

Advanced Early Warning Smoke, Heat, Flame, & Water Detection

Product Catalog



The Leader In Specialty Detection Products

- Innovations
- Solutions
- Support



Not Just Products...



Innovations

Safe Fire Detection is the innovator in providing new state of the art detection products helping protect companies around the world. Safe Fire Detection has introduced innovations in linear heat, water leak and aspirating and flame detection. Now Safe is moving forward by soon offering even more innovative products to safeguard your facility.

Engineers Providing Engineered Solutions

Safe Fire Detection is committed to providing the best customer support in the industry. This provides our clients with the satisfaction of knowing that their valuable assets and business operation are our greatest concerns. This trust has been earned through over 40 years of proven product reliability, dedication, and unparalleled detection technologies.

Safe has built its reputation on innovative and advanced engineered detection solutions. We combine extensive industry knowledge with solid technical expertise to help our clients safeguard their assets.





- Innovations
- Solutions
- Support

...Customer Focused Solutions

Facilities

Safe Fire Detection is constantly expanding and improving its facilities with a new factory in North Carolina which implemented an advanced 5S inventory and production management system so that we ensure your order is processed with the highest level of quality and efficiency.

Solutions

Safe Fire Detection is committed to providing you with not only the highest quality products in the industry, but also the best possible customer service. With Safe it's not just about boxes. It's about customer focused solutions.

Over Forty Years Experience In The Specialty Detection Industry



Safe Fire Detection
An Environmentally Friendly
American Company

Safe Fire Detection has established itself as the leader in the specialty detection manufacturing industry and put down roots as a manufacturer in Monroe, North Carolina. Safe has distinguished itself to be the only aspiring manufacturing company in the United States while continually introducing innovative new solutions in linear heat detection, water leak, UV/IR and IR3 flame detection.

Safe offers the latest in specialty detection while being the only manufacturer who also offers complete testing, design, smoke modeling and engineering services, giving the customer a single source for their entire project.

- Standard Aspiring Smoke Detection
- Intelligent Aspiring Fire Detection
- Portable Aspiring Fire Detection

Our Family Of



pg.5

Standard Aspiring Smoke Detector

SAFE
ASD™

Lowest Cost
Earlier Warning
Lowest Maintenance
Commercial Environments



pg.9

Intelligent Aspiring Fire Detector

PRO
Series

High Airflow
High Ceilings
Earliest Warning
No False Alarms
Industrial and Commercial



pg.17

Portable Aspiring Fire Detector

PRO
Locator

Where's The Fire?
Why Wait For Smoke?
Find The Source of the Fire
Handheld And Easy To Carry

Customer
Support

Research &
Development

Sales



www.safefire

Products and Services

- Linear Heat Detection Cables
- Linear Water Leak Detection
- Optical Flame Detection

Engineering

Technical
Services



detection.com

Linear Heat Detection Cables

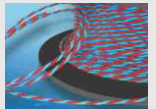


pg.21

Linear Heat
Fiber Optic
Rate of Change
Early Warning LHD

SAFE
Cables

Linear Water Leak Detection



pg.35

Lowest Cost
Up to 1,000 Linear Feet
Plug and Twist Installation
Modular or Distance Locating

PRO
H₂O

IR3 and UV/IR Flame Detection



pg.39

Lowest Cost
High Sensitivity
Long Range Detection
Standard and Explosion Proof

SAFE
Flame



Standard Aspirating **SMOKE** Detector

DEFINITION:

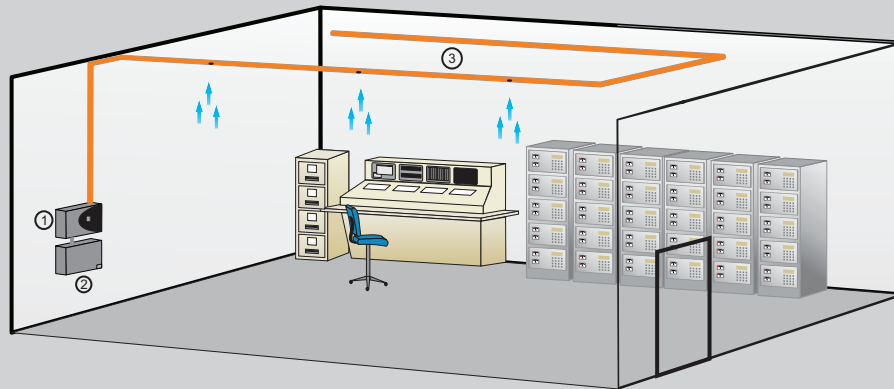
as•pirat•ing smoke de•tec•tor

/as'pirāt'ing smohk dī'tektər/

Noun

1. A detector that utilizes a fan or aspirator to actively draw air from the environment back to a high sensitivity smoke sensor through a pipe network to detect smoke in its earlier stages of a fire, as opposed to standard sensitivity spot detectors that passively wait for smoke to rise to the sensor in much higher concentrations.

EXAMPLE:



STANDARD EARLIER WARNING ASPIRATING SMOKE DETECTION

The SafeASD-720 (1) "**Standard Aspirating Detector**" utilizes a highly sensitive light scattering sensor that utilizes a 24 hour backup power supply (2) and an aspirating pipe network (3) that actively draws air back from the environment to give you an earlier warning of a fire.

SAFE
ASDTM
Aspirating Smoke Detector

UL_C US
CE
CSFM
MADE IN USA



Earlier Warning Smoke Detector



Standard Earlier Warning
Aspirating Smoke Detector

- Prevent
- Protect
- Preserve



Standard Aspirating Smoke Detection

Standard Aspirating Smoke Detection

SafeASD is the next generation in earlier warning aspirating smoke detection systems. Now aspirating detection can offer earlier detection at an affordable price. SafeASD utilizes a powerful aspirator to draw air back from the environment to a highly sensitive light scattering optical sensor via a supervised air sampling pipe network. SafeASD takes the place of conventional smoke detectors. SafeASD's active approach to smoke detection is continually searching for earlier signs of smoke instead of passively waiting for smoke to rise to a detector. This gives you more time to react to an alarm.

Installation is easy and commissioning even easier. SafeASD's "Auto" Commissioning feature, advanced "Frequency" Flow Supervision and "Full Feature" product supervision eliminates the need for laptops and complicated programming equipment.

SafeASD's combination of earlier active detection, ease of installation and single point service can provide the lowest costs and better protection for your business.

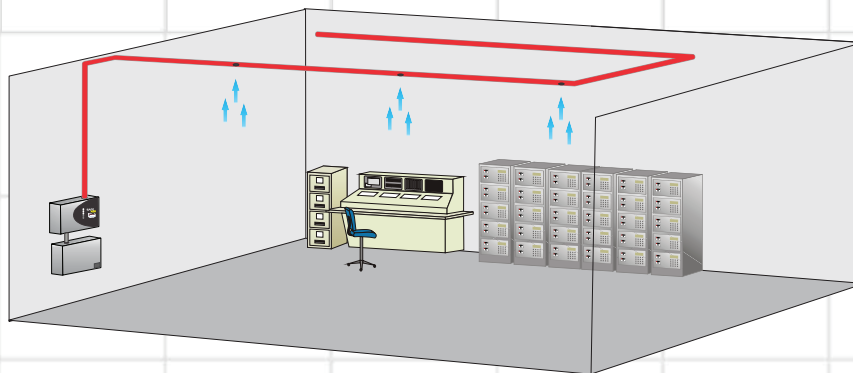


No Filters ■
Lowest Maintenance ■
Lowest Cost ■

SAFE
ASDTM
 Aspirating Smoke Detector

■ **Earlier Warning**
 ■ **Advanced Technology**
 ■ **More Coverage**

- Offices
- Hospitals
- Freezers
- Churches
- Clean Rooms
- Commercial Buildings



- Prisons
- Airports
- Cabinets
- Warehousing
- Electrical Rooms
- Shopping Centers



- Earlier Detection
- Better Protection
- Lowest Cost

Advanced Technology and Features



SAFE Advanced Features ASD™

- “Earlier” Warning
- “High Sensitivity” Sensor
- “Full Feature” Product Supervision
- “Auto” Commissioning
- NO FILTERS
- Up to 270ft. of Pipe
- Multiple Alarm Levels
- Light Scattering Technology
- Coverage: 720m² (7200 sq. ft.)
- Supervised Pipe Network

Standard 2 Year Limited • Optional 5 Year Warranties

High Sensitivity Sensor

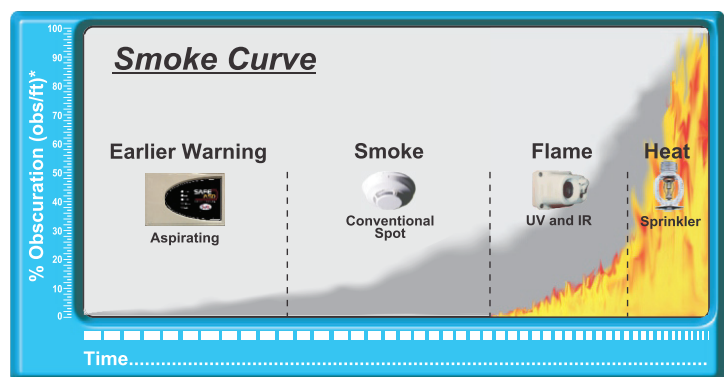
SafeASD’s high sensitivity light scattering technology offers advanced earlier warning detection to help safeguard your facility. Utilizing the latest in advanced detection the SafeASD can offer advanced notification over conventional smoke detection.

PATENT PENDING



PROUDLY MADE IN THE USA

Earlier Warning Smoke Curve



*Obscuration (obs/ft) - Percentage of light decrease per foot due to smoke, dirt, dust or pollutants in an environment.



Intelligent Aspirating **FIRE** Detector

DEFINITION:

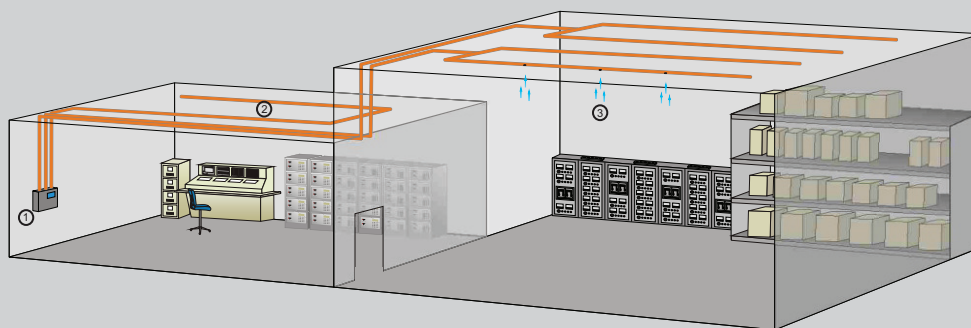
as•pirat•ing fire de•tec•tor

/as'pirāt'ing fī(ə)r di'tektər/

Noun

1. A detector that utilizes a fan or aspirator to actively draw air from the environment back to an ultra high sensitivity fire sensor through a pipe network to detect fire “Before Smoke” in the earliest stage of a fire, as opposed to standard sensitivity spot detectors that passively wait for large amounts of smoke to rise to the sensor.

