Protectowire Linear Heat Detector
Important Installation Information. Please Read!

1. GENERAL

1.1 Protectowire Linear Heat Detector may be installed at the ceiling level to protect areas within buildings (area protection) in the same fashion as the more familiar spot type heat detectors. Please refer to the National Fire Alarm Code, NFPA 72, for basic information on the installation and spacing of linear heat detectors for area protection.

1.2 For special applications where the Detector is installed close to the hazard, the manufacturer's recommendations and/or installation instructions should be followed. Whenever there is a choice between two or more possible installation procedures, the one which results in increased protection should be utilized.

2. TEMPERATURE RATINGS AND MODEL NUMBERS

Alarm Temperature	Regular 155°F (68.3 °C)	Intermediate 190°F (87.8 °C)	High 280°F (137.8 °C)	Extra High 356°F (180 °C)
Max. Installed Ambient Temp.	Up to 100°F (37.8C)	Up to 150°F (65.6C)	Up to 200°F (93.3C)	Up to 221°F (105C) EPR To 250 ° F (121C)
Multipurpose / Industrial	PHSC-155-EPC	PHSC-190-EPC	PHSC-280-EPC	*PHSC-356-EPC
Abrasion / Limited Chemical Resistance	PHSC-155-EPR	PHSC-190-EPR PHSC-190-EPN	PHSC-280-EPR	*PHSC-356-EPR *FM Approved Special Applications Only.

MODEL NO. PHSC-6893-TRI Dual Temperature Detector (TRI-Wire™)

Max. Installed Ambient Temp. = 100 F (37.8C); Low Temp. Pre-alarm = 155F (68.3C); High Temp. Alarm = 200F (93.3C)

| **Maintain Proper Continuity**. Conductor Color Code: Pink = 155 °F; White/Clear = 200 °F; Black = Common.

|3. APPROVALS/MAXIMUM LISTED SPACING

Type EPC	Type EPN	Type EPR	Type TRI
UL (25 ft/7.6m)	UL (25 ft./7.6m)	UL (25 ft./7.6m)	-------
FM (25 ft./7.6m)	FM (25 ft./7.6m)	FM (25 ft./7.6m)	FM (15 ft./4.6m)

The distance between detector runs shall not exceed the listed spacing. Reduced spacing may be required based upon factors such as ceiling height and construction, physical obstructions, air movement, or the authority having jurisdiction (AHJ). When Protectowire is used for sprinkler system activation, special Factory Mutual (FM) reduced spacing guidelines may also be applicable.

4. ELECTRICAL ARRANGEMENT

4.1 Protectowire is a listed, heat-actuated automatic fire detector and is intended to be used on a supervised initiating circuit of an approved fire protective signaling control unit.

4.2 Copper wire, of an approved type, with a minimum conductor size of 18 AWG, shall be installed from the control panel out to the hazard area where it is connected to the beginning of the Protectowire portion of the circuit. Each end of the Protectowire portion of every initiating circuit shall terminate in an approved zone box, end-of-line zone box, or other junction box provided as part of the system. Strain relief connectors, Model SR-502, shall be installed in all junction boxes where Protectowire enters or exits the enclosure, in order to hold the cable securely and reduce dust and moisture entry into the box. All zone box enclosures shall be rated and approved for use in the environment in which they will be installed.

4.3 All electrical connections made within each zone box between Protectowire and the circuit's interconnecting copper wiring or end-of-line device, shall be made via terminals. The Protectowire Co., supplies zone boxes, identified by the letters QC, which contain a compression type terminal which allows for the direct connection of Protectowire conductors to the terminals. In all other cases, PFL Flexible Leads, as furnished by The Protectowire Co., must be used to connect the Detector to terminals. The use of wire nuts or other similar wiring devices not specifically approved by The Protectowire Co., shall be considered an improper installation technique and a misapplication of the product.

See Additional Information on Reverse Side

5. Storage and Shipping

5.1 This wire is sensitive to heat and must be stored in areas where the temperature will not exceed the maximum ambient temperature rating of the sensor.

5.2 It must not be installed in contact with or in proximity to steam pipes, electric lamps, heaters, or any heat-producing equipment or environment that exceeds its maximum ambient installation temperature.

5.3 Each coil of Protectowire is individually tested for operational integrity prior to shipment from the factory. Because Protectowire is a heat activated device, it is possible that if proper precautions are not taken to avoid high ambient temperatures during shipment or while in storage prior to installation, the wire could be activated (shorted) while still in the box. It is recommended, therefore, that each coil of wire be inspected as to type and temperature, and then tested for shorts between conductors before installation begins.

6. Installation Warnings

This detector is not fragile, but crushing or pinching will injure it. The results of such injury may not appear at once and may not be obvious by the outward appearance of the wire, but damage to the outer jacket or unnecessary mechanical stress applied to the wire during installation may cause "false alarms" later on. Therefore-

- **DO NOT** leave it on the floor and walk on it or set ladders on it during installation.
- **DO NOT** install it with commercial fasteners unless specially approved by The Protectowire Co.
- **DO NOT** place it where it will be subject to mechanical damage by equipment processes.
- **DO NOT** overtighten the fasteners as this may breach the outer jacket or crush the inner insulation, causing "false alarms." All fasteners must allow the wire to expand and contract with temperature changes. Do not over stretch the Protectowire runs, some wire "sag" between fasteners is normal.
- **DO NOT MAKE 90 DEGREE BENDS**.
- **DO NOT** hold the wire with pliers to make bends. All bends should be made with the fingers and consist of rounded turns with a minimum 2 1/2 inch radius.
- **DO NOT USE WIRE NUTS**. All connections must be made via terminals and/or approved splicing devices. The use of PFL Flexible Leads is recommended for all Protectowire to terminal connections (except in QC type zone boxes).
- **DO NOT PAINT THIS DETECTOR**, per UL and FM requirements.

7. Outdoor Applications

7.1 Exposure to direct sunlight may cause the temperature of the detector or its mounting surface to exceed the maximum ambient limit or the alarm actuation temperature of the sensor. For this reason, outdoor use of 155 degree (Regular) wire is not recommended. Shielding Intermediate or higher rated detectors may be required, in order to reduce the installed location temperature to acceptable limits.

7.2 Applications with high humidity or dampness, require the use of SFTS Sealant Tape for all in-line splices where PWSC or PWS splicing devices are used. For outdoor applications, the recommended method of splicing requires that all connections be made within appropriate NEMA rated junction boxes.

8. Installation Hints

8.1 Whenever possible, corners should be rounded by pulling the detector into a natural curve rather than bending it. This both reduces installation time and improves the finished appearance. It also creates a spring tension at the corners which helps hold the detector in place. On flat mounting surfaces, such as ceilings, WAW Corner Clips should be used at all corners (turns) except for installations using drive rings, or messenger wire.

8.2 The spring steel of the conductors gives the detector a tendency to straighten out when taken from the coil. This is a great help towards getting straight lines for a neat job. The same steel, however, will take a "set" and try to retain curves or bends if pulled too hard around a corner. The rule, therefore, is "handle gently." Do not pull kinks into it that could damage the inner insulation.

8.3 The use of a good portable wire reel (Protectowire Model SU-15 or equivalent), is a great time saver and highly recommended.