

Linear Heat Detection (LHD) Application Bulletin

RACK STORAGE DETECTION

Rack Storage

The following sections detail using ThermoCable™ in a variety of rack storage systems including open rack with and without sprinkler protection and refrigerated storage. When installing ThermoCable™ in a rack system with or without a sprinkler system, FM guidelines must be followed along with the manufactures recommendations.

Open Rack Storage without Sprinklers

When installing the ThermoCable™ in open rack system without a sprinkler system, the number of detection wire runs is based on the height of the rack. As a general rule, there should be one detection wire run for every 10 feet of rack height. The detection wire should be attached to the load beam and run in the transverse flue space.

- For example, an 18' rack should be given two wire runs while a 40' rack system should have four wire runs.

For more details, please refer to NFPA 72 section **XXXX** regarding these, and similar types of installations.

Open Rack Storage with Sprinkler Protection

In the case of signal or double row racks, one line of ThermoCable™ is needed for each sprinkler level. The detection wire should be attached to the load beam at the sprinkler level and run in the transverse flue space. For multiple row racks, each sprinkler line would require a corresponding run of detection wire.

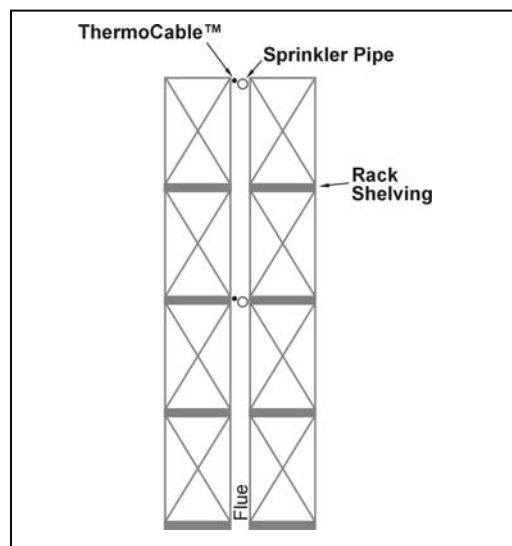


Figure 1 - Open Rack Storage

Pre-Action and Deluge Sprinkler Systems

When using ThermoCable™ as an initiating device for pre-action sprinkler systems, attention should be paid to the spacing and location guidelines provided by Factory Mutual (FM).

Generally, FM acceptance requires that linear heat detection wire be installed at spacing not greater than that allowable for a ceiling sprinkler system. The detection wire should be run parallel to each sprinkler branch line to the end of the line than run at a right angle to the next sprinkler line coming back in the opposite direction and continued until the end of the detection zone. Insure that any right angle bend in the detector wire maintains at least a 3" radius. A ThermoCable™ wire run (zone) can utilize up to 10,000 feet (3,048 meters) of detection cable. If the sprinkler zone requires more than 10,000 feet of detection wire, an additional detection zone will be required.

Zone Definitions

It is important to note that a detection zone allocation for ThermoCable™ should not be confused with a zone allocation for a sprinkler system. If a sprinkler zone extends beyond the capabilities of a signal detection zone then an additional detection zone must be added. In this case, either detection zone will operate the same solenoid valve for the sprinkler zone. Detection zone coverage should not extend beyond the coverage of the sprinkler zone

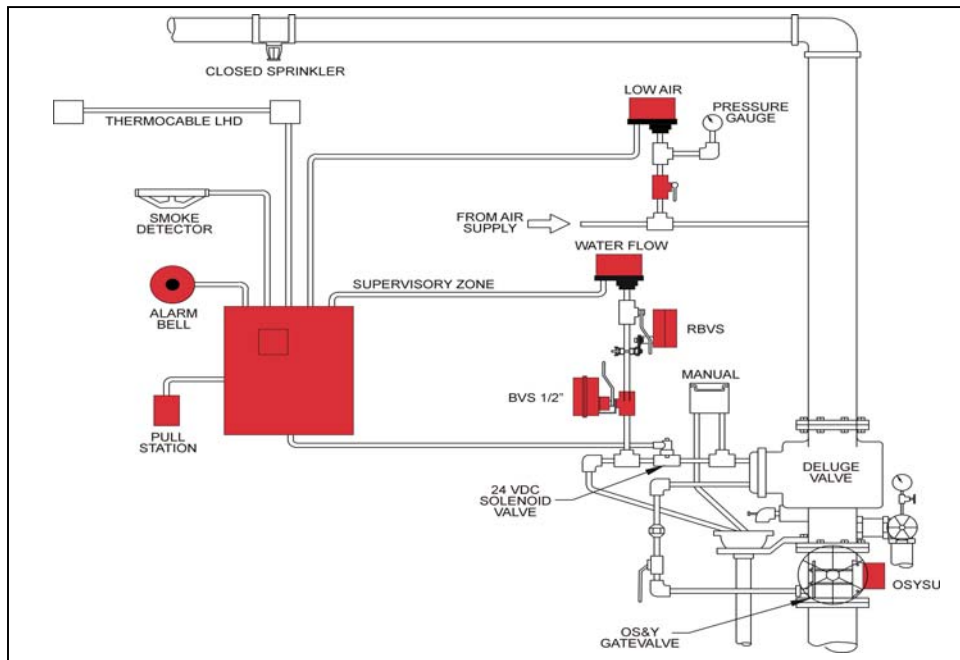


Figure 2 - Pre-Action/Deluge Valve System

These notes are to be used as general guidelines for installing ThermoCable™ linear heat detection (LHD) wire. Please be sure to check all local and state codes prior to designing and installing a system. It is advisable to contact the local AHJ in the planning stages of a project.

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