



***<https://safefiredetection.com>***

# AGENDA & SPEAKER

- *INTRODUCTION TO LHD*  
*Technical review*
- *HAZARD ANALYSIS*
- *APPLICATIONS*
- *APPLICABLE CODES*
- *SAFE WEBSITE AND KNOWLEDGE LIBRARY*  
*Online training*



## **Jeff Wesson**

Sales Manager

[jeffw@safefiredetection.com](mailto:jeffw@safefiredetection.com)

25 years of Industry experience

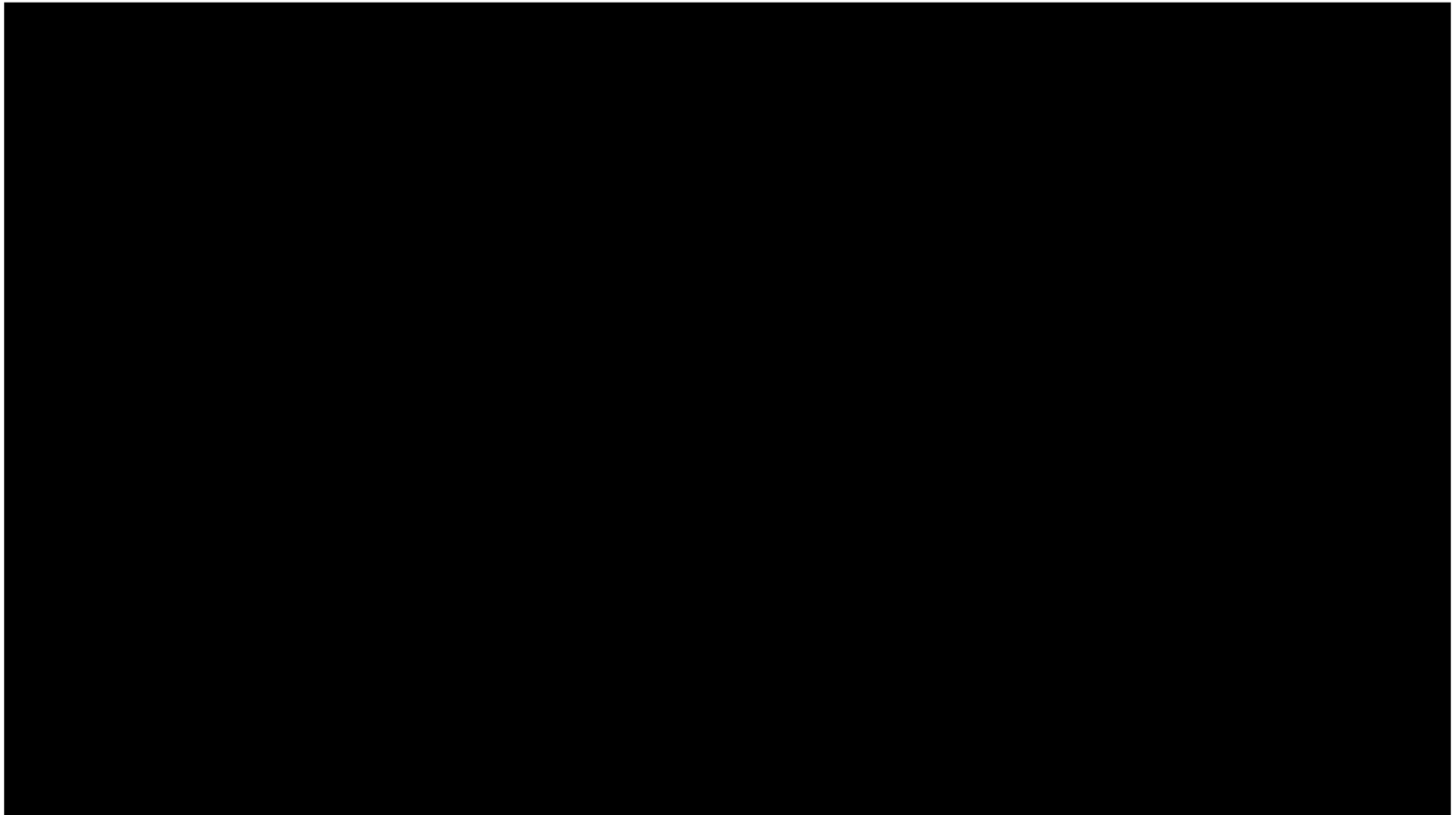
Member of:

NFPA, SFPE, NAFED, NSC

Former Airborne Ranger & Special  
Ops Medic

# LINEAR HEAT DETECTION

# LHD Sample System



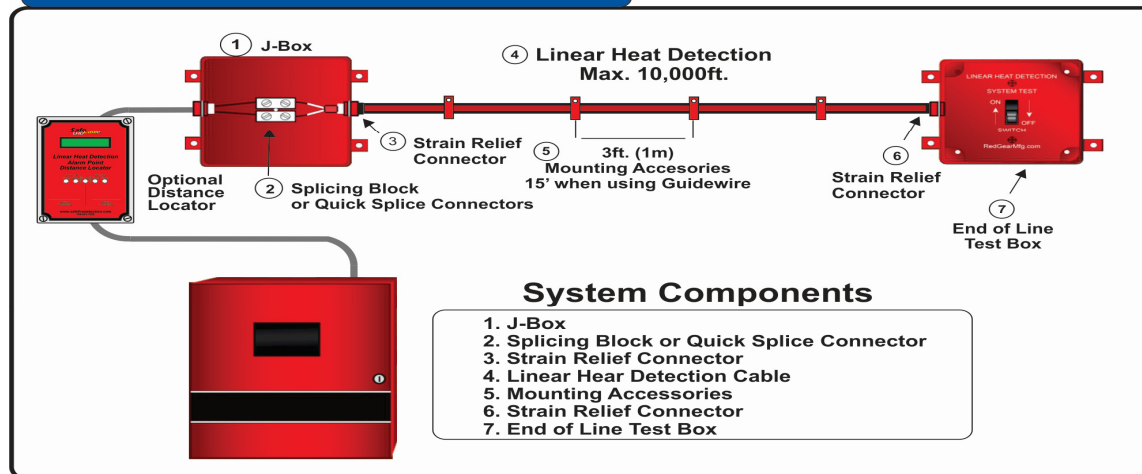
- Any Panel
- Addressable
- Conventional



Addressable / Conventional Linear Heat Detection

# SAFE LHD Cable™

## LHD SYSTEM EXAMPLE



## Linear Heat Detection





- Longer Runs
- Less Resistance
- Lower cost

Up to 10,000 Linear Feet per Zone

## WHY SafeCable?

### SAFE Cable Features and Benefits

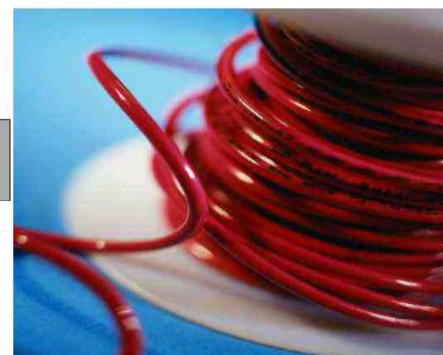
#### Multiple Outer Coverings Available for Specific Hazards

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

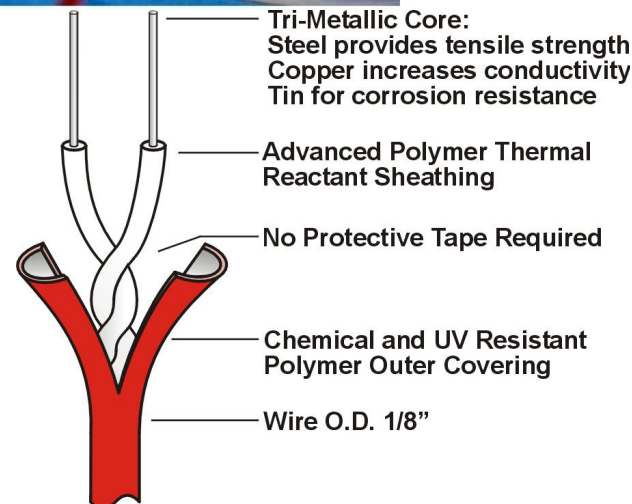
**Polypropylene** – For chemically harsh and caustic environments such as wet benches.