EXAMPLE:



INTELLIGENT ULTRA EARLY WARNING ASPIRATING FIRE DETECTION


ProSeries “Intelligent Aspirating Detectors” (1) utilize the most advanced intelligent technologies available to draw air back to the detector by the most powerful aspirator in the industry through a supervised pipe network (2). The ProSeries detector then amplifies the invisible combustion particles (3) released during the overheating stage of a fire “Before Smoke” giving the earliest possible warning of a fire.

PRO
SeriesTM
ASD



UL[®] C US
FM
APPROVED
CE
CSFM
MEA
ISO 9001

Intelligent Aspirating Fire Detector



**Intelligent Earliest Warning
Aspirating Fire Detector**

- Before Smoke
- Before Fire
- Before Downtime



New Advanced Detection Technology

I NTELLIGENT ASPIRATING FIRE DETECTION

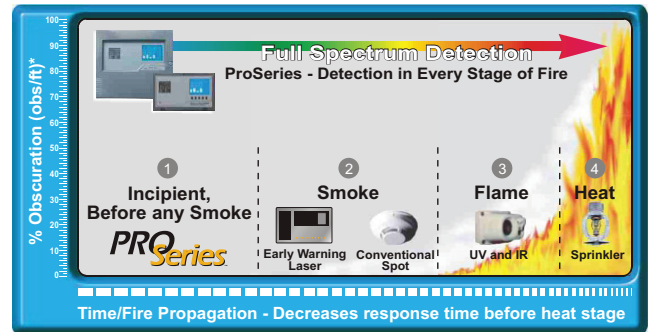
Before Smoke There Is Fire...

The new advanced intelligent CCD (Cloud Chamber Detection) technology from Protec combined the benefits of spot, laser, and cloud chamber detection into a single detector, and can detect before smoke. CCD provides paralleled technology which only detects combustion making it immune to false alarms from dust, dirt, temperature, and humidity which plague other early warning air sampling and spot detectors. The introduction of CCD technology now allows for an aspirating system to be ultra sensitive while eliminating the nuisance alarms associated with other detection technologies.

PRO
Series



Four Stages of Fire

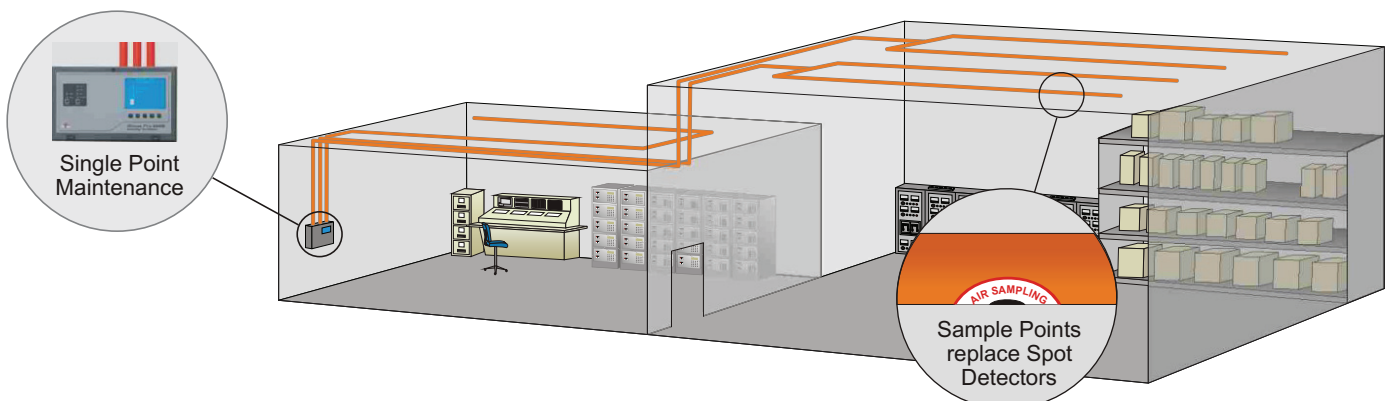


- Before Smoke
- The Most Sensitive Detector Available
- No False Alarms
- Detects in All Four Stages of Fire

*Obscuration (obs/ft) - Percentage of light decrease per foot due to smoke, dirt, dust or pollutants in an environment. CCD technology only senses combustion and can detect from zero to 100% obs/ft. while remaining immune to false alarms.

SINGLE POINT MAINTENANCE - LOWER COST

In addition to the advanced detection abilities when using CCD technology, single point maintenance allows for easily servicing the detection system. By eliminating the mandated yearly testing of each ceiling mounted spot detector (NFPA 72), the need for expensive lifts and hours of labor have been reduced to a few quick and simple tests performed at the detector.





- Standard
- Enhanced
- High Pressure

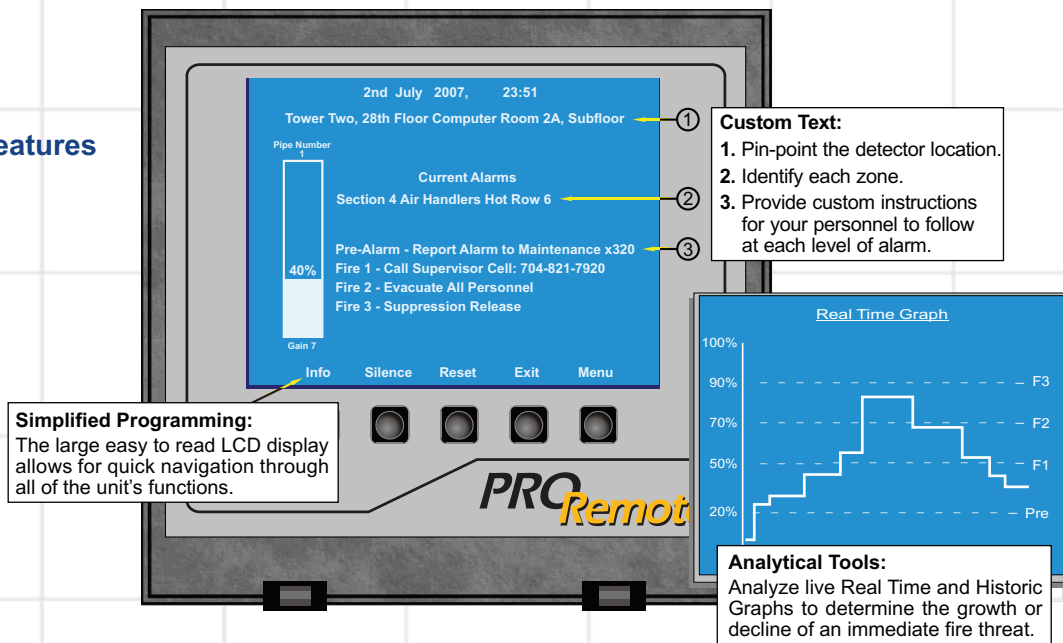
LCD Display with Custom Text

USER FRIENDLY DISPLAY

ProSeries detectors may now be equipped with the industry's largest and most versatile LCD display. This new multifunction display allows users to easily identify and respond to an early warning alarm in addition to receiving detailed instructions via the display.

LCD Display Features

- Program
- Display
- Troubleshoot
- Network



REMOTE DISPLAY, PROGRAMMER AND NETWORK HUB

A Remote Display or any unit with a display on a detector network, now allows you too easily Program, View, Display Historic Graph and Event Logs, Troubleshoot, and provide Alarm Notification for any unit on the network. The multifunction LCD display features easy to navigate menus and customizable text for naming detectors, zones, alarm levels and even specific instructions for personnel to follow.

Remote Display



- Program Detectors
- View Historic Graph
- Real Time Graph
- Review Event Logs
- Troubleshoot Detectors
- Review Detector Statistics
- Alarm Notification
- Zone Identification
- Alarm Procedures

Detector Network



- Detector Network
- PC Network
- Internet Network



Expanded Networking Abilities

MULTIPLE DETECTOR NETWORKING OPTIONS

ProSeries detectors provide several networking options. From a simple RS485 Peer to Peer network between detectors using a detector LCD display or ProRemote as the network hub, to software driven networks using TCP/IP for access through any LAN, WAN, or internet connection.

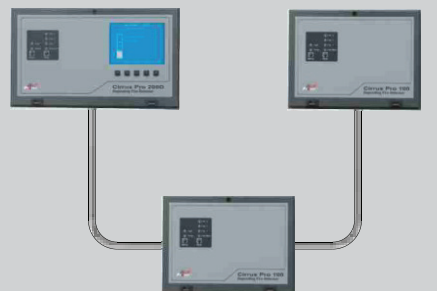
Peer to Peer Detector Networking

Built-In RS485 Networking

Simply use a shielded Belden 9841 type cable to network the units together via the internal RS485 connections.

Network Simplicity

Any unit with an LCD display, or a Remote Display, may be used to Program, View, Display Historic Graph and Event Logs, Troubleshoot, and provide Alarm Notification for any unit on the network.



Remote Display

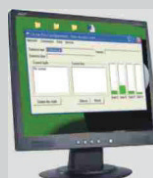
A Remote Display may be placed in areas which are populated after hours such as guard stations or office areas.



Complimentary CirrusPro

Networking Software for PC

Available at no cost, CirrusPro Networking Software will allow you to easily Program, View, Display Historic Graph and Event Logs, or Troubleshoot any detector on the network via a PC. Simply connect a PC running CirrusPro software to any detector on a Peer to Peer network.





- Peer to Peer
- RS232
- TCP/IP

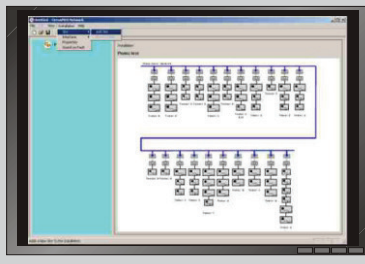
Networking Solutions

HLI NETWORKING SOFTWARE

ProNet

Remotely monitor a detector network using ProNet High Level Interface software via an internet, LAN, or WAN connection. Detailed graphic maps of an area are used to isolate alarms and display specific zone information. You may also Program, View Detector Status, Display Historic Graphs and Event Logs, as well as Troubleshoot any detector on the network.

