

Linear Heat Detection in Refrigerated Storage Areas

SPECIAL HAZARD APPLICATION

The Detector

Freezer and cold storage facilities present unique fire protection challenges. The cold, extremely dry environment compounded with the various combustibles including food products and packing materials are commonly ignited during lighting, refrigeration, and/or other equipment failures. Further, false activation of pre-action sprinkler systems can result in substantial downtime and financial loss. The Protectowire CTI Series provides the only fixed temperature digital linear heat detector that offers short circuit discrimination and the most dependable and cost-effective fire detection option for refrigerated storage applications. Unlike conventional digital linear heat detectors, damage to the CTI Series Linear Heat Detector typically will not result in false alarms. The patented CTI Series detector design incorporates thermocouple technology to confirm temperature at the location of the fault reducing false alarms. This proprietary feature assures that only heat activated shorts reports as alarm conditions. This reduces the possibility of false discharges in double interlocked pre-action sprinkler systems typically employed in freezers. The harsh environments of cold storage warehouse demand a robust detector with low moisture absorption and excellent performance at extremely low temperatures. The CTI-135-XLT is specifically designed to meet these demands and has the lowest activation temperature for digital linear heat detectors at 135°F (57°C) currently available in the market.

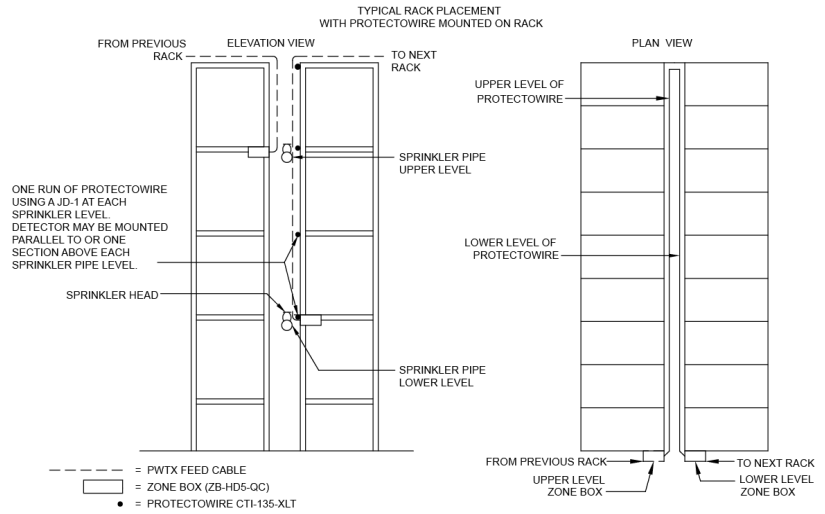
Protectowire CTI/CTM Series Features:

- CTI-135-XLT is FM approved and UL listed to -60°F (-51°C) and specifically designed for the harsh environment of refrigerated storage applications.
- The CTI-135-XLT Detector meets the FM Loss Prevention Data Sheet 8-29 guidelines for Refrigerated Storage Facilities.
- Mechanical damage to the CTI Series Linear Heat Detector will only cause a short fault.
- The CTM-530(E) is listed to -20°F (-29°C) and the CTM-230 (E) is listed to -40°F (-40°C).
- The CTM Interface modules are a 4-wire device compatible with most control panels and/or addressable modules.
- The status and location of the short fault or heat event is displayed on the CTM-530(E) Module's LCD screen and can be communicated via 4-20mA outputs.
- Modbus via RS-485 output provides module status (standby, fault, short fault, and alarm), alarm point location, and temperature at the point of alarm or short fault.
- The CTM-530 LCD will actively display the location in feet (or meters) and temperature in Fahrenheit (or Celsius) of any short fault or alarm condition.



The CTM Modules

The Protectowire CTM Series detection modules provide an interface between a host fire alarm control panel IDC, or addressable node, and Protectowire CTI Series Linear Heat Detectors. The CTM-230 and CTM-530 modules contain one (1) field selectable Class A (NFPA Style D) or Class B (NFPA style B) detection circuit capable of monitoring up to a total of 4000 feet (1220 meters) of CTI detector and Type T thermocouple extension grade feed cable. Also included are alarm, fault, and short fault Form C relay contacts for connection to any listed or approved host fire detection monitoring system. The CTM-530 has the enhanced features of an LCD graphical display, navigation keypad, 4-20ma outputs respectively for status, and alarm point location, history log (64 entry, FIFO), as well as Modbus over RS-485. The Modbus-485 output provides the CTM Module status, temperature, and alarm/short fault location. Please see the CTM-230 and CTM-530 Manuals for additional information.



Installation Guidelines

The detectors must be installed in continuous runs without taps or branches in accordance with applicable sections of NFPA 70 National Electrical Code, NFPA 72 National Fire Alarm Code, or as determined by the local authority having jurisdiction. It is recommended that Protectowire CTI-135-XLT Detector be installed at every level of the sprinkler piping. For single row and double row racks, one line of detection cable is needed at each in-rack sprinkler level. Locate the linear heat detector cable in the transverse or longitudinal flue space and attach it to a horizontal load beam at the sprinkler line level. For multiple-row racks, a line of detection cable is needed for each in-rack sprinkler line at each level. With numerous types of rack systems in use today, the linear heat detector configuration layout may vary based on the type of racking system at each facility. Protectowire should not be installed on sprinkler piping for in-rack systems due to incidents of mechanical damage from fork lift trucks or falling pallets and cartons. We suggest adhering to the guidelines from Factory Mutual (FM) Loss Prevention Data Sheet 8-29 for Refrigerated Storage Facilities and consult the authority having jurisdiction for any local requirements.

To ensure a trouble-free installation, only Protectowire supplied or recommended fasteners should be used. Our supplied fasteners are generally designed to lightly clamp the detector which enables tension to be applied progressively. The use of non recommended fasteners may physically damage the detector and in some cases may void the detector's warranty. The JD-1 Stainless Steel Mounting Clip is typically well suited for the freezer and cold storage installations. This clip may be used for ceiling, pipe, or wall mount applications, as well as all corners. It is designed specifically to support our detectors and allows the detectors to slide in easily during installation and slide out for any future repairs. The clips can be mounted in advance of running the cables, for ease and speed of installation.

Protectowire CTI-135-XLT Series Linear Heat Detector is a component of a family of fire detection systems manufactured by Protectowire FireSystems.