**GuideWire** – For spanning distances up to 250 ft. (76m) with supports every 15 ft. (4.6m).

WE ARE COMPATIBLE WITH ANY FACP



155°F (68°C), 172°F(78°C),  
190°F(88°C), 220°F(105°C)  
365°F( 185°C), 455°F( 235°C)





- Longer Runs
- Less Resistance
- Lower cost

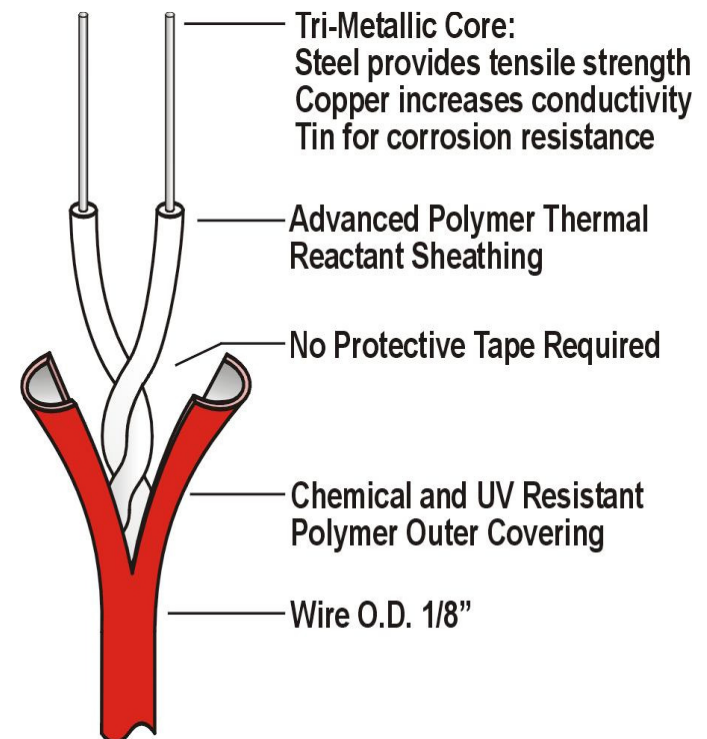
Only .05 ohms/ft resistance per Twisted Pair

## WHY SafeCable?

### SAFE Cable<sup>TM</sup> Features and Benefits

Our LHD cable is a combination of advanced polymer and digital technologies that can detect heat anywhere along its entire length.

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





- Longer Runs
- Less Resistance
- Lower cost

NFPA 72 17.6.2.1 Classification

17.6.3 Location and Spacing

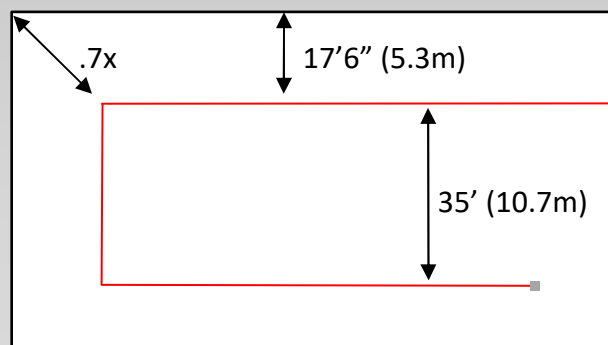
## SPACING AND TEMPERATURE

# SAFE LHD Cable™

### 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 (185°C)	35' (10.7m)	25' (7.6m)

### Area Spacing

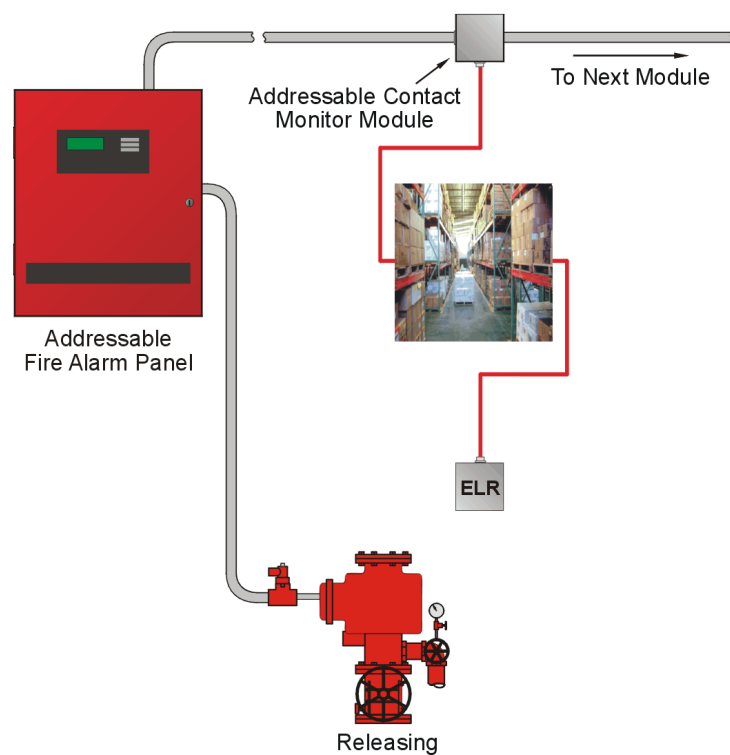


- Any Panel
- Addressable
- Conventional

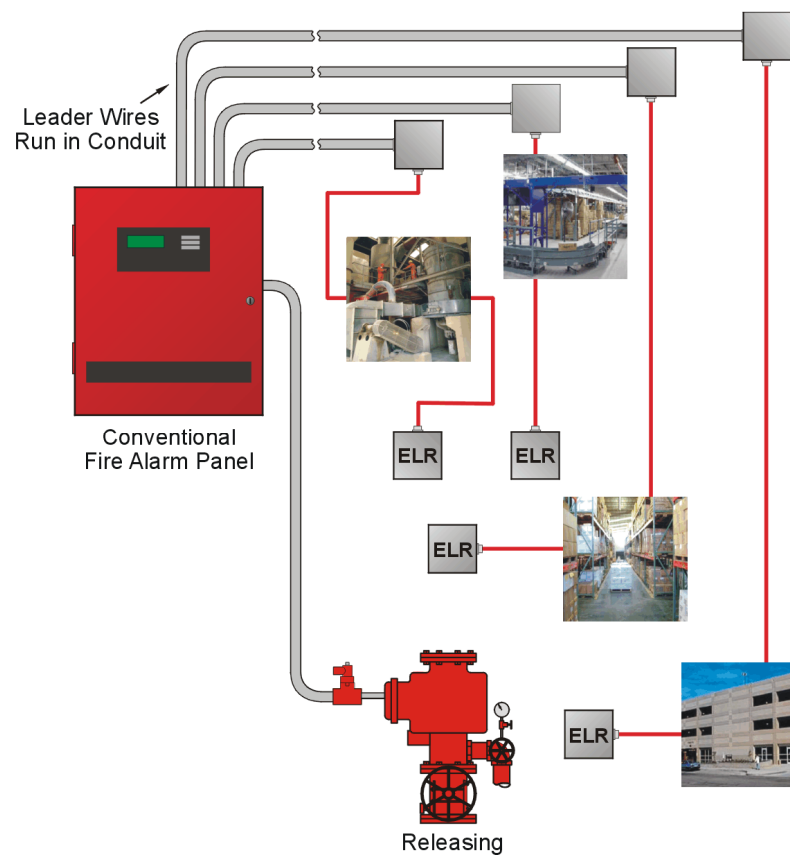


## Typical System Configurations

### ADDRESSABLE SYSTEM CONFIGURATION



### CONVENTIONAL SYSTEM CONFIGURATION



# HAZARD ANALYSIS

## Need to know ?

- 1) *What are you protecting*
- 2) *Ambient Temperature – extremes*
- 3) *environmental conditions ?*  
*acids, solvents, hydrocarbons, dust, oil, water*
- 4) *Inside or Outdoor application*
- 5) *Is it a Classified Hazard*
- 6) *Dimensions*
- 7) *Construction, what are you fastening to?*
- 8) *Other Systems – pre-action, clean agent*



