SAFE
FIRE DETECTION, INC.

SAFE LHD Cable

Addressable
Linear Heat
Detection

PRO Series

Addressable
Air Sampling
Fire Detection

PRO Locator

The *Only*
Portable
Air Sampling
Detector

PRO H_2O

Addressable
Linear Leak
Detection

TRAINING Modules

Product Training
in Your Office
on Your Schedule

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www.safefiredetection.com

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NFPA MEMBER

Pub. #: M-1200 v1.5

ADDRESSABLE

SAFE LHD Cable™

UL
C UL US
FM APPROVED
CE
CSFM
MEA
ISO 9001

Safecable Linear Heat Detection

SAFE
FIRE DETECTION, INC.

LINEAR HEAT DETECTION

Not Just Products... Customer Focused Solutions

SAFE FIRE DETECTION, INC.

LHD INNOVATORS

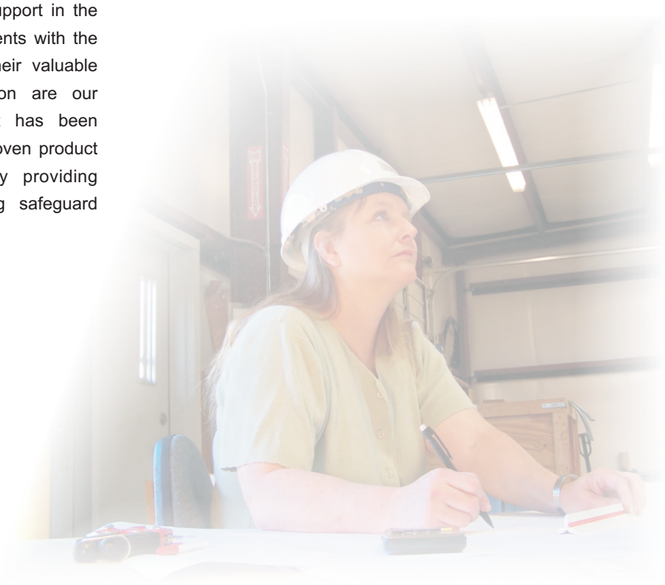
Solutions

SAFE Fire Detection, Inc. is the innovator in providing new state of the art detection products, protecting companies from loss due to fire, smoke, heat, and water. Our product line, SafeCable, has revolutionized linear heat detection (LHD). Linear heat detection is now Addressable and able to work with today's modern fire alarm and suppression panels. There are no more expensive special panels to buy, or service. This new approach will save you thousands on every installation. ***SAFE*** has built its reputation on outstanding engineered detection solutions. We combine extensive industry knowledge with solid technical expertise to help our clients safeguard their assets.

BEST SUPPORT ... IN THE *Industry*

Support

SAFE Fire Detection, Inc. 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 35 years of proven product reliability, dedication, and by providing unparalleled detection, helping safeguard facilities around the world.



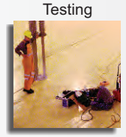
Turn-Key Solutions

Solutions

Engineered System Design, Installation and Commissioning

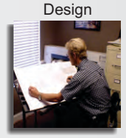
SAFE Fire can provide a Turn-Key fire detection solution to power generating plants. This ensures the system, including its design, installation, and commissioning meet the requirements and expectations of a facility and its engineers.

Testing



Evaluation

Design



Installation

Commissioning

Training

CD Based Training Programs

Comprehensive Training

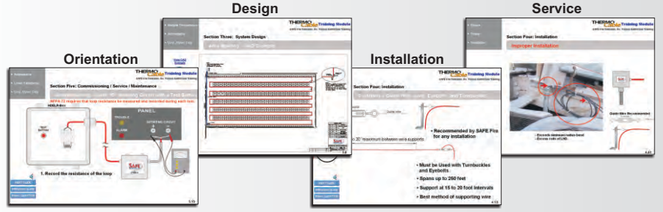
The CD based technical training program provides comprehensive training and may be used for future reference. Each narrated CD training module discusses system components, design, installation, service and maintenance.