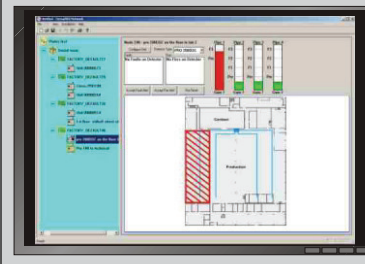
View entire detector network tree remotely via TCP/IP



View status of any detector on network in any hazard

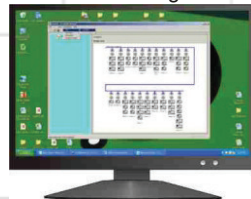


Receive real time notification of any detector zone in alarm

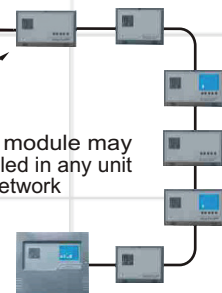


ProNet Realtime Remote Network Monitoring Software

TCP/IP Connection

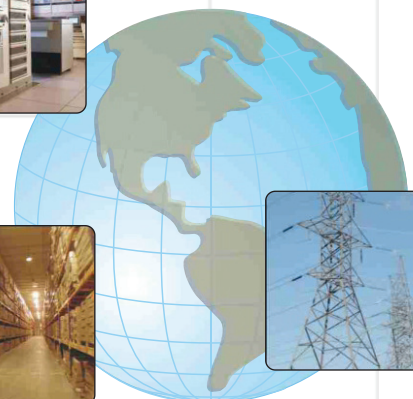


TCP/IP module may be installed in any unit on the network

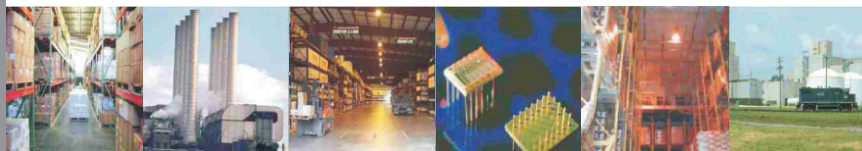


■ Integrated TCP/IP Networking

The ProSeries TCP/IP Interface Module works with ProNet software to access a detector network through any Internet, LAN, or WAN connection. This easy to install module is simply mounted inside a detector and is configured using the CirrusPro software. Any detector on the network, with or without a display, may act as the TCP/IP detector hub.



- Industrial
- High Ceilings
- Extreme Hazards



Difficult Applications

When All Else Fails...

Dirty	Dusty	Humid
Gases	Vapors	Chemicals
High Ceilings	High Airflow	High Temperatures

Industrial and harsh environmental applications are traditionally difficult to protect with conventional detection methods. Exposure to dirt, dust, humidity and corrosive conditions can cause other aspirating fire detectors to fail in offering the reliable and cost effective solution that these "challenging" environments require. Accelerated wear on other systems from harsh conditions increases both maintenance of the installed system and the occurrence of false alarms. This creates a significantly more costly system to maintain, and false alarms caused by inappropriate detectors can disrupt normal business operations.

PROX4



The ProX4's advanced CCD technology is TRULY immune to dust, dirt, and pollutants that can cause false alarms in other detectors. The ProX4 can also detect at ceiling heights of up to 125', in winds up to 67MPH, protect more area than any other detector on the market, and has the largest aspirating pipe network available. Combined with single point maintenance, the ProX4 offers the greatest versatility and reliability at the lowest cost for your challenging environment.

PRO Series -Industrial

The Only TRULY Industrial Air Sampling Detector
For Hostile and Difficult Environments

Freezers
Warehouses
Laboratories
Textile Plants
Manufacturing
Chemical Plants



Factories
R&D Facilities
Processing Plant
Industrial Coolers
Harsh Environments
Gaseous Environments



- Early Warning
- Before Smoke
- Cost Effective

Harsh and Difficult Environments

The Industrial Solution



- Before Smoke
- No False Alarms
- Unaffected by Stratification
- Lower Maintenance Costs

**PROTECTING
INDUSTRIAL
ENVIRONMENTS
SINCE 1972**

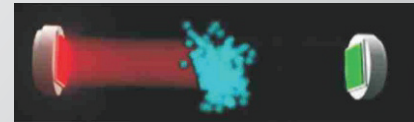


- Single Point Maintenance
- Ceiling Heights up to 125ft.
- 42,300 sq.ft. of Coverage
- Extreme Temperatures

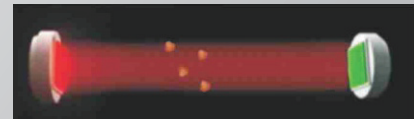


Behind The Technology

Air samples drawn into a ProSeries detector are passed through a CCD chamber for analysis. The CCD chamber amplifies the invisible .0025µm particles released during the overheating stage of a fire, prior to any smoke. These amplified particulate are directly proportional to the level of the fire event, and are detected via microscopic obscuration using a high output diode.

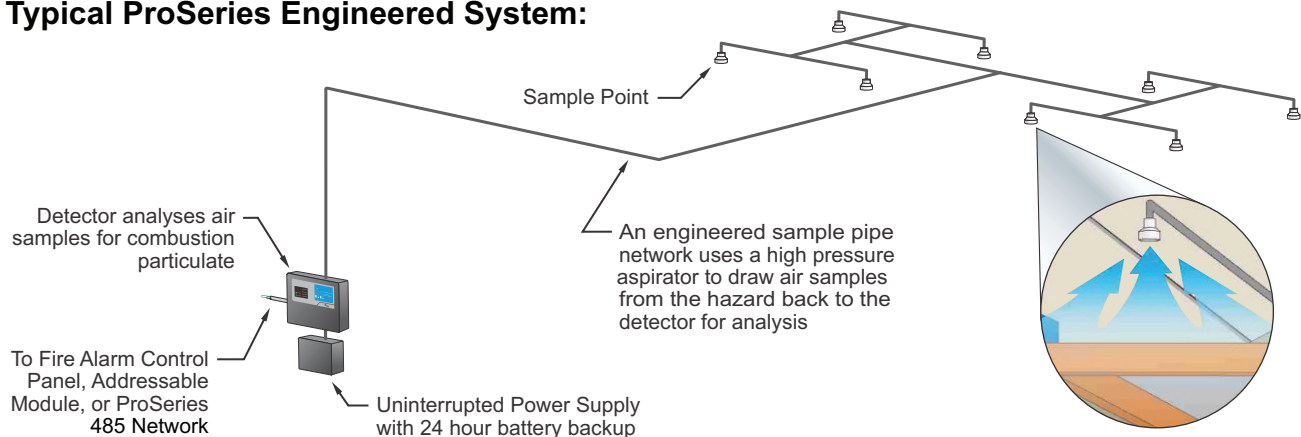


Other foreign airborne objects such as dirt, dust and pollutants are inherently too large and in too few quantity to be detected. These foreign objects do not affect the ability of the CCD to identify the much smaller combustion particles. This in turn eliminates false alarms associated with other detection methods which use other technologies.



For more information, please view the ProSeries technology video on our website, www.safefiredetection.com

Typical ProSeries Engineered System:





Portable Aspirating Smoke Detector

DEFINITION:

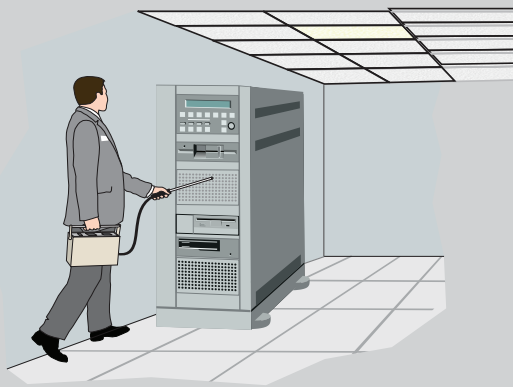
port•a•ble as•pir•at•ing de•tec•tor

/pôrtəbəl as'pirāt'ing dɪ'tektər/

Noun

1. A hand held ultra sensitive portable aspirating smoke detector that utilizes a fan or aspirator to draw air from the environment back to the detector through a hand held probe. The detector allows the user to locate the source of a fire or overheating component BEFORE smoke is visible.

EXAMPLE:



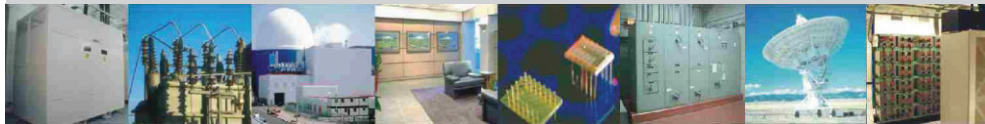
The ProLocator is the industry's ONLY self contained portable early warning aspirating detector. It can be used to locate the source of a fire, early warning fire alarm or overheating component that cannot be seen or located by any other detector. The PVC sampling probe may be used to sample above drop ceilings, around electrical equipment, inside cabinets or other hard to reach places.

PORTABLE

PRO *Locator*[™]



Portable Aspirating Smoke Detector



Portable Early Warning Aspirating Smoke Detector

ASPIRATING FIRE DETECTOR

- Before Smoke
- Before Fire
- Before Downtime



Portable Aspiring Fire Detection

PORTABLE EARLY WARNING FIRE DETECTION

With Early Warning Air Sampling Systems protecting up to 20,000 sq.ft. per zone, identifying the source of an impending fire threat was very difficult. The ProLocator is the industry's first handheld portable aspiring fire detector which can lead you to the source that is causing an early alarm, which otherwise would not be seen, BEFORE smoke.

***Any Early Warning Detector Can Tell You Which Room,
Only the ProLocator Can Help You Find Where In The Room***



PRO Locator

The ProLocator uses advanced CCD technology which only detects combustion and is not affected by dirt and dust. Audible and LED indicators are used to indicate your proximity to the source of the alarm. The ProLocator will operate for up to two hours on a single charge or may be powered by using the supplied battery charger. The ProLocator is completely self contained and does not require any preventative maintenance.

The hard shell, foam lined case is ideal for protecting and storing the ProLocator and its accessories when not in use.