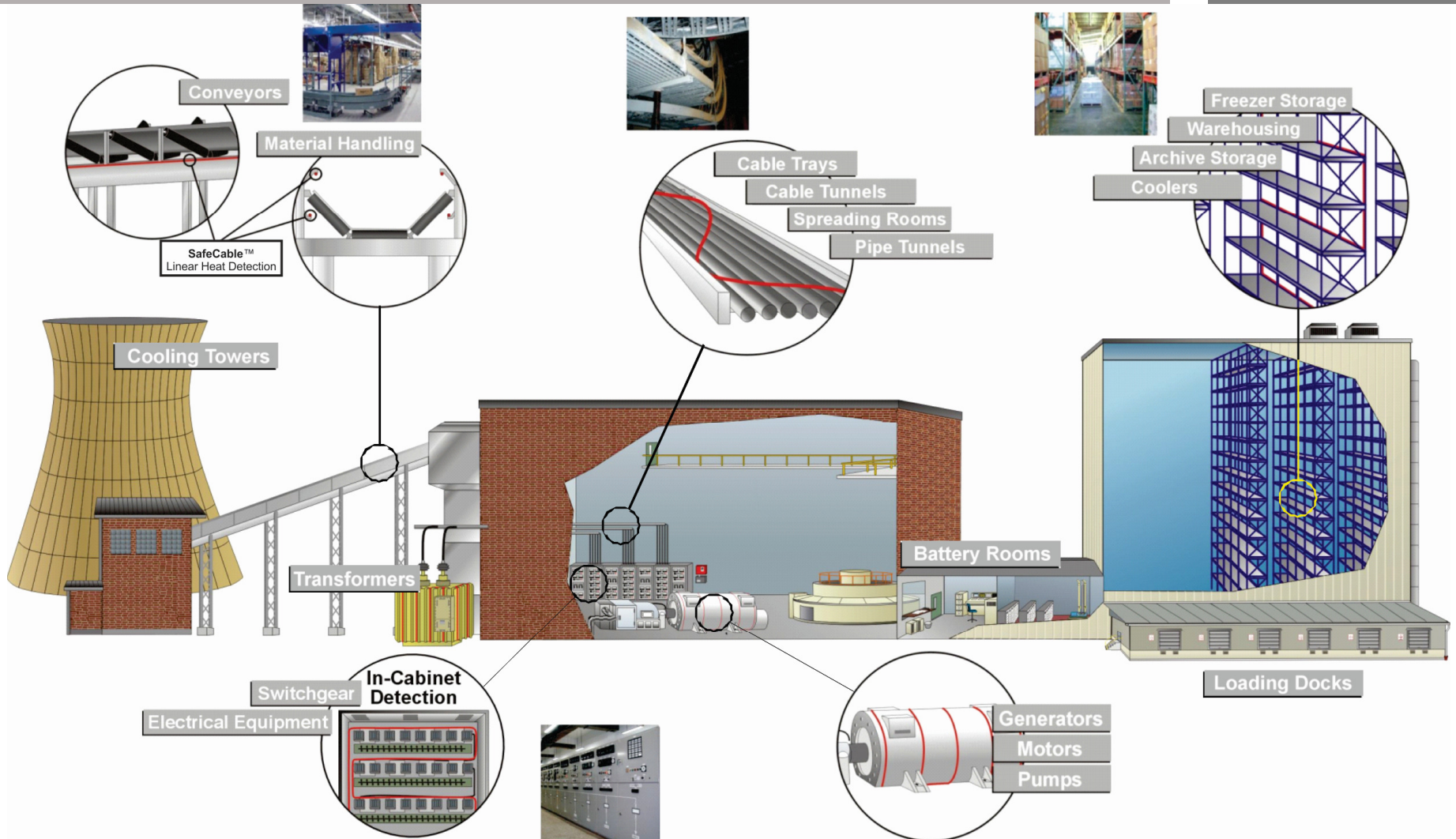
# LINEAR HEAT DETECTION





- Commercial
- Industrial
- Utilities

## Flexibility to Adapt to Your Environment



# APPLICATIONS

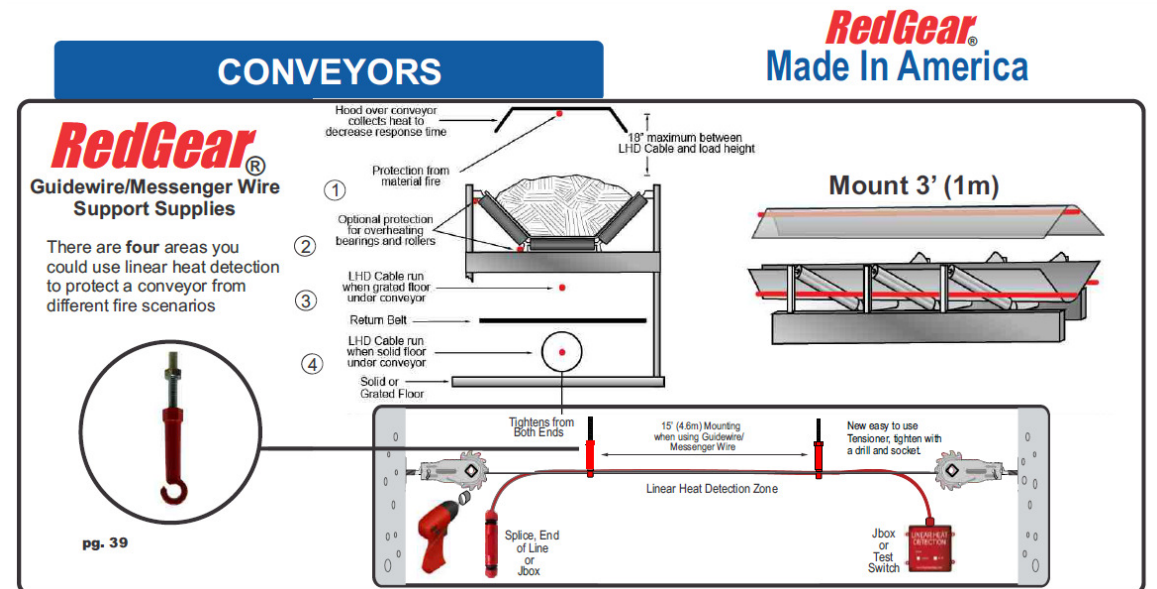
## CONVEYORS

To the right you will find the typical ways linear heat detection is used to protect conveyors.

Hazard areas of concern on conveyors:

