals * | Thread Size "NPT" |
|----------------------------|--|---------------------------|-------------|-------------------|
| A-1<br>Flush &<br>Extended | 165°F/74°C<br>212°F/100°C<br>286°F/141°C | Brass or<br>Chrome Plated | FM          | 1"<br>(25 mm)     |
| A-1<br>Recessed<br>Pendent | 165°F/74°C<br>212°F/100°C                | Brass or<br>Chrome Plated | FM          | 1"<br>(25 mm)     |

\* The Central A-1 Flush & Extended Dry Pendant Sprinklers are Factory Mutual Approved for use in Light Hazard and Ordinary Hazard Occupancies. Central A-1 Recessed Dry Pendant Sprinklers are Factory Mutual Approved for use in Light Hazard only. The FM Approvals for Ordinary Hazard Occupancies is limited to wet pipe sprinkler systems and preaction systems qualifying as wet pipe systems.

**Figure 1 Model A-1**  
**Non-Adjustable Dry Pendant**  
*Flush, Recessed*



**Figure 2 Model A-1**  
**Non-Adjustable Dry Pendant**  
*Extended*



**Ordering Length for Dry Pendant Heads**

Flush — The “A” dimension is measured from the face of the tee to the finished ceiling. This is only approximately flush. Order to the nearest ¼" (6.4 mm). **Minimum “A” dimension is 2½" (63.5 mm).**

Recessed — The “A” dimension is measured from the face of the tee to the finished ceiling. **Minimum “A” dimension is 3" (76.2 mm). Adjustment is ±¼" (6.35 mm).**

Extended — The “A” dimension is measured from the face of the tee to the finished ceiling. Order to the nearest ¼" (6.4 mm). **Minimum “A” dimension is 0". Adjustment is ±7/16" (11.1 mm).**

**Caution: See step one of installation sequence for appropriate fitting requirements.**



# Design Data

## Design Requirements—Standard Applications

The Model A-1 Flush, Recessed, and Extended Dry Pendent Sprinklers are intended for standard area coverages and standard flow and pressure requirements as specified in current NFPA Standards.



# Installation

All Model A-1 Dry Pendent Automatic Sprinklers must be installed according to current NFPA 13 Standards.

Dry Pendent sprinklers are designed to prevent water from accumulating in the drops to sprinklers. To accomplish this, they have a fitting that protrudes into the branch line with a cap (plunger) assembly. This prevents the possibility of water freezing in the drop to the pendent sprinkler, creating an ice plug. Dry Sprinklers should be installed in a tee. (See Step 1)

Deviations from these requirements and standards or any alteration to the sprinkler itself will void any warranty made by Central Sprinkler Company. In addition, installation must also meet local government provisions, codes and standards as applicable.

Check for the proper model, style, orifice size, and temperature rating prior to installation. Install sprinklers after the piping is in place to avoid mechanical damage; replace any damaged units. Wet pipe systems must be protected from freezing.

Upon completion of the installation, the system must be tested per recognized standards.

In the event of a thread leak, remove the unit, apply new pipe joint compound or tape, and reinstall.

## Installation Sequence

**Step 1. The unit should be installed into a 1 inch NPT threaded tee fitting conforming to ANSI B16.3 for malleable iron and ANSI B16.4 for cast iron threaded fittings. Do not install into any other type fitting without consulting the Technical Services department. Use of an improper fitting can result in the failure of the dry sprinkler to operate due to binding of the plug or leakage caused by insufficient engagement of the threads into the fitting. In scenarios with dry systems subject to freezing conditions, the use of an improper fitting can result in the formation of an ice plug on top of the dry pendent plug if the plug does not extend sufficiently into the fitting.**

**Step 2.** Use only a non-hardening pipe joint compound or Teflon\* tape. Apply only to the male threads.

**Step 3.** Hand tighten the sprinkler into the fitting. The Model A-1 Dry Pendent is installed by using a pipe wrench at the upper brass thread connector of the dry pendent. Use the appropriate Wrench to tighten the unit in the fitting. A leak tight joint requires only 7 to 14 ft. lbs. (9.5 to 19.0 Nm) of torque; a tangential force of 14 to 28 lbs. (62.3 to 124.5 N) delivered through a 6" handle will deliver adequate torque. Torque levels over 40 ft. lbs. (54.4 Nm) may twist the head in the main tube, damaging the seal.

