

Protectowire PLR-500-XCR Line Heat Detector



Description

Protectowire Linear Heat Detector, PLR-500-XCR, is a proprietary device that detects heat anywhere along its length. The detector is comprised of two metallic conductors individually insulated with a heat sensitive polymer. The insulated conductors are twisted together to impose a spring pressure between them, then wrapped with a protective tape and finished with an ultra-high performance fluoropolymer outer jacket suitable for very harsh environments.

The Detector is a fixed temperature digital sensor and is therefore capable of initiating an alarm once its rated activation temperature is reached. At the rated temperature, the heat sensitive polymer insulation yields to the pressure upon it, permitting the inner conductors to move into contact with each other thereby initiating an alarm signal. This action takes place at the any heated point along the detector's length. It does not require that a specific length be heated in order to initiate an alarm nor is system calibration necessary to compensate for changes in the installed ambient temperature. Protectowire Linear Heat Detectors provide the advantages of continuous line coverage with point sensitivity.

Features

- Compatible with all conventional and addressable Fire Alarm/Releasing Control Panels.
- Line coverage...continuous sensitivity.
- 500°F (260°C) alarm temperature rating.
- Withstands severe environmental conditions.
- Compatible with other initiation devices on same circuit.
- UL Listed for up to 50 ft. (15.2m) spacing.

General

The detector's ultra-high temperature setting allows for installation in high ambient. PLR-500-XCR is constructed with low resistance inner conductors. Utilizing a high-performance fluoropolymer outer jacket, this detector is specifically designed for use in applications where extreme environment and product criteria must be met. The flame retardant, low smoke jacket provides excellent abrasion resistance and mechanical properties over a broad range of applications. It provides excellent chemical and permeation resistance to a wide range of acids, bases, and organic solvents, as well as simple gases. In addition, the jacket exhibits very little change in tensile properties upon outdoor exposure to sunlight and weather.

Applications

- Switchgear
- Transformers
- Industrial Ovens
- Marine Vessels
- Kitchen Hoods
- Motors
- Earth Moving Equipment
- Agriculture Equipment
- Drying or Kilning Applications

PROTECTOWIRE PLR-XCR
PLR-500-XCR – ALARM TEMP. 500°F (260°C)

Ambient Temp. Max. 392°F (200°C) – Min. -40°F (-40°C)

Ideally suited to industrial high temperature and high-risk hazards. The Protectowire PLR-500-XCR Series Linear Heat Detector has unique advantages over other types of detectors, especially when difficult installation factors or severe environmental conditions are present.

Features & Benefits

- Universal in application. May be used on any addressable or conventional panel.
- Sensitivity not affected by changes in ambient temperature or length of cable used on the detection circuit. Compensating adjustments are not required.
- Rugged metallic, low resistance inner conductors and ultra high performance outer jacket, provide resistance to mechanical damage.
- Simple to install and splice with common tools.
- Compatible with other types of alarm initiating devices on the same circuit such as manual pull stations, thermal heat detectors and smoke detectors.
- Custom lengths available.
- Available on stainless steel messenger wire for installations where mounting is difficult such as large open areas.
- Ideally suited for activation of extinguishment equipment, such as deluge or pre-action sprinkler systems.
- Total zone length replacement unnecessary after alarm.

Installation

Protectowire Linear Heat Detector is approved as a heat actuated automatic fire detector and is intended to be used on a supervised initiating circuit of an approved fire protective signaling control unit. The Detector 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."

The listed spacing shall be used as a guide or starting point in detector installation layout. Reduced spacing is required based upon factors such as ceiling height and construction, physical obstructions, air movement, or the authority having jurisdiction.

Installation Accessories

Protectowire PLR-500-XCR has an ultra-high ambient temperature rating. This ultra-high rating requires mounting and installation accessories that are equally or higher rated. Typically, the PLR-500-XCR detector uses metal junction boxes and mounting accessories. Standard (PVC, Nylon, or Polypropylene) clips, straps, beam clamps, cable glands, connectors and junction boxes are often insufficiently rated to survive the ultra-high ambient temperature.

NOTE: High temperature zone boxes, terminal blocks, and cable glands recommended.

Messenger wire is also available for PLR-500-XCR. It consists of high tensile strength stainless steel wire, which is wound around the detector at the rate of approximately one turn per foot. It is a carrier or support wire which is designed to simplify the installation of the Detector in areas where mounting is difficult due to the lack of appropriate support structures or mounting surfaces. When ordering messenger wire configurations, add suffix "-M" to the Protectowire model number.

PLR-500-XCR Temperature Rating and Listed Spacing

Product Type	Model Number	Alarm Temperature	Max. Ambient Temperature	FM Approvals Listed Spacing	UL/cUL Approvals Listed Spacing
PLR-500-XCR High Performance/ Industrial Applications Excellent Abrasion & Chemical Resistance	PLR-500-XCR	500 °F (260 °C)	Up to 392 °F (200 °C)	Proximity Detection Only	50 ft. / 15.2m

Specifications

Maximum Voltage Rating:	30 VAC, 42 VDC
Resistance (per twisted pair):	.058 ohms/ft. (.191 ohms/m)
Min. Bend Radius:	2.5 inches (6.4cm)
Diameter:	Nominal 5/32 inch (4mm)
Weight:	Nominal 8 lbs./500ft. (3.6 kg/152m)