FEATURES

- Works with ANY system
- Locate potential fires from early warning alarms
- Probe inside equipment and above drop ceilings
- Not effected by dirt, dust, temperature or humidity
- Completely self contained
- Includes sampling probe and battery charger
- Does not require any recalibration
- LCD displays sensitivity and battery status
- Multi-speed audible tone and LED indicators
- Operates on both internal batteries or battery charger

APPLICATIONS

- Computer Rooms
- Power Plants
- Office Buildings
- Warehouses
- Hospitals
- Data Centers
- Cleanrooms
- Fire Departments



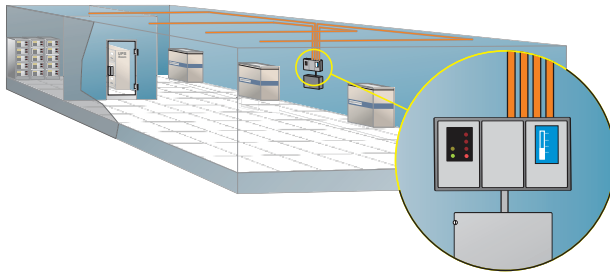
- Portable
- Light Weight
- Simple to Use

Where's the Fire?

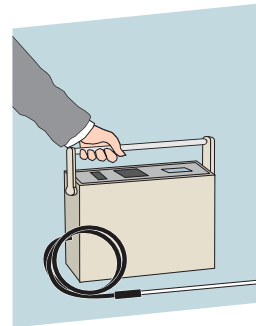
EASY TO USE

Using the ProLocator is simple, slowly walk through the area and narrow down where the signal is the strongest.

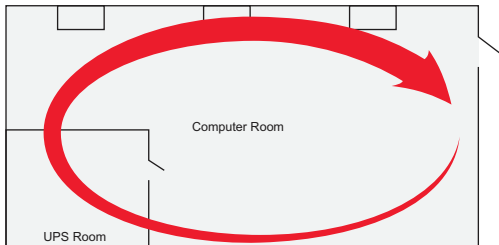
- 1.** Alarm sounds.



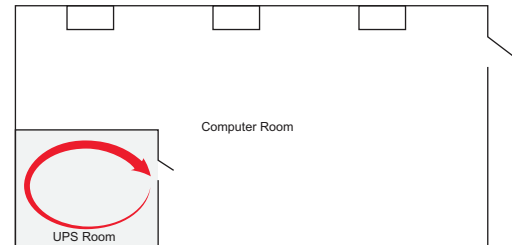
- 2.** Take the ProLocator to the area in alarm.



- 3.** Slowly walk through the entire area while watching the signal strength indicator and listening to the beep.



- 4.** Isolate the area with the highest signal strength.



- 5.** Use a process of elimination technique to isolate down to the smallest area possible.



- 6.** Take corrective action by notifying the appropriate personnel and by following proper emergency procedures.



Certain variables may increase the time needed to locate the cause of the fire alarm.



Linear Heat Detection Cable

DEFINITION:

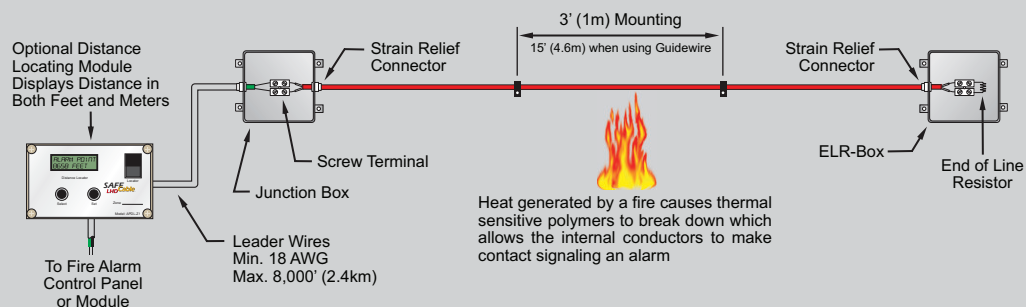
lin•e•ar heat de•tec•tor

/ˈlɪniər hit dɪˈtektər/

Noun

1. A cable comprised of an insulator that reacts at a specific temperature to detect fires anywhere along its entire length. When the insulator reacts at its specified temperature, the inner wires make contact and send an alarm signal back to an alarm panel.


EXAMPLE:



Note: May also be used in a 4 Wire (Class "A") configuration.


At the core of SafeCable™ is a pair of extremely low resistance conductors, sheathed in advanced polymers. These cables are engineered to react at specific fixed temperatures allowing the conductors to make contact and initiate an alarm at the alarm panel. Distance locating is also available on some models to identify and display the exact location, (in feet or meters) where the heat source or fire is anywhere along the entire length of the cable.

SAFE
Cables™



UL
UL C US
FM
APPROVED
CE
CSFM
MEA
ISO 9001

Specialty Linear Heat Detection Cables



Linear Heat Detection Cables

Standard Linear Heat

Early Warning Linear Overheat

Linear Fiber Optic

Linear Rate Of Change

- Nylon
- Polypropylene
- Guidewire



10,000 Linear Feet (3,000m) per Zone

Standard Linear Heat Detection

SafeCable Linear Heat Detection (LHD), is an advanced Digital Linear Heat Detection Cable that uses advanced polymers and a newly developed alloy to provide detection and durability like no other LHD cable. SafeCable may also be used on ANY new or existing addressable or conventional panel making it *the* cost effective solution.

At the core of SafeCable is a twisted pair of extremely low resistance, tri-metallic conductors, sheathed in new advanced thermal polymers. These polymers are chemically engineered to break down at specific fixed temperatures allowing the twisted conductors to make contact and initiate an alarm.

The polymer used for the protective outer coating of SafeCable is chemical resistant and provides UV protection. This allows for SafeCable to be used in an extremely wide variety of indoor and outdoor installations and hazards.

An optional distance locating module is available which can identify and display the exact location of the overheating condition in feet or meters. You may also use addressable modules to allow the control panel to pin-point and identify the location at a cost far less than distance locating.

SAFE
Cable
Linear Heat Detection



Detection Temperatures:
155°F (68°C)
172°F (78°C)
190°F (88°C)
220°F (105°C)
365°F (178°C)



MEA

Registered ISO 9001

Distance Locating

Distance Locating is available for SafeCable and allows you to locate where the fire or overheating condition is occurring anywhere along its entire length. The distance is displayed in both feet and meters.





- Longer Runs
- Less Resistance
- Lower Cost

Only .05 ohms/ft Resistance per Twisted Pair

SPACING AND TEMPERATURE

SafeCable is listed for spacing up to 35 ft. (10.7m) between parallel runs, half the listed spacing from sidewalls, and .7 times the listed spacing from corners per NFPA 72. For installations above 30 ft. (9.1m) use one half the listed spacing.

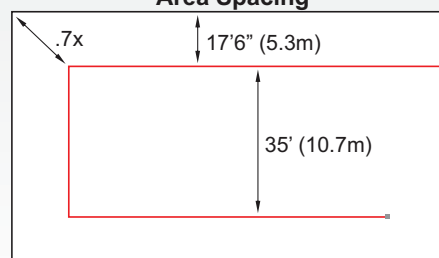
Listed Spacing

Temperature Rating	UL, C-UL-US	FM
155°F (68°C)	35' (10.7m)	30' (9.1m)
172°F (78°C)	35' (10.7m)	30' (9.1m)
190°F (88°C)	35' (10.7m)	30' (9.1m)
220°F (105°C)	35' (10.7m)	25' (7.6m)
365°F (105°C)	35' (10.7m)	25' (7.6m)

*Half the listed spacing is used for ceiling heights above 30' (9.1m)

SAFE
Cable

Area Spacing



FEATURES AND BENEFITS

- **Compatible with ANY New or Existing Addressable or Conventional Panel**
- **Up to 10,000 Linear Feet (3,000m) of SafeCable May Be Used per Zone**
- **Multiple Alarm Temperatures May Be Combined on the Same Zone**
- **Can Detect Heat Anywhere Along its Entire Length**
- **RF Tested Up to 10,000 ft. (3,000m)**
- **Lower Material and Installation Cost**
- **Nylon Outer Jacket (Optional) - Provides Greater UV Protection for Outdoor Use and Harsh Industrial Environments than Standard PVC**
- **Polypropylene Outer Jacket (Optional) - Provides Greater Protection for Chemically Harsh and Caustic Environments than Standard PVC**
- **Guidewire (Optional) - 12 AWG Stainless Steel Support Wire Attached to any Temperature SafeCable Used for Long Spans**
- **Distance Locating (Optional) - May be Used with Any Temperature SafeCable**

SafeCable Options

SafeCable is available with several outer covering options for hazard specific installations. These options are available on all temperatures of SafeCable

NEW

NXT - Our new NXT outer jacket is designed specifically for harsh and outdoor environments. It also offers UV protection and extra durability.

Polypropylene - For chemically harsh and caustic environments.

Guidewire - For spanning distances up to 250 ft. (76m) with supports every 15 ft. (4.6m).

- Any Panel
- Addressable
- Conventional



System Components

Standard Linear Heat Detection

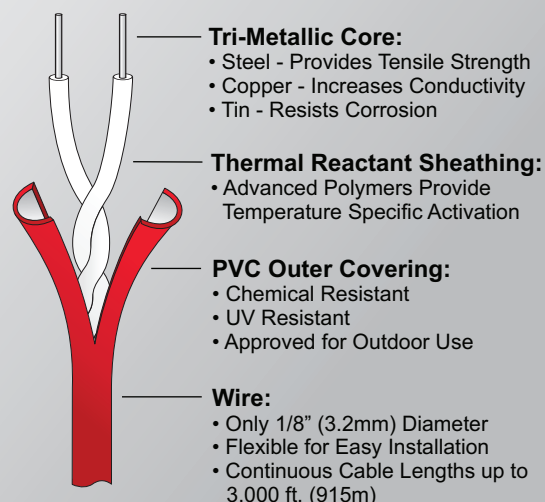
LHD: Linear Heat Detection, as illustrated below, is easy to design, install, operate, and maintain. A typical system begins with any approved conventional or addressable fire alarm panel. A Distance Locating Module may be added to identify where the overheating condition is occurring. Leader wires are then run in conduit from either the panel, an addressable module, or the distance locating module, to the beginning of the zone. Conventional panels must run each zone independently. A NEMA 4 Junction Box houses a Screw Terminal which connects the leader wires to the SafeCable. The SafeCable then exits the Junction Box through a moisture proof Strain Relief Connector which seals the box to prevent corrosion. Approved mounting hardware is then used at 3ft. (1m) intervals to support the detection cable without restricting any movement needed for contraction.