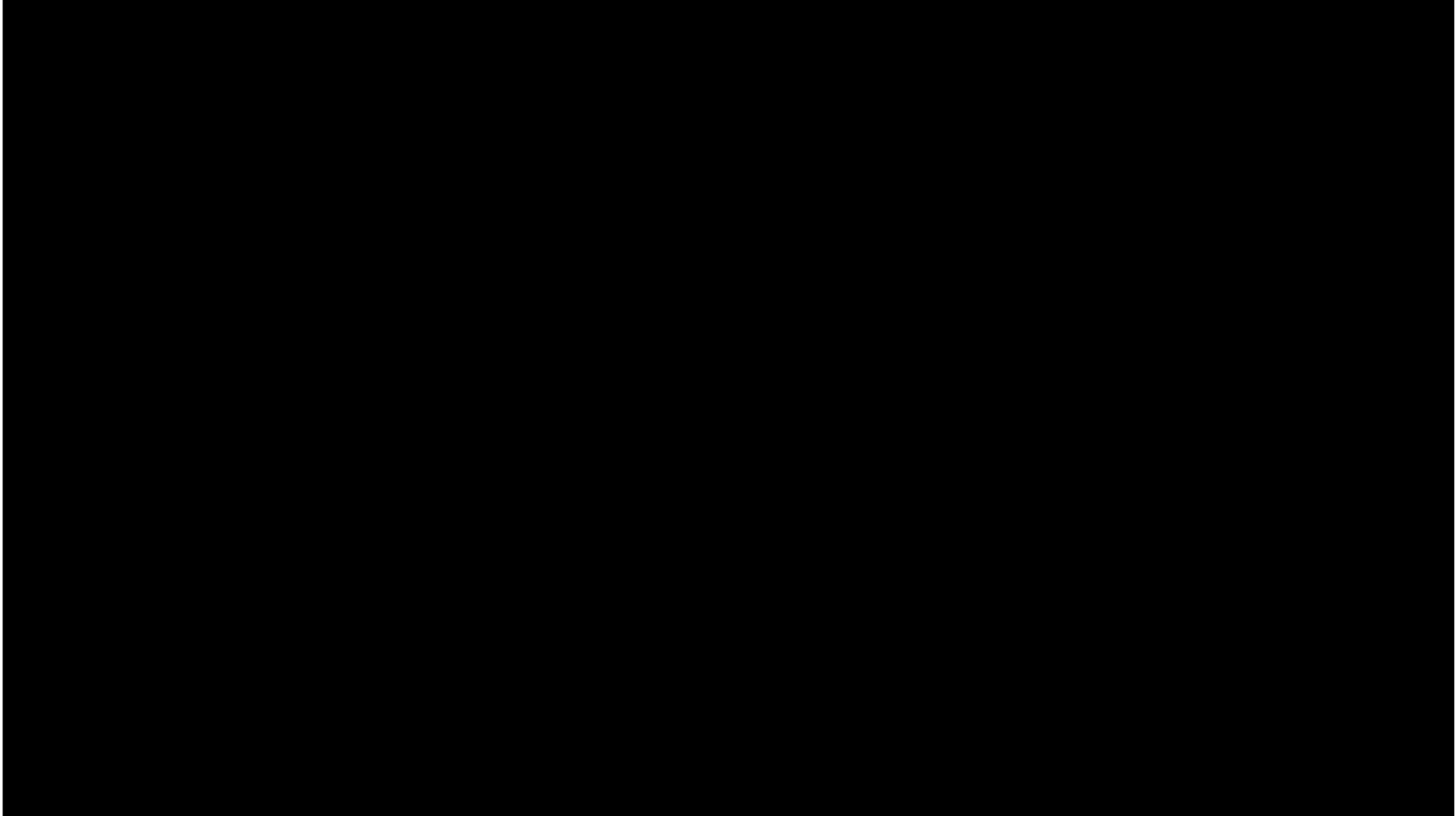
Friction from misaligned belts, overheated motors, burning material on the belts, hotwork, or bad bearings.

Typical application would be our standard PVC 190 degree cable with an additional nylon jacketing and possible coupled with or guidewire depending on the construction of the support.



# LINEAR HEAT DETECTION

# Conveyor example



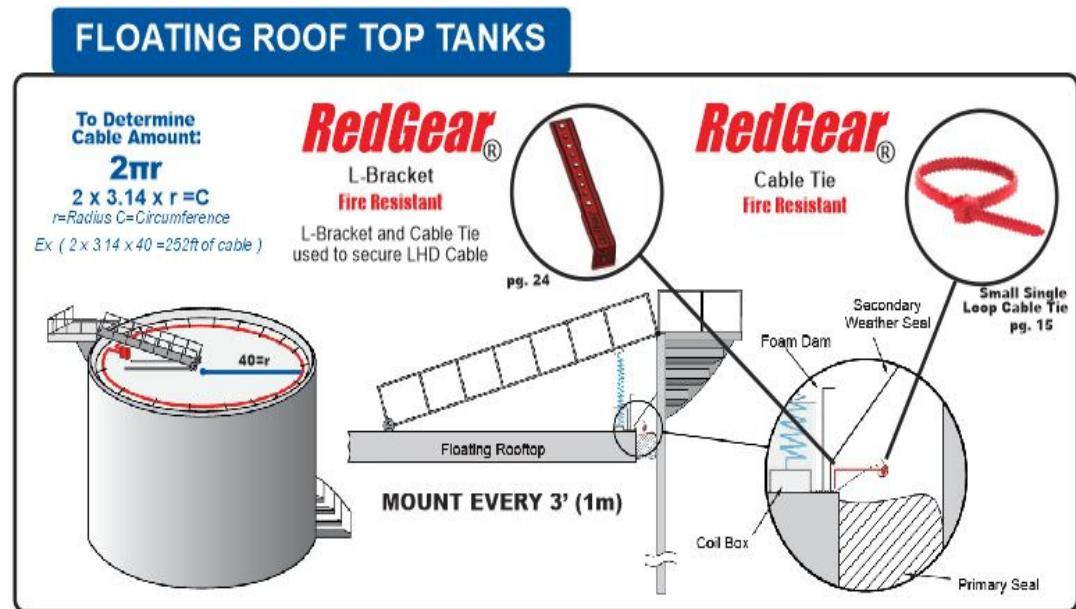


# APPLICATIONS

## FLOATING ROOF TOP APPLICATION

To the right you will find an example of how linear heat detection is used to detect a fire on floating roof top tanks. Typically the LHD is installed between the primary and secondary seals at 5' spacing and usually requires an intrinsic safety barrier for hazardous areas.

We can supply ISB modules for both addressable and conventional FACP's



# LINEAR HEAT DETECTION

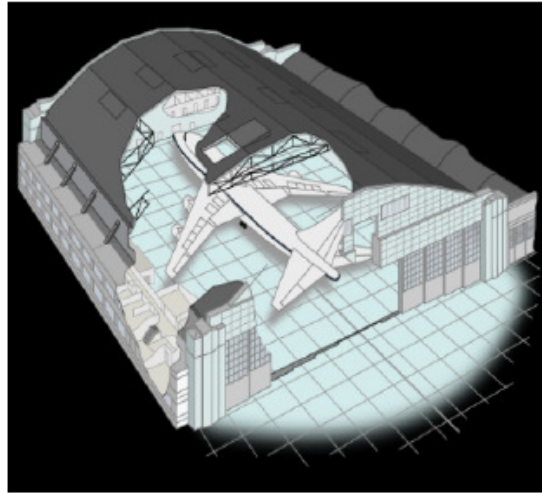
# A P P L I C A T I O N S

## AIRCRAFT HANGER

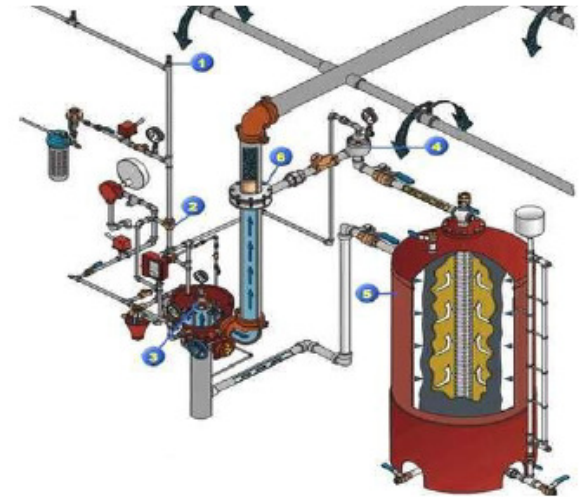
Aircraft hanger fire protection requirements are covered in the NFPA 409 Standard on Aircraft Hangers and may require protection at the ceiling and in the underwing areas. Please refer to this standard for exact requirements.

Typically the overhead automatic suppression (FOAM) systems are triggered by linear heat detection connected to a fire alarm releasing panel.

Many times used in tandem with Flame Detectors.



**Typical Aircraft Hanger**



**Typical Foam System**



UV/IR



3IR

# L I N E A R H E A T D E T E C T I O N

# *A P P L I C A T I O N S*

## **FREEZER**

Freezers

Can have:

- Ceiling Detection
- In-rack detection
- Dry Sprinkler System
- Pre-action System
- In-rack Systems

And/or Combination

Timing of install is critical –  
Active or inactive Freezer

- 30minutes in
- 30minutes out

## **FREEZER APPLICATION**



# *L I N E A R H E A T D E T E C T I O N*

# *A P P L I C A T I O N S*

## **TEMPORARY DETECTION**

National Fire Protection Association (NFPA) reports that for each year between 2010 and 2014 there were 8,000+ fires in structures under construction

Most are attributed to heaters, welding, cutting, grinding etc...

We make it easy fast and simple  
Then---  
Take it down and move it to the next project...