Design

Orientation

Installation

Service



- Learn proper design techniques
- Design applications examples
- CAD examples
- CAD components
- Installation photos
- Completely narrated
- Simply install the training CD
- Windows® compatible
- Certificate upon completion

Specifications and Information

Engineering Specifications and General Information via our website

Construction Specifications Institute™ (CSI) formatted engineering specifications in an editable Word® document, and other general information are available by downloading from our website or by calling our office at 704-821-7920.

www.SafeFireDetection.com

- **SafeCable Application Guide**

  Sales and Technical information in electronic (pdf)

- **Cut Sheets**
  Technical Data Sheets in electronic (pdf) format for easy emailing, viewing, and printing

- **Engineering Specifications**
  Editable specifications in Word® format

Courtesy Continuing Education Modules Available For Consulting Engineering Firms

Installation Accessories

Mounting

Double Loop Cable Ties
- Black Nylon 6.6 rated from -40° to 185°F (-40° to 85°C)
- Fits 3/4" - 2" (2cm - 5cm) sprinkler pipe.

Double Loop Cable Ties
- Black Nylon 6.6 rated from -40° to 185°F (-40° to 85°C)
- Fits 2½" - 3½" (6cm - 8.9cm) sprinkler pipe.

Large Single Loop Cable Tie
- Black Nylon 6.6 rated from -40° to 185°F (-40° to 85°C)
- Fits 4" to 6" (10cm - 15cm) sprinkler pipe.
- Support SafeCable using Small Single Loop Cable Tie fastened to Large Single Loop Tie.

Small Single Loop Cable Tie
- Black Nylon 6.6 rated from -40° to 185°F (-40° to 85°C)
- Use with Cable Tie Mount or Larger Single Loop Cable Tie.

Cable Tie Mount
- For environments between 0° to 180°F (-17.8° to 82°C)
- Fasten cable to mount using Small Single Loop Cable Tie.

Cable Tie Mount Adhesive
- Use to secure Cable Tie Mount to surface.

Cable Clip
- Black Nylon 6.6 rated from -40° to 185°F (-40° to 85°C)
- 3/16" (4.8mm) mounting hole.

Cable Clip
- Zinc plated steel cable clip.
- 1/4" (6.4mm) mounting hole

Beam Clamp, Spring Steel
- For material thickness up to ½" (12.7mm)
- *Shown with Nylon Cable Clip and Push Pin.*

Beam Clamp, Zinc Plated Steel
- For material thickness up to 7/8" (22.2mm)
- *Shown with Nylon Cable Clip and Push Pin.*

L-Bracket, Zinc Plated Steel
- For suspending detection cable on or around equipment.
- *Use with Nylon Cable Clip or Zinc Plated Cable Clip secured with Push Pin.*

Cable Tray Mounting Clip, Zinc Plated Steel
- 1/16" to 1/4" (1.6 - 6.4mm) material thickness

Cable Tray Mounting Clips
- 1/16" to 5/32" (1.6 - 4mm) material thickness
- 5/32" to 1/4" (4 - 6.4mm) material thickness
- *Use with Nylon or Zinc Cable Clip and Push Pin as shown.*

Universal Mounting Clips
- 1/8" to 1/4" (3.2 - 6.4mm) material thickness
- 5/16" to ½" (7.9 - 12.7mm) material thickness
- *Use with Nylon or Zinc Cable Clip and Push Pin as shown.*

Push Pin
- Black Nylon 6.6 rated from -40° to 185°F (-40° to 85°C)
- Secures Cable Clip to Beam Clamps, Cable Tray Mounting Clips, and L-brackets through 3/16" (4.8mm) mounting hole.

Threaded Eyebolt - Zinc plated or Stainless Steel
- Use for suspending SafeCable with or without Guidewire.
- Includes one 1/4"-20 (6.4mm) nut.

Locknut - Zinc plated or Stainless Steel
- For securing Eyebolts if needed. 1/4" (6.4mm)

Rubber Grommet
- Black Rubber Grommet inserted in Eyebolt to insulate and prevent damage to SafeCable

Turnbuckle - Zinc plated or Stainless Steel
- Use to fasten and tighten supporting Guidewire attached to SafeCable for long suspended lengths.