Several styles of mounting accessories are available which are designed to accommodate different types of hazards. At the end of each zone, the SafeCable is terminated in an ELR-Box using the end of line resistor supplied by the panel manufacturer or looped back when using a 4 Wire (Class "A") configuration.

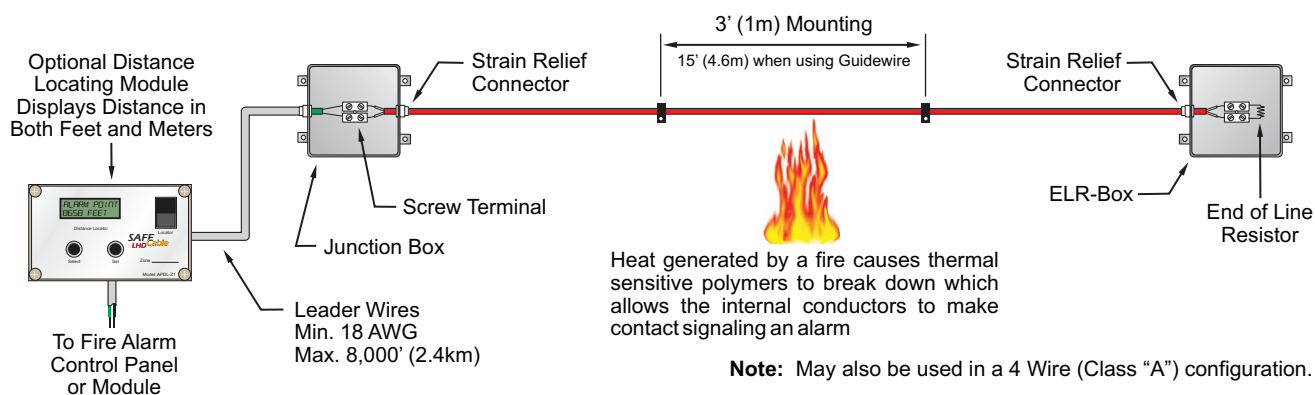


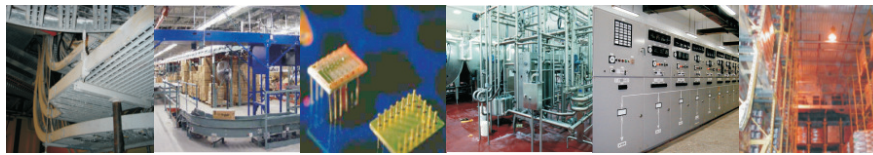
The Technology Behind Standard LHD

SafeCable Linear Heat Detection (LHD), uses advanced polymers and a newly developed alloy to provide exceptional detection, durability, and design flexibility. At the core of SafeCable is a twisted pair of extremely low resistance, tri-metallic conductors which are sheathed in new advanced thermal polymers. These polymers are chemically engineered to break down at specific fixed temperatures allowing the twisted conductors to make contact and initiate an alarm.



Typical SafeCable LHD System:





- Any Panel
- Addressable
- Conventional

System Components

FEATURES

SAFE
Cable

- **Lowest Cost**
- **Up to 10,000 Linear Feet Per Zone**
- **Use with ANY UL Listed Panel**
- **Multiple Alarm Temps on a Single Zone**
- **Total Zone Replacement Unnecessary After Alarm**
- **Approved for Up To 35' Spacing**
- **Lower Resistance Than Any Other LHD**
- **Custom Spools Available**

Description

SafeCable digital linear heat detection (LHD) cable is a combination of advanced polymer and digital technologies that can detect heat anywhere along its entire length. SafeCable is also compatible with any listed addressable or conventional panel.

At the core of SafeCable is a twisted pair of extremely low resistance (.05 ohm/ft. [.164 ohms/m] of twisted cable) tri-metallic conductors, sheathed in new advanced thermal polymers. These polymers are chemically engineered to break down at specific fixed temperatures allowing the twisted conductors to make contact and initiate an alarm at the control panel without any calibration for changes in the ambient temperature. The distance locating option allows the control panel to identify and display the location, in feet or meters from the panel, where the heat source interacted with the detection cable.

The polymer used for the protective outer coating of SafeCable is chemically inert and UV protected. This allows for SafeCable to be used in an extremely wide variety of installations and hazards.



Applications

Use where other types of detection are not practical or where the location of an overheating condition must be known. SafeCable is ideal for aircraft hangars, switchgear, in-rack freezer and cooler storage, archive and warehouse storage, elevator shafts, cooling towers, conveyors, cable trays, cable spreading rooms, terminal rooms, in-cabinet, motors, pumps, generators, tunnels, bridges, parking decks and engine bays.

Maximum Listed Spacing

Temperature Rating	UL, C-UL-US	FM
155°F (68°C)	35' (10.7m)	30' (9.1m)
172°F (78°C)	35' (10.7m)	30' (9.1m)
190°F (88°C)	35' (10.7m)	30' (9.1m)
220°F (105°C)	35' (10.7m)	25' (7.6m)
365°F (105°C)	35' (10.7m)	See Note 1

Note 1: FM Approved for Special Application Use Only

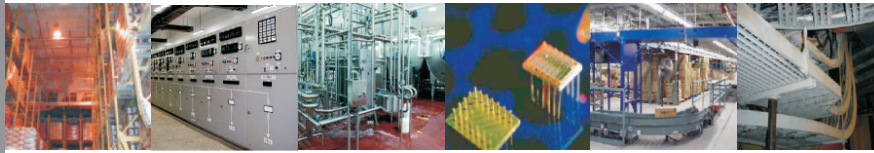
Maximum Ambient Temperatures

Maximum Ambient Install Temperature	Alarm Temp.	Part Number
Up to 113°F (45°C)	155°F (68°C)	TC155
Up to 122°F (50°C)	172°F (78°C)	TC172
Up to 158°F (70°C)	190°F (88°C)	TC190
Up to 158°F (70°C)	220°F (104°C)	TC220

Specifications - SafeCable

Diameter:	1/8" (3.2mm)
Weight:	Nominal 15 lbs./1000 ft. (6.8kg/305m)
Bend Radius:	3" (76.2mm)
Max. Voltage Rating:	30 VAC, 42 VDC
Resistance:	.05 ohms/ft. (.164 ohms/m)
Temperature Ratings (°F):	155°, 172°, 190°, 220°
Temperature Ratings (°C):	68°, 78°, 88°, 105°
Sheathing Options:	PVC: Corrosive and UV resistant Nylon: Abrasion resistant Polypropylene: Chemical resistant
Optional Guidewire:	Minimal support -15 ft (4.6m) intervals

- Any Panel
- Longest Range
- Remote Reset



Fiber Optic Technology

Fiber Optic Linear Heat Detection

Safe Fire Detection's new Fiber Optic Linear Heat Detection System, SafeFiber, utilizes the most advanced technologies to produce a product with capabilities far surpassing those of conventional fire detection systems.

SafeFiber not only has the capacity to detect fire quickly but the able can also detect multiple individual fires anywhere on entire length of the cable. As a fire event spreads, SafeFiber's enhanced durability of up to 1000°C (1832°F) enables the detection system to determine the size and direction of the fire over time while still having the ability to restore itself after a fire.

SafeFiber cables are imperishable against environmental influences, flexible and easy to install, and have the lowest power consumption. This combination of attributes keeps installation and the cost of ownership affordable.



Warehouses

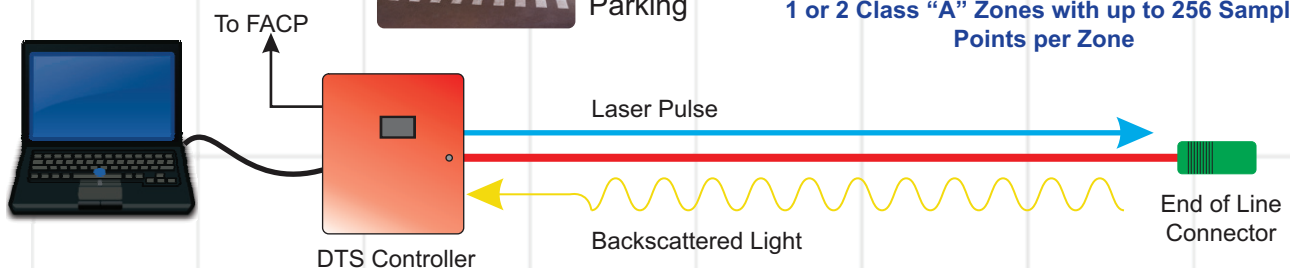
SAFE FIBER



Tunnels



Parking

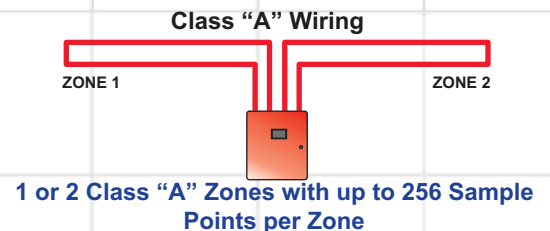
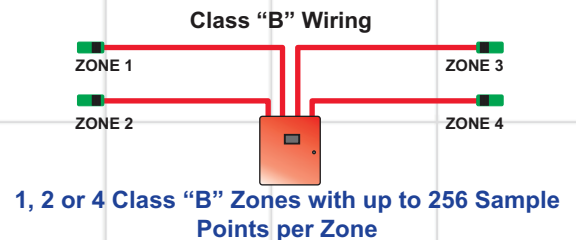


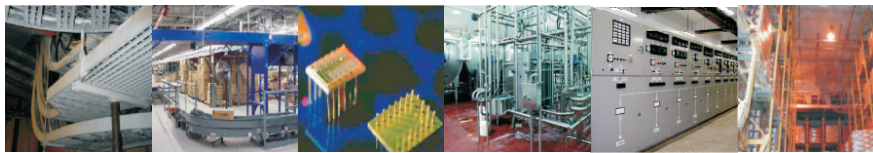
SAFE FIBER

FEATURES

- 1, 2 or 4 Zone Controllers
- Up to 10km(6.2 miles) per Zone
- 256 Sample Points Per Zone
- Detect Multiple Fires Per Zone
- Multiple Alarm Temperatures Per Zone
- Monitor and Report Temperature Across The Entire Zone
- Approved for Up To 50'S pacing
- Maintenance Free Cables