## **TEMPORARY DETECTION**



# *L I N E A R H E A T D E T E C T I O N*

***RedGear***<sup>®</sup>  
**Linear Heat Detection  
Installation Supplies**

Compatible with all Linear Heat Detection Systems

# J-BOXES

No more Hole Saws Needed  
New **EZ Knockouts**

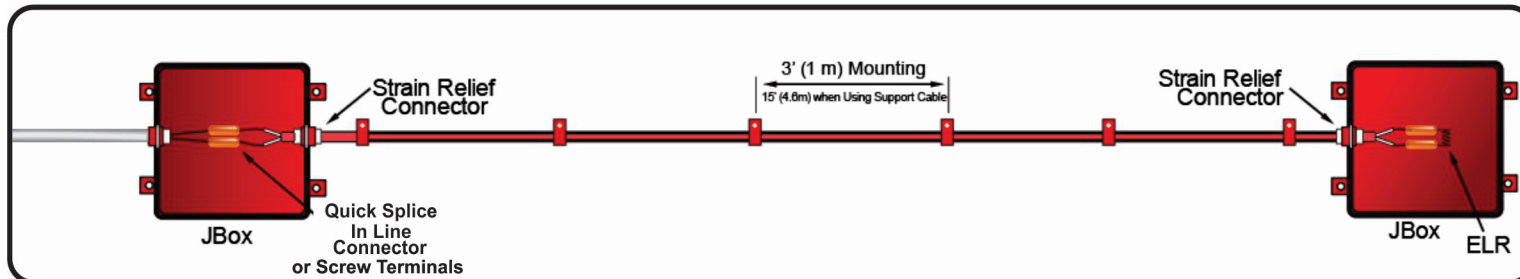
## Text Imprinted Covers



**NO MORE DRILLING**

NOTE: Text on product is not White

*Spaces on cover to mark if the box is the J-Box or end of line*

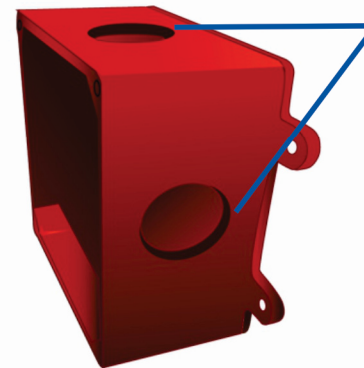


**EASY TO USE:**



**NO MORE  
HOLE SAWS**

NOTE: Text on product is not White



**NEW  
EZ KNOCKOUTS**

**NO HOLE SAWS  
REQUIRED**

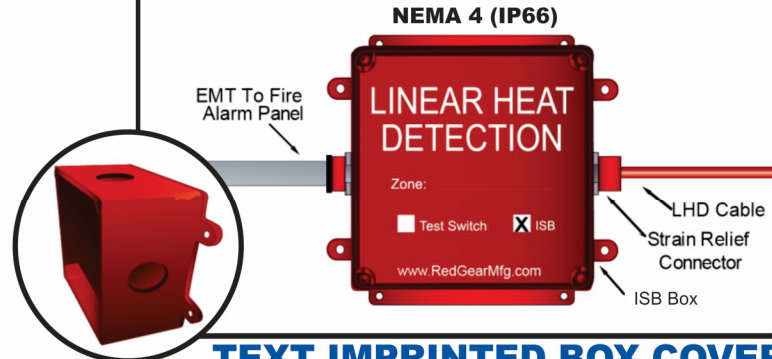
**NEMA 4 (IP66)  
NEMA 6P (IP68)  
NEMA 4X (IP67)**



# ISB MODULE

*Pre-assembled Intrinsic Safety Barriers for use with LHD, fire alarm, flame detectors, and system in hazardous areas*

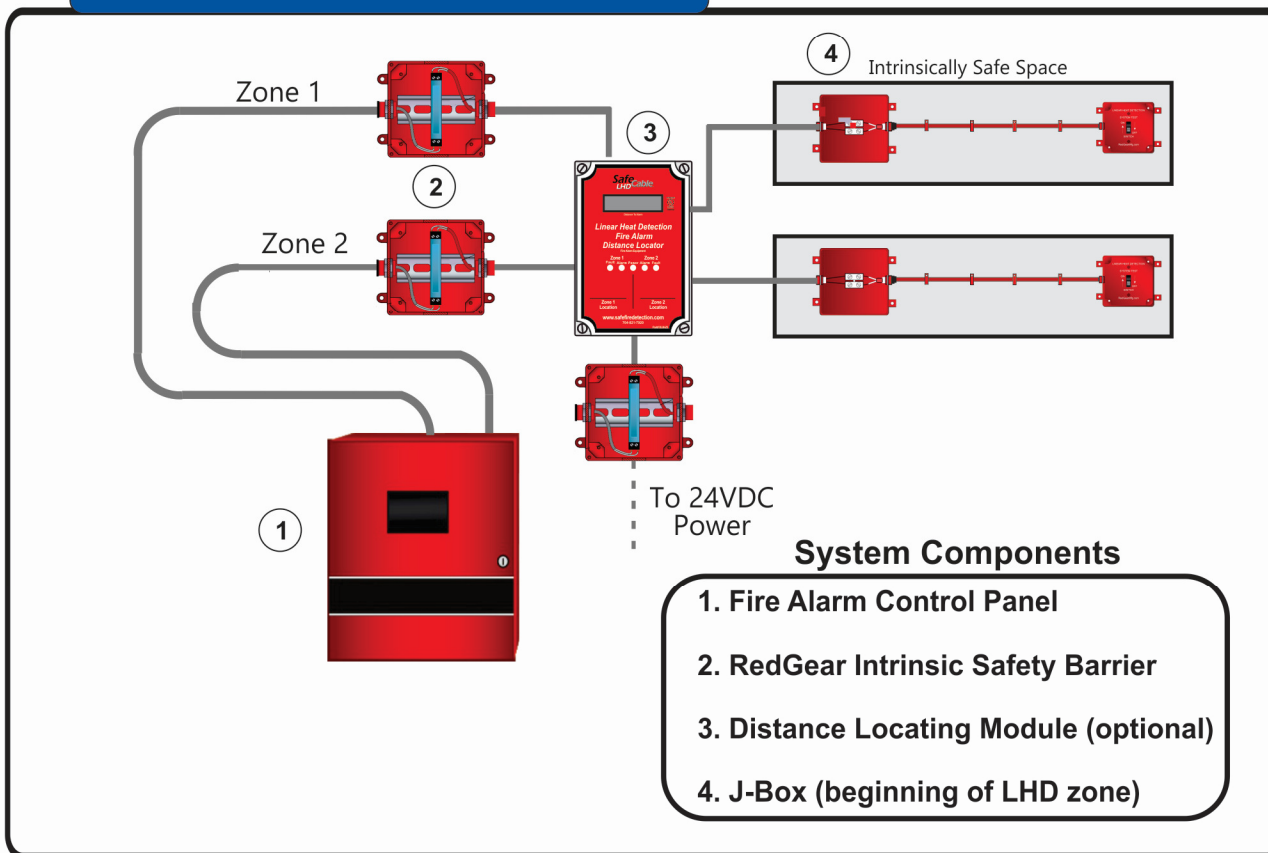
**NO MORE HOLE SAWS!**



**TEXT IMPRINTED BOX COVER**

*NOTE: Text on product is not White*

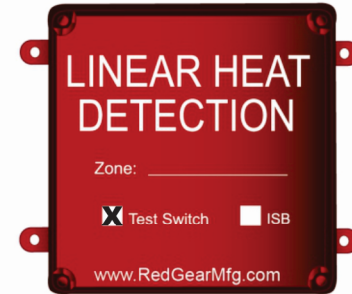
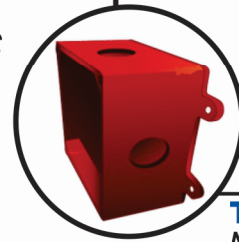
## ISB SYSTEM EXAMPLE



# TEST SWITCH

*New easy to use test switch, no  
more complicated hard wired boxes*  
*Now just flick of a switch*

