PROTECTOWIRE® FireSystems

DATA SHEET

Important Installation Information
PHSC Linear Heat Detector

1. Model Numbers, Temperature Ratings, and Approved Spacing

Product Type	Model Number	Alarm Temperature	Max. Ambient Temperature	UL/cUL Approval/ Max. Listed Spacing	FM Approval/ Max. Listed Spacing
PHSC-EPC Multi-Purpose/ Commercial & Industrial Applications	PHSC-155-EPC	155°F (68°C)	115°F (46°C)*	50 ft. / 15.2m	30 ft. / 9.1m
	PHSC-172-EPC	172°F (78°C)	130°F (54°C)	50 ft. / 15.2m	30 ft. / 9.1m
	PHSC-190-EPC	190°F (88°C)	150°F (66°C)	50 ft. / 15.2m	30 ft. / 9.1m
	PHSC-220-EPC	220°F (105°C)	175°F (79°C)*	50 ft. / 15.2m	25 ft. / 7.6m
	PHSC-280-EPC	280°F (138°C)	200°F (93°C)	50 ft. / 15.2m	25 ft. / 7.6m
	PHSC-356-EPC	356°F (180°C)	221°F (105°C)	50 ft. / 15.2m	See Note 1
PHSC-XCR High Performance/ Industrial Applications Excellent Abrasion & Chemical Resistance	PHSC-155-XCR	155°F (68°C)	115°F (46°C)*	50 ft. / 15.2m	30 ft. / 9.1m
	PHSC-172-XCR	172°F (78°C)	130°F (54°C)	50 ft. / 15.2m	30 ft. / 9.1m
	PHSC-190-XCR	190°F (88°C)	150°F (66°C)	50 ft. / 15.2m	30 ft. / 9.1m
	PHSC-220-XCR	220°F (105°C)	175°F (79°C)*	50 ft. / 15.2m	25 ft. / 7.6m
	PHSC-280-XCR	280°F (138°C)	200°F (93°C)	50 ft. / 15.2m	25 ft. / 7.6m
	PHSC-356-XCR	356°F (180°C)	250°F (121°C)	50 ft. / 15.2m	See Note 1
PHSC- LSZH Multi-Purpose/Low Smoke Zero Halogen	PHSC-135-LSZH	135°F (57°C)	100°F (38°C)	50 ft. / 15.2m	30 ft. / 9.1m
	PHSC-155-LSZH	155°F (68°C)	115°F (46°C)*	50 ft. / 15.2m	30 ft. / 9.1m
	PHSC-172-LSZH	172°F (78°C)	130°F (54°C)	50 ft. / 15.2m	30 ft. / 9.1m
	PHSC-190-LSZH	190°F (88°C)	150°F (66°C)	50 ft. / 15.2m	30 ft. / 9.1m
	PHSC-220-LSZH	220°F (105°C)	175°F (79°C)*	50 ft. / 15.2m	25 ft. / 7.6m
	PHSC-280-LSZH	280°F (138°C)	200°F (93°C)	50 ft. / 15.2m	25 ft. / 7.6m
	PHSC-356-LSZH	356°F (180°C)	250°F (121°C)	50 ft. / 15.2m	See Note 1
PHSC- EPR Good Weathering Properties & Flexibility Over a Wide Temperature Range	PHSC-155-EPR	155°F (68°C)	115°F (46°C)*	50 ft. / 15.2m	30 ft. / 9.1m
	PHSC-172-EPR	172°F (78°C)	130°F (54°C)	50 ft. / 15.2m	30 ft. / 9.1m
	PHSC-190-EPR	190°F (88°C)	150°F (66°C)	50 ft. / 15.2m	30 ft. / 9.1m
	PHSC-220-EPR	220°F (105°C)	175°F (79°C)*	50 ft. / 15.2m	25 ft. / 7.6m
	PHSC-280-EPR	280°F (138°C)	194°F (90°C)	50 ft. / 15.2m	25 ft. / 7.6m
	PHSC-356-EPR	356°F (180°C)	194°F (90°C)	50 ft. / 15.2m	See Note 1
PHSC- XLT Multi-Purpose/Excellent Low Temp. Properties	PHSC-135-XLT	135°F (57°C)	100°F (38°C)	50 ft. / 15.2m	30 ft. / 9.1m

* For Open Area Applications the recommended UL 521 maximum ambient temperature for PHSC-155 models is 100°F (38°C) and PHSC-220 models is 150°F (66°C). Temperature shown in table are acceptable for UL Special Application use.
Note 1: FM Approved for special application use only.
Note 2: All Protectowire models supplied on Messenger Wire are identified by the suffix "-M" after the model numbers shown above.
Note 3: All detectors rated to -40°F (-40°C) except PHSC-135-XLT which has been rated to -60°F (-51 °C).