ZONING EXAMPLES



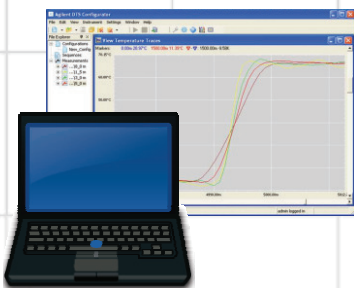


- High Durability
- Low Power Use
- Maintenance Free Cable

Fiber Optic Linear Heat

DETECTOR CONFIGURATIONS

- **SafeFiber-1k**
1,2 or 4 zones up to 3300ft. (1km) long each
Max. cable: 3300 (1km) X 4 = 13,200 ft.(4km)
- **SafeFiber-2k**
1,2 or 4 zones up to 6500ft. (2km) long each
Max. cable: 6500 (2km) X 4 = 26,000 ft.(8km)
- **SafeFiber-4k**
1,2 or 4 zones up to 13,000ft. (4km) long each
Max. cable: 13,000 (4km) X 4 = 52,000 ft. (16km)
- **SafeFiber-6k**
1,2 or 4 zones up to 19,700ft. (6km) long each
Max. cable: 19,700 (6km) X 4 = 78,800 ft. (24km)
- **SafeFiber-8k**
1 or 2 zones up to 26,000ft. (8km) long each
Max. cable: 26,000 (8km) X 2 = 52,000 ft. (16km)
- **SafeFiber-10k**
1 zone up to 33,000ft. (10km) long
Max. cable: 33,000 (10km) X 1 = 33,000 ft. (10km)



Distributed Temperature Sensing Software

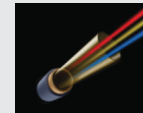
Software that networks controllers together and creates a database that gives you the ability to view the real-time and historical data for your facility.

APPLICATIONS



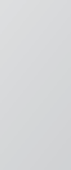
Mining
Tunnels
Cable Trays
Conveyor Belts

Freezers
Cold Storage
Floating Rooftops
Inaccessible Areas



The Technology Behind Fiber Optic

Based on the quantum mechanical RAMAN-effect and a patented code-correlation measurement technique Safe Fire Detection's SafeFiber measures an accurate temperature profile along the optical fiber over several thousand meters with measurements every 10 seconds. With an extremely high level of integration and unique optical assembly technology, SafeFiber offers you full protection combined with worry free permanent operation. All Safe Fire Detection systems are designed and proven to ensure maximum quality with the lowest failure rate in the industry.



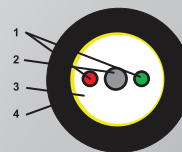
Standard Cable

- 1) Acrylate coated fibers
- 2) GRP strength member
- 3) Aramid yarn
- 4) FRNC outer sheath



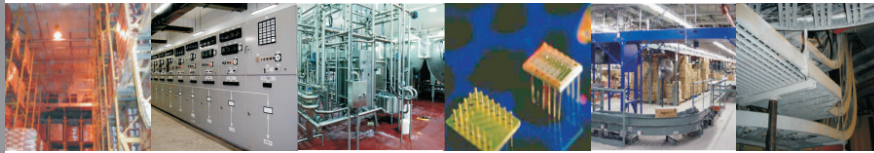
Armored Cable

- 1) Acrylate coated fibers
- 2) Gel free stainless steel tube, 316L
- 3) Stainless steel wires, 316L
- 4) FRNC outer sheath



SAFE FIBER

- Any Panel
- Addressable
- Conventional



Early Warning Linear Overheat Detection

Early Warning Linear Overheat Detection

SafeSelect is a new advanced linear overheat detection system that gives you multiple alarms and multiple temperatures all from a single cable. SafeSelect is a single advanced early warning linear overheat detection cable and interface unit designed to allow you to select from multiple alarm temperatures which can offer you earlier detection of an overheat condition. This extra time can safeguard your valuable equipment from damage.

The interface unit monitors the sensor cable whose resistance changes as a function of temperature. An abnormal change in resistance along the heat detection cable triggers a Pre-Alarm and Alarm based on the temperature you select. SafeSelect automatically adjusts to day/night and seasonal temperature changes. SafeSelect is designed to be simple and easy to install and is commissioned using a built-in self programming.

SAFE Select™

130°(54°C)
150°(64°C)
160°(72°C)

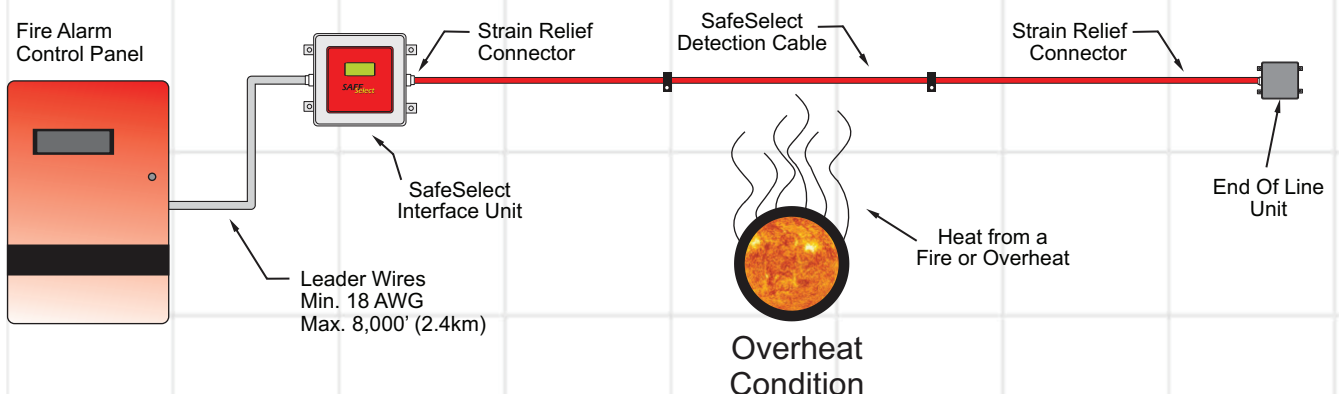


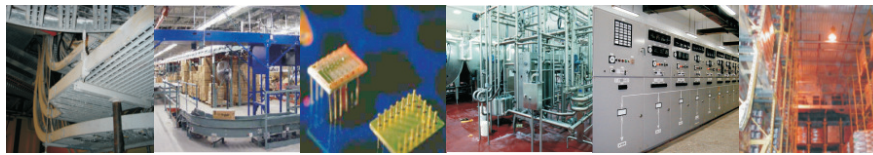
175°(79°C)
185°(86°C)
212°(100°C)

One Cable
"You" Select The Temperature

APPLICATIONS

- Freezers
- Bearings
- Conveyors
- Escalators
- Cable Trays
- Cooling Towers
- Floating Rooftops





- Any Panel
- Addressable
- Conventional

Early Warning Linear Overheat Detection

FEATURES **SAFE** *Select*

- Selectable Alarm Temperature
- Push Button Programming
- Pre-Alarm and Alarm Levels
- Self-Restorable
- Early Warning
- Compatible with Any Panel
- Up to 1640ft. (500m) per Zone

■ Activation Temperatures

Maximum Ambient Temperature	Available Action Temperature
Up to 68°F (30°C)	130°F (54°C)
Up to 113°F (47°C)	150°F (64°C), 160°F (71°C) Prealarm, 160°F (72°C) Alarm, 175°F (79°C)
Up to 158°F (69°C)	185°F (86°C) Alarm, 200°F (93°C) Prealarm, 212°F (100°C) Alarm

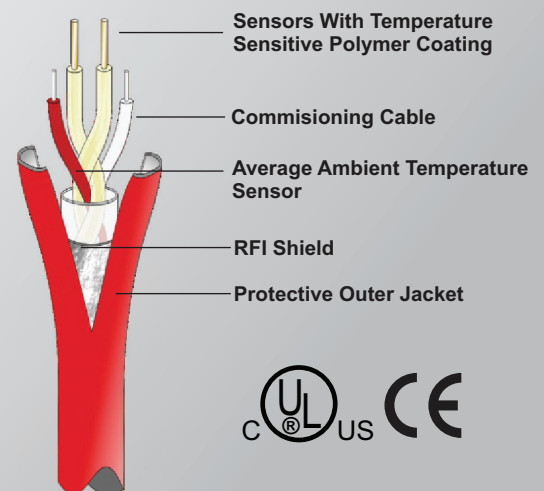
■ Specifications

Construction:	Overall Insulated, 4-Core
Insulation:	1kV Tested Protective Outer Coat
Additional Insulation Options:	NXT or Polypropylene
Approvals:	UL, CE, RoHS Compliant
Maximum Zone Length:	1,640ft (500m)
Wire Overall Diameter:	0.177" ± 0.005" (4.50mm ± 0.12mm)
NXT/Polypropylene Coated Diameter:	0.206" ± 0.005" (5.25mm ± 0.12mm)
Maximum Bend Radius:	2" (50mm)
Ambient Temperature Range:	-40°F - +194°F (-40°C - +90°C)
Restorable After Fire Event:	Up to 275°F (125°C)
Voltage Rating:	30Vac, 42Vdc

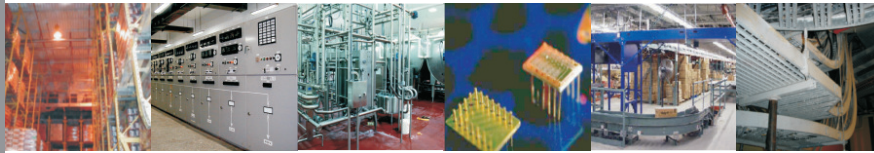


The Technology Behind Early Warning Linear Overheat Detection

SafeSelect Early Warning Linear Overheat Detection technology is based on a pair of sensors coated in a heat sensitive polymer whose resistance changes as a function of temperature. A commissioning cable and average ambient temperature sensor wire are also twisted with the two temperature conductors. A foil shield and protective outer coating is added for additional protection.



- Any Panel
- Addressable
- Conventional



Linear Rate of Temperature Change Detection

Rate Of Change Linear Detection

Safe R.O.C. is the newest offering in our family of linear detection cables. R.O.C. is a new linear rate-of-change detection system designed specifically to offer a highly sensitive and reliable solution to monitoring rapid increases and/or decreases in temperature over a short period of time.

Safe R.O.C. now gives you the ability to monitor for leaks in liquefied gas storage cylinders (including LNG storage tanks and pipelines) as well as fires in applications requiring protection against weather, internal condensation, moisture and explosive atmospheres. Safe R.O.C. consists of an ultra-sensitive detection cable and intrinsically safe interface module housed in a tough polycarbonate enclosure. A rapid drop in temperature, for example caused by a leak of liquefied natural gas onto the sensor cable will trigger an alarm. Equally, a rapid rise in temperature, for example caused by the ignition of a gas will trigger an alarm.