Connecting

J/ELR-Box - Standard
NEMA 4X Standard Junction/ELR Box. Requires Screw Terminal and Strain Relief Connector for installation.
Dim.: 4" x 4" x 2" (93.5mm x 93.5mm x 51mm)

HDJ/ELR-Box - Heavy Duty
NEMA 4X Heavy Duty Junction/ELR Box. Requires Screw Terminal and Strain Relief Connector for installation.
Dim.: 6" x 6" x 4" (162.6mm x 162.6mm x 102mm)

Cable Strain Relief Connector
Use to seal and fasten SafeCable when entering or exiting a J/ELR Box or HDJ/ELR Box. Helps prevent corrosion from moisture and dirt build up on connections. Available in both Zinc plated and Nylon.

Screw Terminal
Two point Screw Terminal for all SafeCable splices and connections in J/ELR Boxes and HDJ/ELR Boxes.

Splicing

Splicing Tape
Use with Screw Terminal for all indoor SafeCable splices when not using a Junction Box.

Low Temperature Splicing Tape
Use with Screw Terminal for indoor splicing in low temperature applications when not using Junction Box.

Sealant Tape
For indoor splices in addition to Splicing Tape for low temperature applications when not using Junction Box.

To ensure a proper installation and years of continuous services, only SAFE Fire Detection, Inc. approved mounting and connection accessories must be used.

THE NEXT GENERATION

For over 50 years, linear heat detection has been the choice for industrial applications around the world. It has provided the industry with a tried and true method of heat detection for conventional fire alarm applications. Today's modern facilities require advanced fire detection technologies that are both addressable and programmable. Our engineers took the concept of conventional linear heat detection and incorporated the latest in thermal polymers and advanced alloys to produce a product that works directly with *your* panel. There is no need to buy a special panel just to monitor your linear heat detection.

These advancements make SafeCable the best choice for use with any approved addressable or conventional panel in any commercial or industrial environment.

SAFE LHD Cable™

Better

- Now for Use on *ANY* Addressable Panel
  - Just Add an Addressable Contact Monitor Module
    - Compatible with *ANY* Conventional Fire Alarm Panel

Farther

- Up to 10,000 Linear Feet (3,000m) of SafeCable per Zone
  - Therefore Tested up to 10,000 Linear Feet (3,000m)
    - Longer Spool Lengths Available

Lower Cost

- Lower Material Costs
  - Less Installation Time
    - No Expensive Linear Heat Detection Panels to Buy and Maintain

- Nylon
- Polypropylene
- Guidewire

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

- Any Panel
- Existing Panels
- New Panels

Products

WHY SafeCable?

SafeCable Linear Heat Detection (LHD), 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.