2. General

2.1 Protectowire Linear Heat Detector may be installed in a wide range of industrial and commercial fire detection applications. Please refer to the National Fire Alarm and Signaling Code, NFPA 72 in the United States for installation and spacing requirements. In Canada, the heat detectors are to be installed in accordance with the Standard of Installation of Fire Alarm Systems, CAN/ULC-S524; National Building Code of Canada; and National Fire Code of Canada.

2.2 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 that results in increased protection should be utilized.

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3. Electrical Arrangement

3.1 Protectowire is a listed and approved Line Heat Detector that is intended for connection to a supervised initiating device circuit on a protective signaling control unit.

3.2 Copper wire of an approved type with a minimum of 18 AWG shall be installed from the control panel to the start of the Protectowire Line Heat Detector run. Termination boxes must be used at the start (zone box) and end (end of line box) of detector runs. SR-502 Strain Relief Connectors, or equivalent, shall be installed in all Junction boxes where Protectowire enters or exits the enclosure. This is needed in order to secure the detector and provide a proper seal against dirt and moisture. All zone and ELR boxes shall be appropriately rated for the environment in which they are employed.

3.3 All electrical connections made within each zone box between the Protectowire Line Heat Detector and the circuit's interconnecting copper wiring or end-of-line device shall be made using compression type terminals. The Protectowire Company, Inc. supplies zone boxes with compression type terminals intended for direct connection of Protectowire conductors to the terminals. The use of wire nuts or similar noncompression type wiring devices shall be considered improper installation and a misapplication of the product.

4. Storage and Shipping

4.1 Protectowire Line Heat Detector is sensitive to heat and must be stored in areas where the temperature will not exceed the maximum ambient temperature rating of the detector. It must not be installed in contact with, or proximity to, any heat-producing equipment or environment that exceeds it maximum ambient temperature.

4.2 Each length of Protectowire Line Heat Detector is fully tested for operational integrity prior to factory shipment. Proper precautions must be taken to avoid excessive heat exposure during shipment or storage, if not, the detector could be compromised prior to installation.The Protectowire Company. Inc. recommends that every coil or spool of detector be inspected by the installer to verify type and temperature suitability for the application as well as test for electrical shorts prior to installation.

5. Installation Warnings

5.1 The detector is not fragile, however, pinching or crushing will damage it. Physical damage to the detector may or may not be apparent during the installation process. Damage to the outer jacket or unnecessary mechanical stress applied to the detector during installation will likely result in "false" alarms. In order to reduce the possibility of damage during installation, observe the following:

- 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 Company.
- DO NOT place it where it will be subject to mechanical damage by equipment processes.
- DO NOT over tighten the fasteners as this may breach the outer jacket or crush the inner insulation causing "false alarms." All fasteners must allow the detector to expand and contract with temperature changes.
- DO NOT over stretch the Protectowire runs; some detector "sag" between fasteners is normal.
- DO NOT MAKE NINETY DEGREE (90°) BENDS. All bends should be made using the fingers without holding the detector with pliers and consist of rounded turns with a minimum 2.5 inch (6.4 cm) radius.
- DO NOT USE WIRE NUTS. All connections must be made via terminals and/or approved splicing devices.
- DO NOT PAINT THIS DETECTOR per UL and FM requirements.

6.Outdoor Applications

6.1 Exposure to direct sunlight may expose the detector to temperatures in excess of the rated maximum ambient or cause false actuation of the device. Outdoor use of 135° F (57° C) or 155° F (68° C) rated detectors is not recommended. Depending upon the environment, heat shielding of higher temperature rated detectors may be required to reduce potential exposure to excessive ambient temperatures.

6.2 High humidity and damp locations require the use of SFTS Sealant tape for all in-line connections where PWSC or PWS slicing devices are used. For outdoor applications, all connections must be enclosed in an appropriately NEMA/IP rated zone/Junction boxes utilizing SR-502 Series Strain Relief Connectors where the Protectowire Linear Heat Detector enters or exits the box.

7. Installation Hints

7.1 Whenever possible, corners should be rounded by pulling the detector into a natural curve rather than bending it. This reduces installation time and improves the finished appearance. It also creates a spring tension at the corners that 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.

7.2 The spring steel conductors' gives the detector a tendency to straighten out when taken from the spool. The same conductors, 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.

7.3 The use of a good portable wire reel is highly recommended.

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