**Step 4.** To install the escutcheon plate, align it with and push it over the sprinkler body and into the upper

support piece until the outer edge of the escutcheon meets the mounting surface.

Do not over- or under-tighten the sprinkler to compensate for inaccurate escutcheon plate adjustment.

**Caution:** Special care must be taken when installing with a CPVC system. Sprinklers must be installed after the manufacturer's recommended setting time for the primer and cement to ensure that neither accumulate within the sprinkler.

Special care must be taken when installing with a copper system. Sprinklers must be installed only after the inside of the sprinkler drop and associated fittings have been wire brushed to remove any flux. Residual flux can cause corrosion and in extreme cases can impair proper sprinkler operation.



# Care & Maintenance

Sprinklers must be handled carefully. They must not be transported or stored where ambient temperature may exceed 100°F/38°C. For best results, store them in a dry, cool location in the original shipping package.

Do not install sprinklers that have been dropped or visibly damaged. Sprinklers should never be painted, coated, plated or altered in any other way from manufactured condition or they may not function properly. Any sprinklers altered in such a manner must be replaced.

The owner is responsible for the proper operating condition of all fire protection devices and accessories. The NFPA standard 25 entitled, "Inspection, Testing and Maintenance of Water-Based Fire Protection Systems", contains guidelines and minimum maintenance requirements. Furthermore, the local Authority Having Jurisdiction may have additional regulations and requirements for maintenance, testing, and inspection that must be obeyed.

It is advisable to have sprinkler systems inspected regularly by a qualified inspection service. Length

\*Teflon is a trademark of the DuPont Corp.

of time between such inspections can vary due to accessibility, ambient atmosphere, water supply, and site activity.

Do not attempt to re-assemble or otherwise reuse a sprinkler that has operated. Replace any sprinkler exhibiting corrosion or damage; always use new sprinklers of the same orifice, style, and temperature rating as replacements.

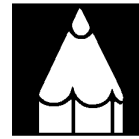
Because the discharge pattern is critical to protection of life and property, nothing should be hung or attached to the sprinkler unit that would disrupt the pattern. Such obstructions must be removed. In the event that construction has altered the original configuration, additional sprinklers should be installed to maintain the protection level.

Do not attempt to replace sprinklers without first removing the fire protection system from service. Be certain to secure permission from all *Authorities Having Jurisdiction*, and notify all personnel who may be affected during system shutdown. A fire watch during maintenance periods is a recommended precaution.

To remove the system from service, first refer to the system operating guide and valve instruction. Drain water and relieve pressure in the pipes. Remove the existing unit and install the replacement, using only the recommended sprinkler wrench. Be certain to match model, style, orifice, and temperature rating.

A fire protection system that has been shut off after an activation should be repaired and returned to service immediately. Inspect the entire system for damage and replace or repair as necessary. Sprinklers that did not operate but were subjected to corrosive elements of combustion or excessive temperatures should be inspected, and replaced if need be. The *Authority Having Jurisdiction* will detail minimum replacement requirements and regulations.

**Guarantee:** Central Sprinkler Company will repair and/or replace any products found to be defective in material or workmanship within a period of one year from the date of shipment. Please refer to the current Price List for further details of the warranty.



## Ordering Information

**Ordering Information:** When placing an order, indicate the full product name. Please specify the quantity, model, style, orifice size, temperature rating, sprinkler finish, and escutcheon finish, and required "A" Dimension.

See page 2 for "A" Dimension information.

**Availability and Service:** Central sprinklers, valves, accessories and other products are available throughout the U.S. and Canada, and internationally, through a network of Central Sprinkler distribution centers. You may write directly to Central Sprinkler Company, or call (215) 362-0700 for the distributor nearest you.

**Patents:** Patents are pending.

**Conversion Table:**

1 inch = 25.400 mm  
1 foot = 0.3048 m  
1 pound = 0.4536 kg  
1 foot pound = 1.36 Nm  
1 psi = 6.895 kpa  
= 0.0689 bar  
= 0.0703 kg/cm<sup>2</sup>  
1 U.S. gallon = 3.785 dm<sup>3</sup>  
= 3.785 liters  
Conversions are approximate.



**Central Sprinkler Company**

451 North Cannon Avenue, Lansdale, PA 19446  
PHONE (215) 362-0700  
FAX (215) 362-5385