***New EZ Knockouts***

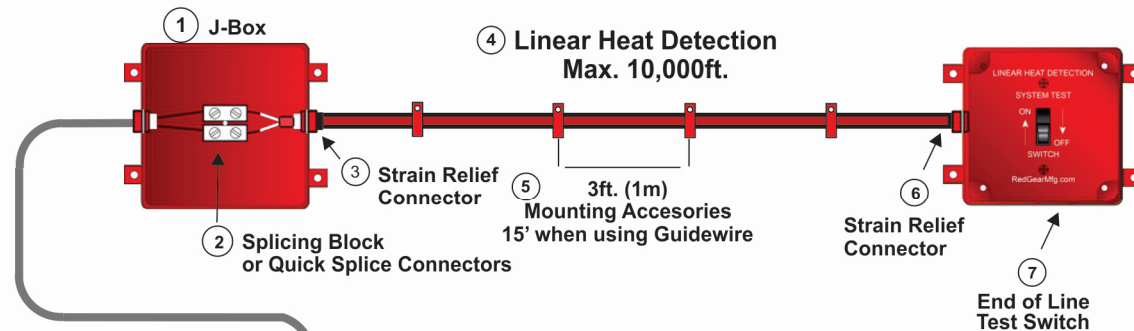


**Outside View**

**TEXT IMPRINTED BOX COVER**

*NOTE: Text on product is not White*

## LHD SYSTEM EXAMPLE



### System Components

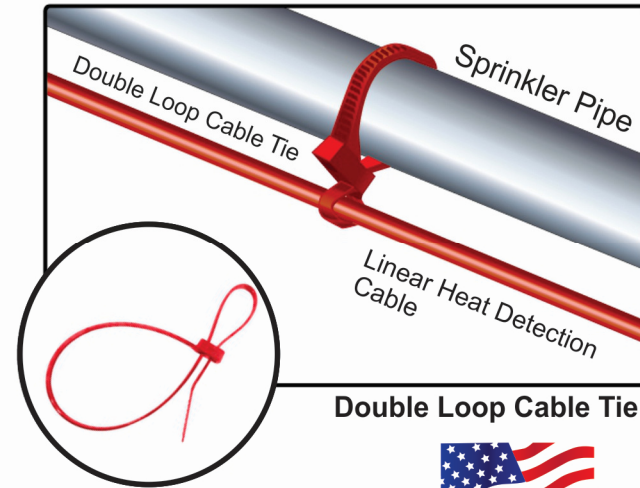
1. J-Box
2. Splicing Block or Quick Splice Connector
3. Strain relief Connector
4. Linear Hear Detection Cable
5. Mounting Accesories
6. Strain Relief Connector
7. End of Line Test Box



# CABLE TIES

New **RED** nylon 6.6 fire resistant cable ties; multiple sizes for use with pre-action sprinkler systems and other applications

**Higher Quality ■ Lower Cost**



## UNIVERSAL SMALL SINGLE LOOP TIE

**RedGear®** Small Single Loop Cable Ties

Part #: RG1114C 100/pk  
Part #: RG1114M 1000/pk



## PRE ACTION SPRINKLER PIPE DOUBLE LOOP

**RedGear®** Pre Action Double Loop Cable Ties

**3/4" - 2"**

Part #: RG1112C 100/pk  
Part #: RG1112M 1000/pk



## UNIVERSAL LARGE SINGLE LOOP TIE

Standard Extra Large Single Loop Cable Ties

Part #: RS7064L 50/pk



## PRE ACTION SPRINKLER PIPE DOUBLE LOOP

**RedGear®** Pre Action Double Loop Cable Ties

**2 1/2" - 3 1/2"**

Part #: RG1113C 100/pk  
Part #: RG1113M 1000/pk



# **New** **UNIVERSAL CABLE CLIP-TIE**

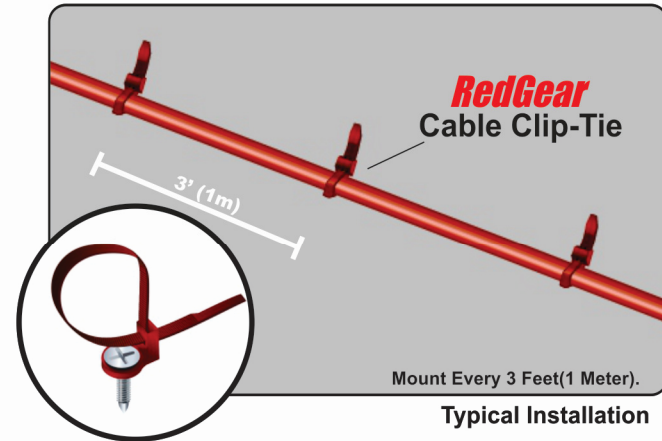
*For use in all applications,*

***No More Need to Buy  
Multiple Parts***

**1 Piece Cable Clip-Tie**

**LESS  
LABOR  
TIME  
AND  
COST**

**ONE SIZE FITS ALL**



**NEW 2 IN 1 MOUNTING CLIP**

**Cable Clip and Cable Tie  
All In One!**

**FIRE RESISTANT**

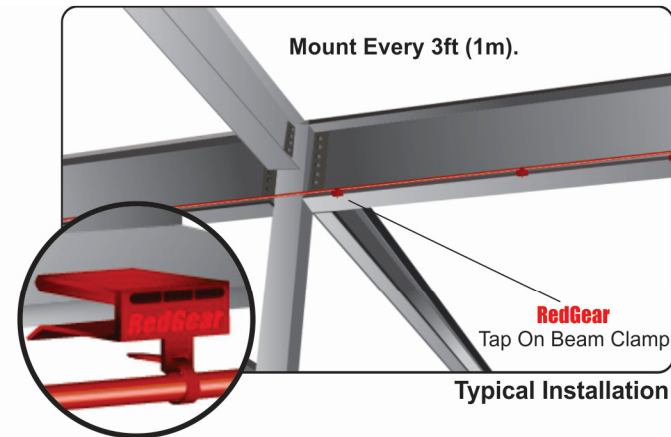


**No More Need to  
Buy Multiple Parts!**

# BEAM CLAMPS

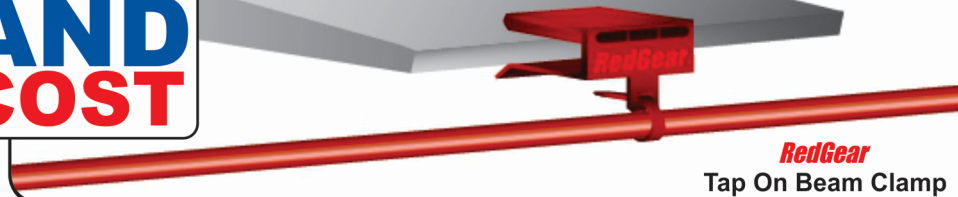
*The first tap on beam clamp that does the job of three parts*