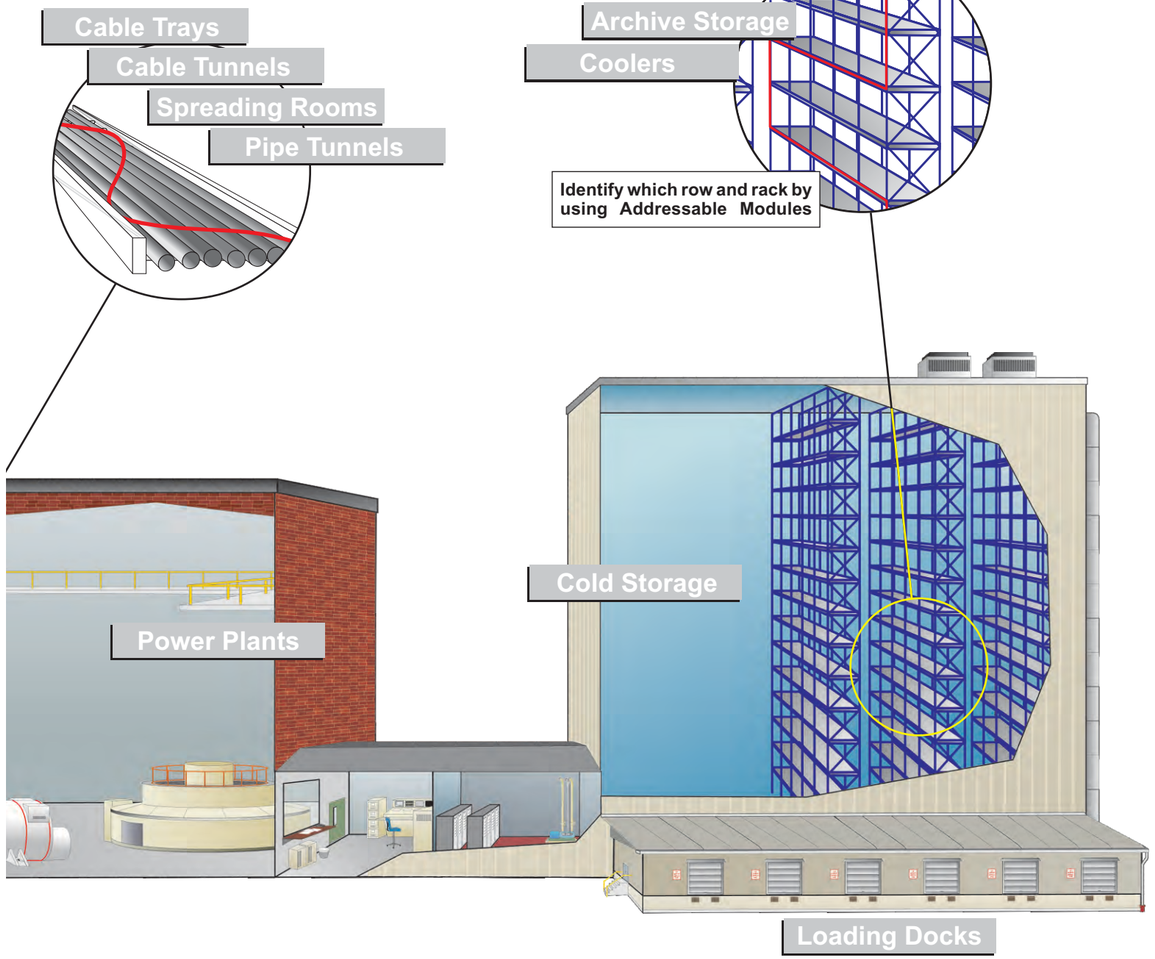
Detection Temperatures:
155°F (68°C)
172°F (78°C)
190°F (88°C)
220°F (105°C)
365°F (178°C)

CSFM

Registered ISO 9001

Distance Locating

The Distance Locating option, available for SAFE Fire Detection's Linear Heat Detection, allows you to identify where the overheating condition is occurring anywhere along the entire length of detection cable in a particular zone. Distance is displayed in both feet and meters. Part Number: ADPL-Z1



Garages
HGV Engine Bays
Moving Sidewalks
Off Shore Platforms
Parking Decks
Pipelines
Rack Storage
Train Station Platforms
Trash Rooms
Tunnels
Valves and Motors
Wet Benches