SAFE R.O.C.

Alarm
68°F(20°C)
Min



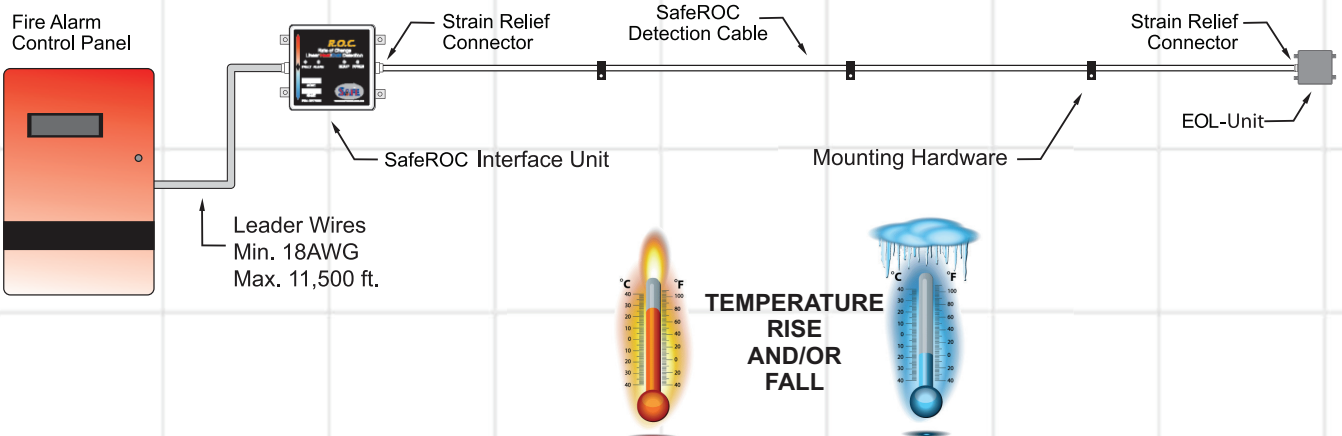
Alarm
68°F(20°C)
Min

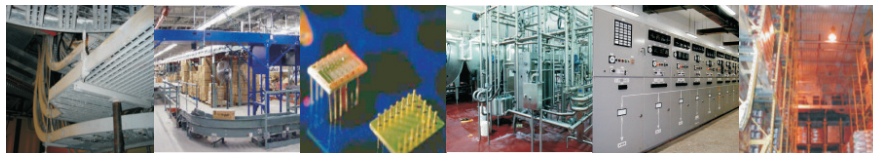


One Cable
Linear Heat AND Cold Detection

APPLICATIONS

- Marine Applications
- Pipelines
- Conveyors
- Off-Shore Applications
- Compressed Cylinders
- Floating Rooftops
- LNG Storage





- Any Panel
- Addressable
- Conventional

Freezer Fire Detection

FEATURES

SAFE
R.O.C.

- Can Detect Increases And/Or Decreases In Temperature
- Automatic Calibration for Day/Night and Seasonal Changes
- Up to 500ft. Per Zone
- Easy Installation
- Optional NXT Coating for Harsh Environments
- Protective Metal Braid For Added Durability



The Technology Behind Linear Rate Of Change Detection

The SafeROC Rate of Change Detector uses the latest digital signal processing techniques to continuously monitor the entire length of sensor cable. A rapid change in temperature anywhere along the cable will trigger an alarm. The interface unit continuously monitors ambient temperature, dynamically adjusting the threshold levels to maintain the highest sensitivity and prevent false alarms. An alarm is triggered when a portion of the cable suddenly changes in temperature. For a greater change in temperature, a smaller portion of the cable is required to trigger an alarm. Typically, a 45°C (113°F) temperature change is required for 2% of the zone length to trigger an alarm.



4 Spirally Wound Element Wires Which Have A High Temperature Coefficient of Resistance

Protective Metal Braid

PVC Protective Outer Jacket



Specifications

Enclosure Rating:	IP66 Polycarbonate/Polystyrene
Operating Temperature Range:	-4°F to +122°F (-20°C to +50°C)
Outer Jacket:	High Temperature White PVC
Approvals:	ATEX, CE
Overall Diameter:	0.200" +/- 0.007" (5.08mm +/- 0.2mm)
RFI Shielding:	Braid Shielding
Cores:	4 Temperature Sensitive Cores Coated With High Temperature PVC.
Minimum Continuous Length:	33' (10m)
Maximum Continuous Length:	500' (150m)
Current Draw, Normal:	<35mA
Current Draw, Alarm:	<50mA



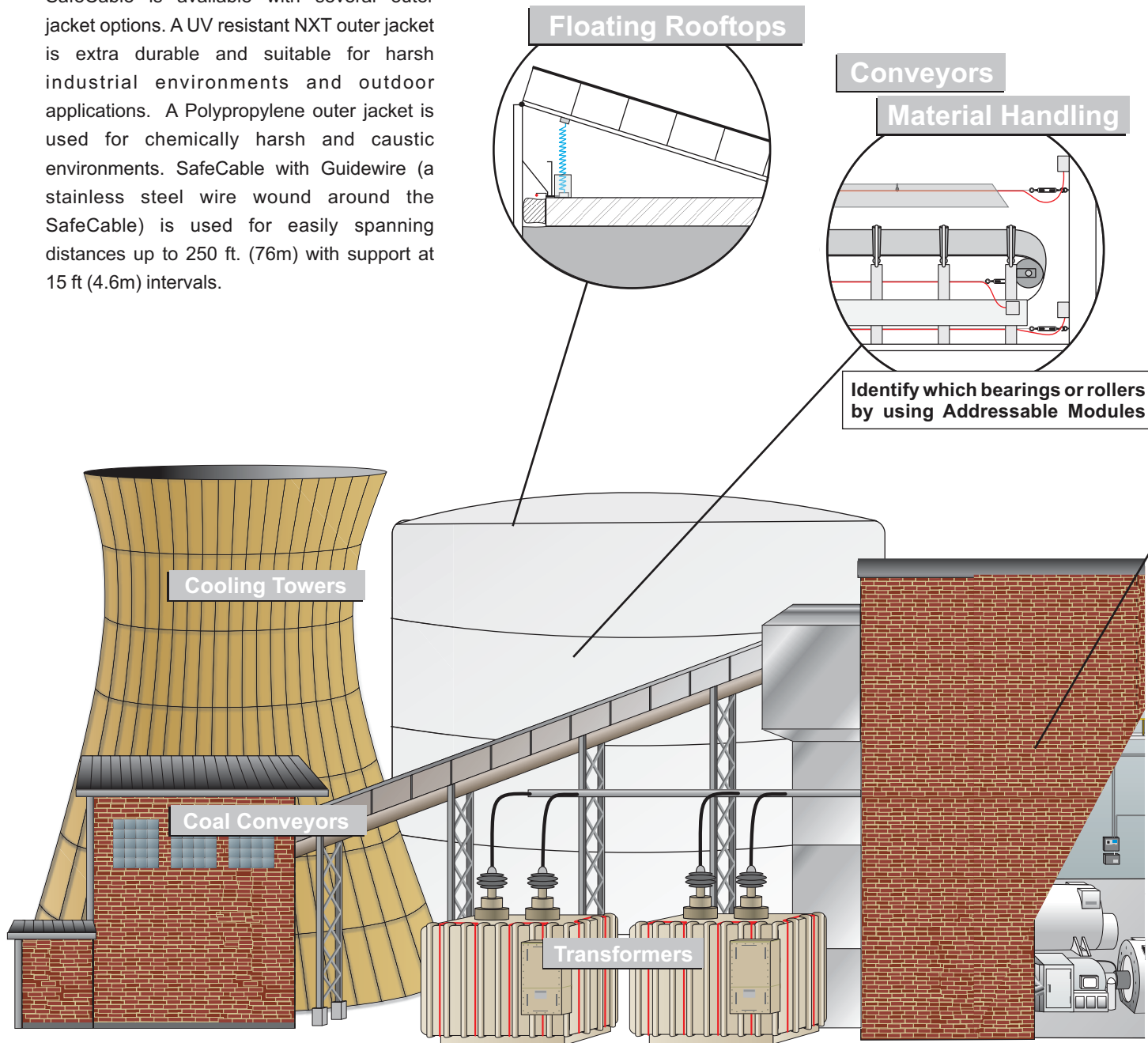
- Industrial
- Commercial
- Utilities



The Industrial Solution

Industrial Linear Detection Solutions

When used for special hazard applications, SafeCable is available with several outer jacket options. A UV resistant NXT outer jacket is extra durable and suitable for harsh industrial environments and outdoor applications. A Polypropylene outer jacket is used for chemically harsh and caustic environments. SafeCable with Guidewire (a stainless steel wire wound around the SafeCable) is used for easily spanning distances up to 250 ft. (76m) with support at 15 ft (4.6m) intervals.



Aircraft Hangars
Baggage Handling
Bridges and Piers

Bulk Storage
Cable Trays
Computer Rooms

Conveyors
Cooling Towers
Elevator Shafts

Engine Compartments
Escalators
Fuel Storage Tanks



- Any Panel
- Existing Panels
- New Panels

Power Plants, Factories, and Industrial Sites

SAFE
Cable[™]

Standard Linear Heat Detection

SAFE
Select[™]

Early Warning Linear Overheat Detection

SAFE
FIBER

Linear Fiber Optic Detection

SAFE
R.O.C.

