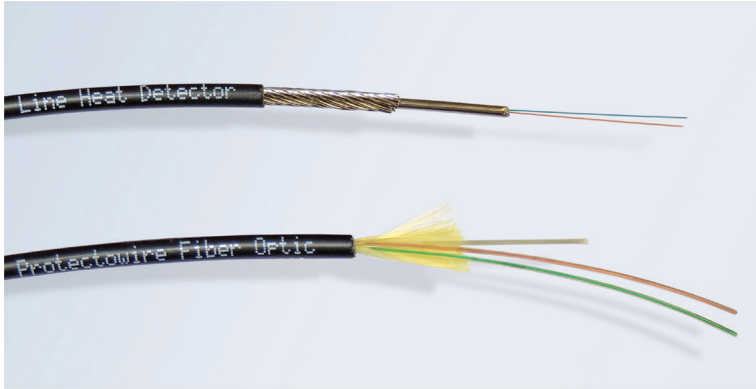# FIBRE OPTIC LINEAR HEAT DETECTION
FiberSystem 8000 PFS SERIES FIBRE OPTIC SENSOR CABLE

PROTECTOWIRE® FIBRE OPTIC SENSOR CABLE

DESCRIPTION

Fibre optic technology in fire detection is ideally suited to industrial high-risk hazards as well as many types of commercial applications. Protectowire's PFS Series Fibre Optic Sensor Cable has unique advantages over other types of detectors – especially when difficult installation factors or severe environmental conditions are present.

When used with a Protectowire FiberSystem 8000 PTS Controller, temperature measurement on the sensor cable takes place at periodic intervals to provide a continuous temperature profile.

The PFS Series Fibre Optic Sensor Cable measures temperatures by means of optical fibres functioning as linear sensors. Temperatures are monitored along the sensor cable as a continuous profile. This ensures highly accurate temperature discrimination over great distances or large surface areas. The sensor cable consists of a non-metallic or stainless steel tube with an outside diameter of 1.2 – 1.8 mm. In the tube are two independent colour-coded quartz fibres. Depending upon the model selected, the tube is clad with a layer of stainless steel wire or Aramid yarns. The sensor's core is then sheathed in a flame retardant and halogen free jacketing material to a diameter of 4 mm.

Today, fibre optic temperature sensors are used in a variety of special applications. Their unique characteristics make them adaptable for such varied uses as monitoring the curing of concrete, detecting road icing and leaks in pipelines, and monitoring power cables for overloads.

The PFS Series product range consists of two distinct types of Sensor Cable. Each type has a unique construction that has been designed to accommodate the widest range of installation requirements and environments.

FEATURES

- Two distinct cable options
  - Stainless Steel core
  - Metal-free
- Immune to electromagnetic interferences
- Withstands severe environmental conditions
- Little or no maintenance required
- Halogen free, flame retardant jacket
- Programmable alarm temperature
- Fully reinforced and metal free

APPROVALS

- ATEX
- VdS
- UL Listed

APPLICATIONS

METAL–FREE (PW–PFS–654MF)

- Most commonly used where there is a high amount of electromagnetic interference (EMI) or radio frequency interference (RFI), eg.
  - Tunnels
  - Cable Trays
  - Transformers

STAINLESS STEEL CORE / FULLY REINFORCED (PW–PFS–554FR)

- Used in most industrial environments, eg.
  - Storage Warehouses
  - Conveyors
  - Pipelines

OTHER APPLICATIONS

- Power Distribution Apparatus, eg. Switchgear, Motor Control Centres, Power Cables
- Cooling Towers
- Mines
- Bridges
- Piers
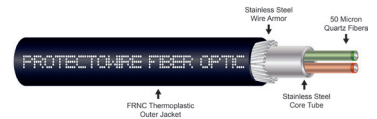- Marine Vessels
- Aircraft Hangars

FIBRE OPTIC LINEAR HEAT DETECTION
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SPECIFICATIONS

FR Sensor Cable (PW-PFS-554FR) consists of a stainless steel core tube that contains two independent colour-coded quartz fibres each with an outside diameter of .25 mm. The tube cavity is gel-free and is longitudinally and laterally watertight. The outside of the core tube is wrapped with a layer of fine stainless steel wires that add to the mechanical and tensile strength of the cable. The sensor cable is then sheathed with a halogen free, flame retardant FRNC thermoplastic jacket suitable for a wide range of applications and environments.

MF Sensor Cable (PW-PFS-654MF) is a metal-free sensor specifically designed for use in applications where a high amount of electromagnetic disturbances are expected like tunnels, high voltage cable trays and transformers. To minimize the risk of induced voltages, the construction of the metal free Sensor Cable substitutes a polyamide core tube reinforced with Aramid yarn in place of the stainless steel tube and wire used in the FR type Sensor. The outer jacket consists of the same halogen free, flame retardant FRNC thermoplastic used throughout the product line. This series is best described as multi-purpose, and is well suited to a wide range of both commercial and industrial applications.

	PW-PFS-554FR	PW-PFS-654MF
Number of Fibres	2	2
Cable Diameter	4 mm	3.8 mm
Min Bend Radius	60 mm	60 mm
Max Ambient Temperature Range	–40 to 85 °C	–40 to 85 °C
Cable Weight	44 kg/km	18 kg/km
Max UL Listed Spacing	15.2 m	15.2 m
UL Listed Alarm Operating Temperature Range	57 °C to 113 °C	57 °C to 113 °C

ORDERING INFORMATION

Product Code	Product Description
PW-PFS-554FR	Protectowire Reinforced Fiber Optic Sensor Cable with Internal Stainless Steel Braid
PW-PFS-654MF	Protectowire Fiber Optic Metal Free Sensor Cable

Note: *All Sensor Cable is priced and sold per metre. Minimum order is 30 metres. All orders must be in 10 metre increments. No Exceptions.*

Accessories

PW-PWC-2000	E-2000 APC 8° Angled Connector with 5m Pigtail
PW-JB-2S	Joint Box c/w Integral Strain Relief & Splice Tray (NEMA 1 / IP20)

Please refer to the FiberSystem 8000 PTS Series Controllers datasheet for detailed information on the PTS Controller options.

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