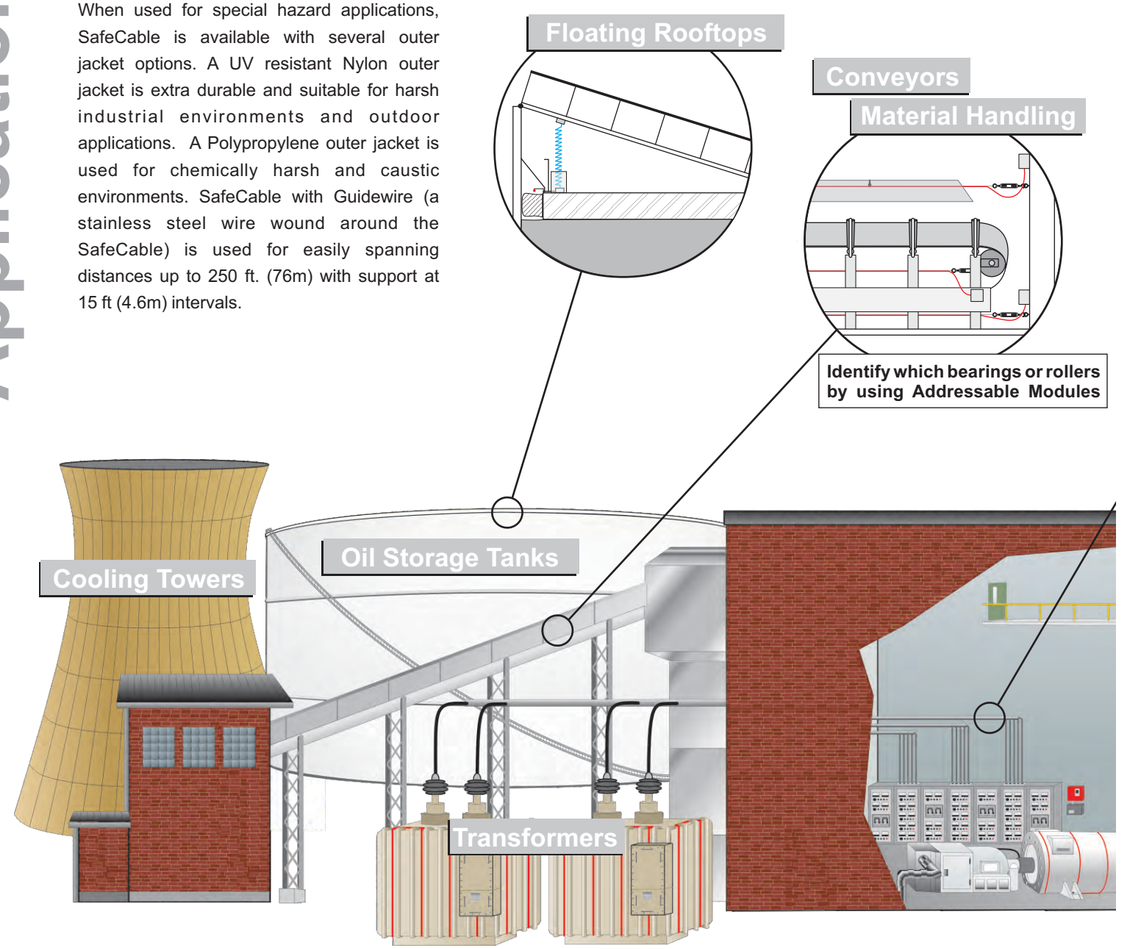
Applications

- Industrial
- Commercial
- Utilities

Flexibility to Adapt to Your Environment

SPECIAL HAZARDS

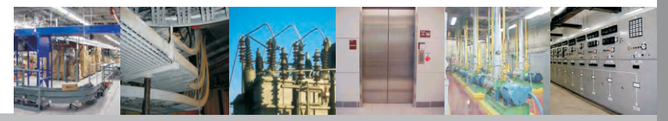
When used for special hazard applications, SafeCable is available with several outer jacket options. A UV resistant Nylon outer jacket is extra durable and suitable for harsh industrial environments and outdoor applications. A Polypropylene outer jacket is used for chemically harsh and caustic environments. 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

System Features

- Longer Runs
- Less Resistance
- Lower Cost



Only .05 ohms/ft Resistance per Twisted Pair

SPACING AND TEMPERATURE

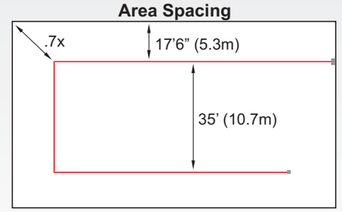
SafeCable is listed for spacing up to 35 ft. (10.7m) between parallel runs, half the listed spacing from sidewalls, and .7 times the listed spacing from corners per NFPA 72. For installations 30 ft. (9.1m) or above, half the listed spacing is

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)

Area Spacing



SAFE LHD Cable™

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 and Supported at 15' (4.6m) Intervals
- **Distance Locating** (Optional) - May be Used with Any Temperature SafeCable

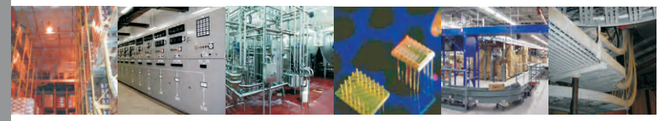
SafeCable Options

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

Nylon - UV protected for outdoor applications and extra durable for harsh industrial environments.