***Built-in Cable Tie***



**Now 1 Part Does  
The Work of 3**

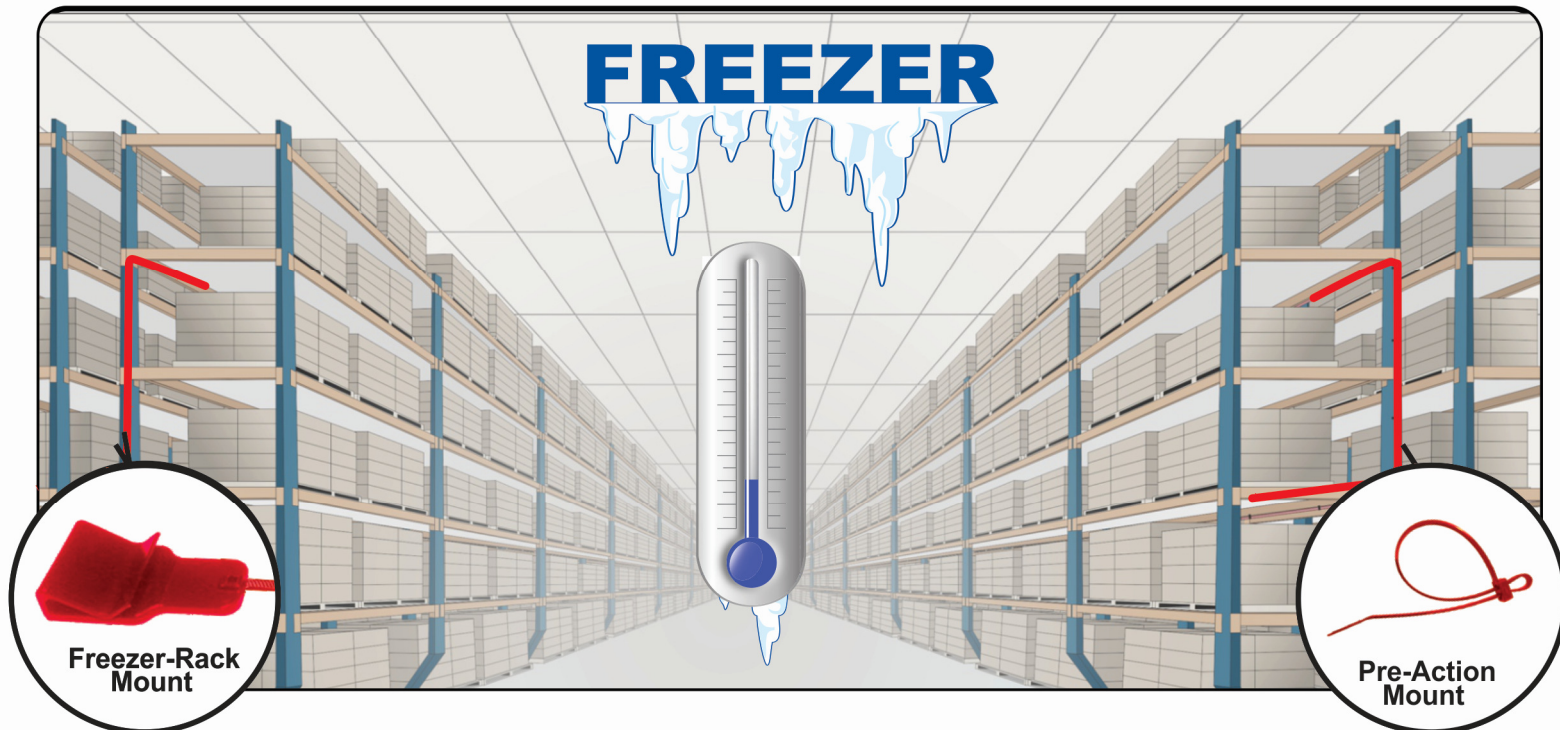
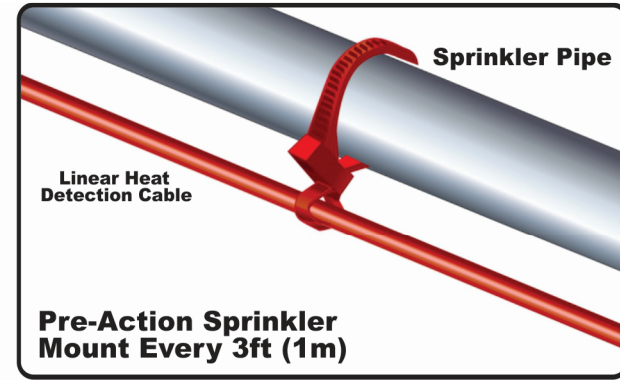
**LESS  
LABOR  
TIME  
AND  
COST**



# FREEZER MOUNTS

*New push on rack mount with built-in cable tie and double loop pre-action sprinkler pipe cable ties*

***Reduce Installation Time***

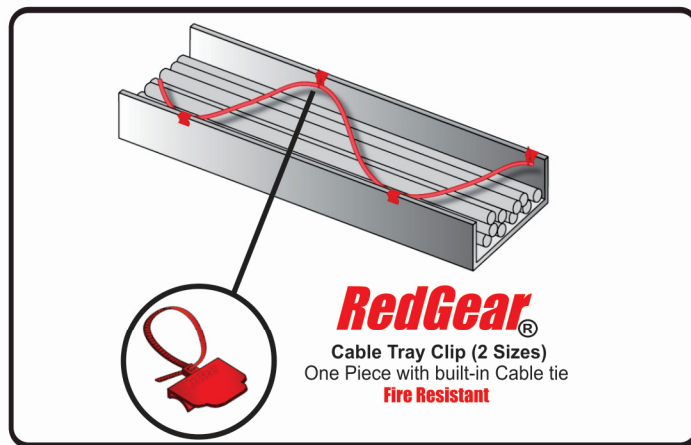
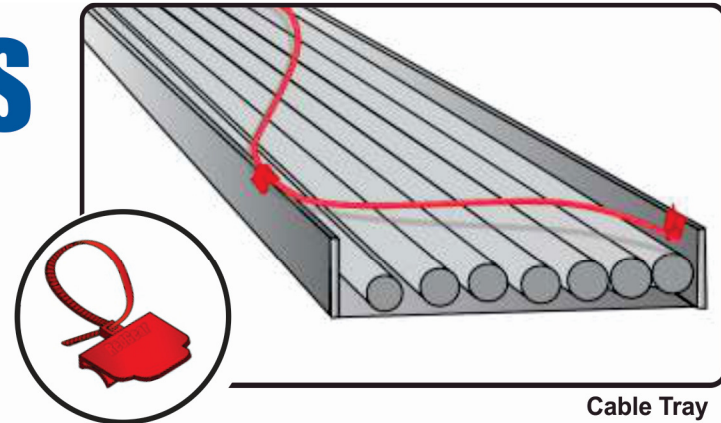




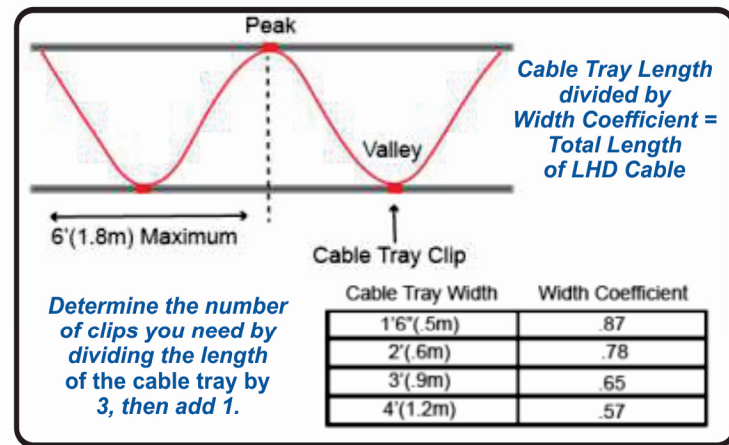
# CABLE TRAY CLIPS

*New all in one clip does the job  
of what used to take three parts*

***One Part Does it All***



Deep Cable Tray Clip

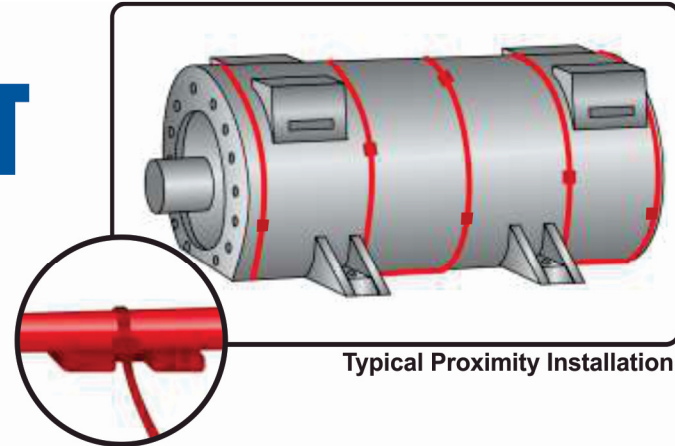


Sine Wave Calculation for Cable Tray

**Don't Buy Three Parts When  
You Only Need One!**

# UNIVERSAL MOUNT

*Surface, ceiling, racks, cabinets,  
walls, for use in all applications  
almost anywhere*