Linear Rate of Change Detection

Cable Trays

Cable Tunnels

Spreading Rooms

Pipe Tunnels

Freezer Storage

Warehousing

Archive Storage

Coolers

LNG Storage

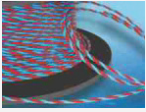
Tunnels

Garages
HGV Engine Bays
Moving Sidewalks

Pipelines
Parking Decks
Off Shore Platforms

Rack Storage
Trash Rooms
Train Station Platforms

Tunnels
Wet Benches
Valves and Motors



Linear Water Leak Detection

DEFINITION:

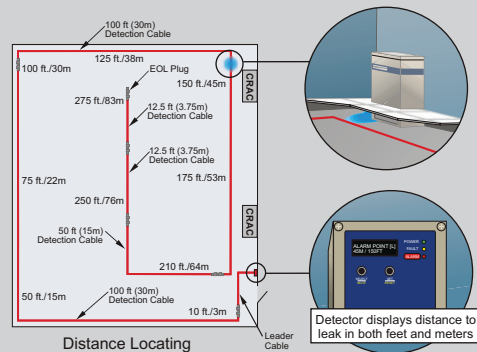
lin•e•ar wa•ter leak de•tec•tor

/ˈlɪniər ˈwɑːtər lɪk dɪˈtektər/

Noun

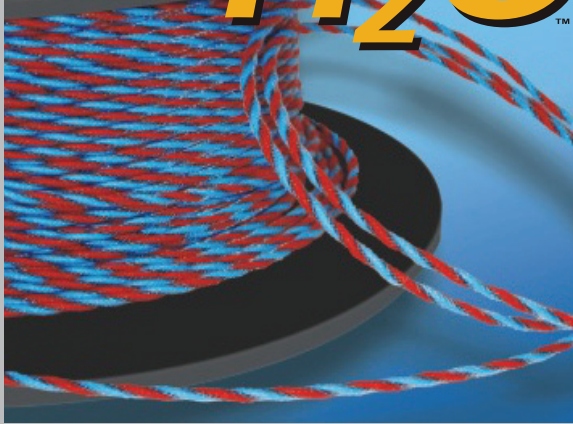
1. A flexible linear cable that when it makes contact with any water based fluid anywhere along its entire length can warn when a leak is present



EXAMPLE:




ProH2O is a flexible linear cable placed around a specified area or hazard that, when contact is made with any water-based liquid, sends a signal back to any monitoring panel indicating that a leak is present. ProH2O Linear Water Leak Detection uses new advanced time-domain reflectometry to detect a leak. A short pulse (less than 1 millionth of a second) is sent down the cable. When water is detected, a return pulse is generated (effectively the pulse sent out by the controller “bounces” off the leak) to send back an alarm to any monitoring panel.

PRO
H₂OTM





ISO 9001
Registered

Addressable Linear Water Leak Detection



Linear Water Leak Detector

- Intelligent
- Self Restoring
- Locates the Leak



Distance Locating

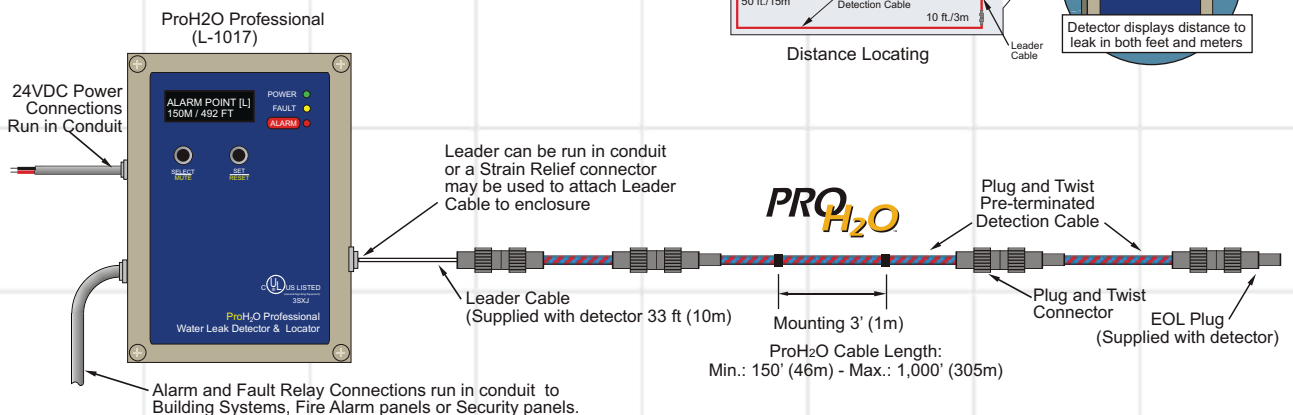
Distance Locating Water Leak Detection

The ProH2O Professional Distance Locating Linear Water Leak Detector can tell you where it has detected the leak from any water based product. No special panels required. The ProH2O Professional offers larger systems and can display the location on the detection cable where the water leak was detected making it easy to find the source.

The new ProH2O "Plug and Play" system consists of the Detector, 33 ft (10m) Leader Cable, EOL (End of Line) termination plug and any combination of water leak detection cables up to 1000ft/300m Max. The cables come in three easy to use "Plug and Twist" lengths, 12.5 ft (3.75m), 50 ft (15m) or 100 ft (30m). Just use the supplied leader cable and run it to the beginning of your detection zone and then run a combination of detection cables that best meets your needs. ProH2O leak detection cable can be run on the floor utilizing our adhesive backed easy to use "Quick Clips" near sensitive equipment, low areas or anywhere water may enter the environment.

FEATURES

- Can detect and display a leak anywhere along the length of cable
- LCD Display for easy locating and system operation
- Self Restoring plug and Twist Cables
- Stand alone or with any Building or Fire Alarm system
- Up to 1000 linear feet (300m) per detector
- 4-20mA and 0-10VDC analog outputs
- Alarm and Fault relays



PROH₂O

UL
C US
CE
ISO 9001
Registered



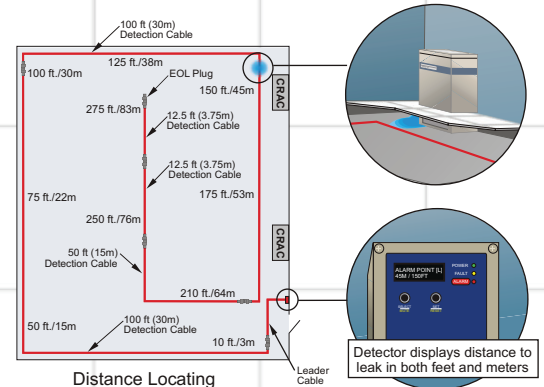
APPLICATIONS

Basements

Any Water Based Process or Application

Computer Room Subfloors

TYPICAL INSTALLATION





- Easy to Install
- Easy to Use
- Cost Effective

Modular

Modular Water Leak Detection

The ProH2O Water Leak Detector Module is the first linear water leak detector to incorporate both modular design and linear cable detection in a single unit. This revolutionary modular design can detect any water based product and offers a low cost alternative for small areas or directly on equipment. Use it by itself or just add a module to your new or existing security or fire alarm control/releasing panel and then simply run the leak detection cable.

The new ProH2O "Plug and Play" design consists of the Module, EOL (End of Line) termination Plug and any combination of water leak detection cables up to 100ft/30m Max. The cables come in three easy to use "Plug and Twist" lengths, 12 ft (3.5m), 50 ft (15m) or 100 ft (30m) just use the combination that best meets your needs. ProH2O leak detection cable can be run on the floor utilizing our adhesive backed easy to use "Quick Clips" near sensitive equipment, in low areas or anywhere water may enter the environment. It can also be attached directly to sprinkler or process piping with our double loop ties to monitor for leaky pipes. The ProH2O Water Leak Detector Module operates on 12 VDC or 24VDC and has both alarm and fault connections to provide an easy interface to your Build System, Fire Alarm or Security System.



PROH₂O

APPLICATIONS

Water Cooled CRAC Units

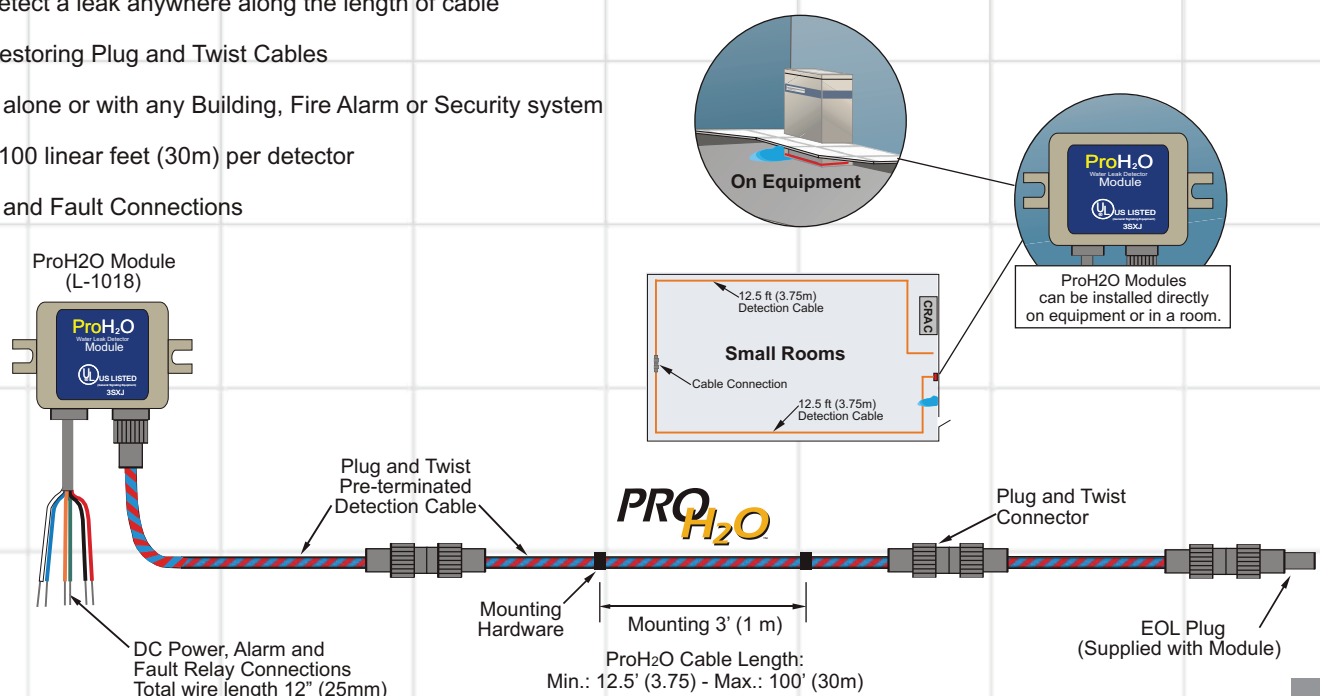
Sprinkler Pipes over Sensitive Equipment

Individual Equipment

FEATURES

- Can detect a leak anywhere along the length of cable
- Self Restoring Plug and Twist Cables
- Stand alone or with any Building, Fire Alarm or Security system
- Up to 100 linear feet (30m) per detector
- Alarm and Fault Connections

TYPICAL INSTALLATION





**5915 Stockbridge Dr.
Monroe, NC 28110
Tel:704-821-7920**

www.safefiredetection.com

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Pub. #: M-1010