Polypropylene - For chemically harsh and caustic environments such as wet benches.

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



HOW DOES IT WORK?

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 3 to 5 ft. (1 - 1.5m) 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 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

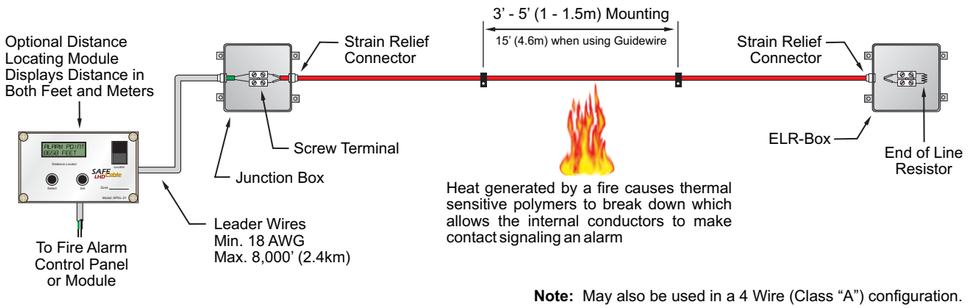
Tri-Metallic Core:
- Steel - Provides Tensile Strength
- Copper - Increases Conductivity
- Tin - Resists Corrosion

Thermal Reactant Sheathing:
- Advanced Polymers Provide Temperature Specific Activation

PVC Outer Covering:
- Chemical Resistant
- UV Resistant
- Approved for Outdoor Use

Wire:
- Only 1/8” (3.2mm) Diameter
- Flexible for Easy Installation
- Continuous Cable Lengths up to 3,000 ft. (915m)

Typical SafeCable LHD System:

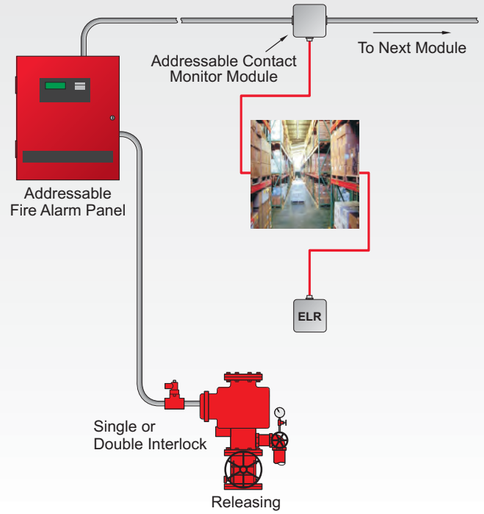


Note: May also be used in a 4 Wire (Class “A”) configuration.

ADDRESSABLE SYSTEM CONFIGURATION

Your addressable fire alarm system has many life safety and economic advantages over older style conventional systems. Addressable contact monitor modules each have a unique address which can identify the zone in alarm. A Distance Locating Module may also be used to pin-point the exact location of an alarm, or trouble condition, along the entire length of the detection cable.

By incorporating new sensitive thermal polymers and advanced alloys, our engineers were able to reinvent traditional conventional linear heat detection. The end result is a new sensitive and low impedance detection cable compatible with any addressable panel or module. Eliminated was the need to buy a special panel just to monitor your linear heat detection.



CONVENTIONAL SYSTEM CONFIGURATION

SafeCable is a sensitive and low impedance detection cable compatible with any new or existing conventional fire alarm panel. Simply attach SafeCable directly to the zone connections located in the FACP, or run leader wires to a Junction Box located at the beginning of each zone. SafeCable can be used for repairing, replacing, or upgrading any existing system which are wired in either 4 wire (Class “A”) or 2 wire (Class “B”) configurations.

SAFE has eliminated the need for special proprietary panels, now any approved panel can be used.