Typical Proximity Installation

## SURFACE MOUNT & CABLE TIE IN ONE

**LESS  
LABOR  
TIME  
AND  
COST**

Universal Mount

Linear Heat Detection Cable

Built-in  
Cable Tie

## NEW 2 IN 1 UNIVERSAL MOUNT

**FIRE RESISTANT**

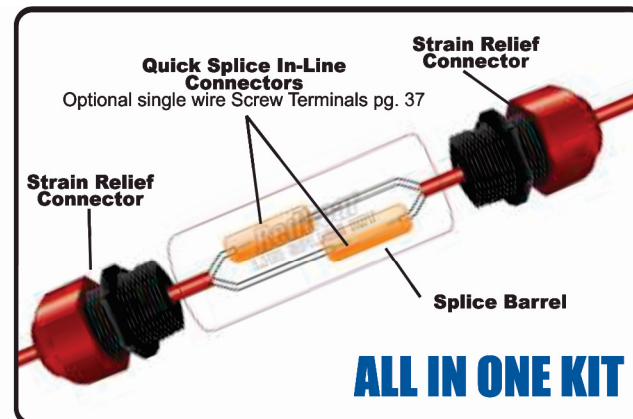
One Size Fits All LHD Cables



**No More Need to  
Buy Multiple Parts!**

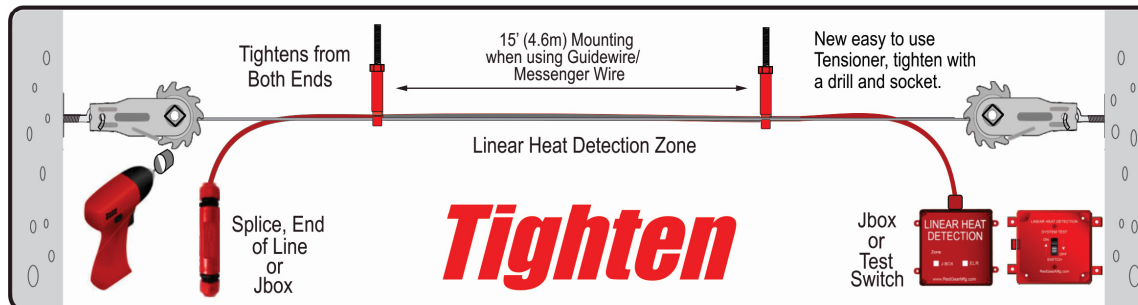
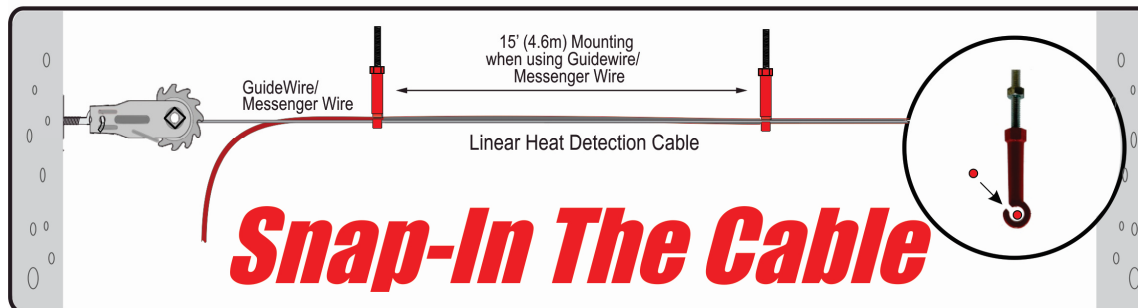
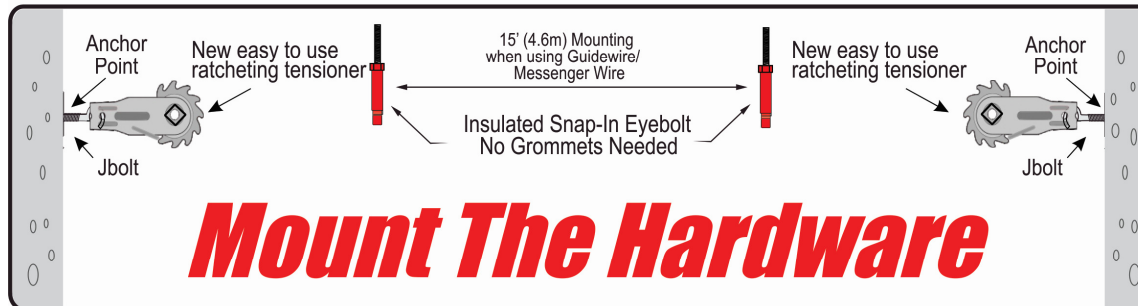
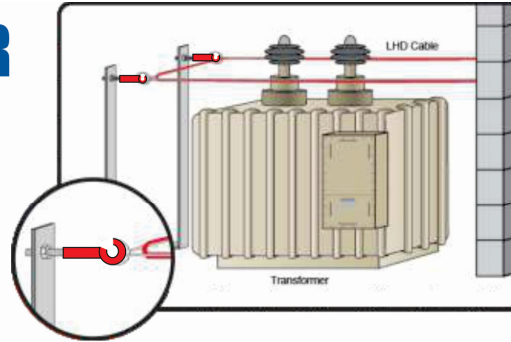
# **RedGear<sup>®</sup>** **SPLICE KIT**

*No need to replace entire cable,  
No tape or screws needed*



# GUIDEWIRE/MESSENGER WIRE SUPPLIES

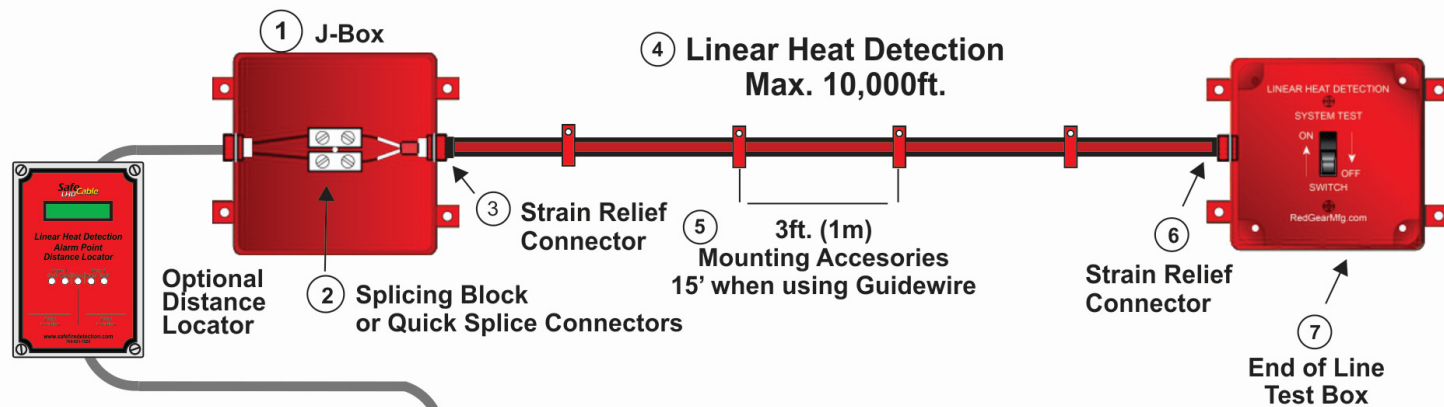
## *New Snap-In Eyebolts*



**NO MORE PRE-THREADING EYE BOLTS ON CABLE**  
*Easy to use Tensioners • No more grommets or Turnbuckles*



## LHD SYSTEM EXAMPLE



### System Components

1. J-Box
2. Splicing Block or Quick Splice Connector
3. Strain Relief Connector
4. Linear Hear Detection Cable
5. Mounting Accessories
6. Strain Relief Connector
7. End of Line Test Box

- Any Panel
- Addressable
- Conventional



One Company, Five Great Products

We offer  
Design assistance  
CAD design  
Online training

AND NOW for the next 100 callers  
I have been authorized by the factory to  
offer a FREE book – that right SAFE  
literally wrote the book on Linear Fire  
Detection – I will send you one if you  
contact me and request one –  
[jeffw@safefiredetection.com](mailto:jeffw@safefiredetection.com)

<https://safefiredetection.com/>

- Any Panel
- Addressable
- Conventional



One Company, Five Great Products



***<https://safefiredetection.com/>***



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[APPLICATIONS](#)

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# PRO Series™

THE WORLD'S MOST SENSITIVE  
EARLY WARNING AIR SAMPLING  
FIRE DETECTOR

[Learn More About ProSeries Here](#)



## PRESS RELEASE

Safe Fire Detection Inc. is proud to announce the acquisition of Redgear Manufacturing.

The Leader in Air Sampling and Linear Heat Detection Installation Supplies.

# RedGear

[For More Information Click Here](#)

**Very user friendly WebSite – check out our Knowledge library when you have time!**