LHD
LINEAR HEAT DETECTION CABLE
The Linear Heat Detection (LHD) cable is a combination of advanced polymer and digital technologies which can be used on any panel, and can detect heat anywhere along its entire length.

At the core of the LHD cable 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 LHD cable is chemical resistant and UV protected. This allows the LHD cable to be used in a wide variety of installations and special hazard applications.

- Ideal for Double Interlock Preaction Detection
- Install up to 10,000 Linear Feet per Zone
- Compatible with Any Conventional Releasing Panel Listed for Fire
- Can Detect Heat Anywhere Along the Entire Length of Cable
- Multiple Alarm Temperatures can be Incorporated in the Same Zone
- Lower Material & Installation Cost

**TECHNICAL DATA**

**Temperature Rating:**
- 155° F (68°C) (typical temperature)
- 172° F (78°C)
- 190° F (88°C)
- 220° F (105°C)

**Available Jacket Material:** PVC, Nylon, Polypropylene

**RF Tested:** Up to 10,000 linear ft.

**Resistance:** .05 ohms/ft resistance per twisted pair
Please consult installation guidelines prior to any installation.

**TYPICAL APPLICATIONS**
- Rack Storage
- Bulk Storage
- Conveyors
- Cooling Towers
- Valves and Motors
- Cable Trays
- Baggage Handling
- Computer Rooms
- Fuel Storage Tanks
- Parking Decks
- Garages
- Trash Rooms
- Elevator Shafts
- Moving Sidewalks
- Escalators
- Wet Benches
- Off Shore Platforms
- Pipelines
- Engine Compartments
- HGV Engine Bays
- Train Carriage Couplings
- Train Station Platforms
- Bridges and Piers
- Aircraft Hangars

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**CABLE AREA SPACING**

(For smooth ceilings)

- 0.7x
- 17.5 ft.
- 35 ft.

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**LISTED AREA SPACING**

<table>
<thead>
<tr>
<th>Temp. Rating</th>
<th>UL – C-UL-US</th>
<th>FM</th>
</tr>
</thead>
<tbody>
<tr>
<td>155°F (68°C)</td>
<td>35 ft. (10.7m)</td>
<td>30 ft. (9.1m)</td>
</tr>
<tr>
<td>172°F (78°C)</td>
<td>35 ft. (10.7m)</td>
<td>30 ft. (9.1m)</td>
</tr>
<tr>
<td>190°F (88°C)</td>
<td>35 ft. (10.7m)</td>
<td>30 ft. (9.1m)</td>
</tr>
<tr>
<td>220°F (105°C)</td>
<td>35 ft. (10.7m)</td>
<td>25 ft. (7.6m)</td>
</tr>
</tbody>
</table>

**MAXIMUM INSTALLATION TEMPERATURES**

<table>
<thead>
<tr>
<th>Ambient</th>
<th>Alarm Temp.</th>
<th>P/N:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 113°F</td>
<td>155°F (68°C)</td>
<td>TC155</td>
</tr>
<tr>
<td>Up to 122°F</td>
<td>172°F (78°C)</td>
<td>TC172</td>
</tr>
<tr>
<td>Up to 158°F</td>
<td>190°F (88°C)</td>
<td>TC190</td>
</tr>
<tr>
<td>Up to 158°F</td>
<td>220°F (105°C)</td>
<td>TC220</td>
</tr>
</tbody>
</table>

**SPECIAL HAZARDS INSTALLATION**

LHD Cable is available with several options for special hazard applications and is available in all LHD temperatures.

- Nylon outer jacket which is UV resistant for outdoor applications and extra durable for harsh industrial environments.
- Polypropylene for chemically harsh and caustic environments.
- GuideWire® (a stainless steel wire attached to the LHD cable) for spanning distances up to 250 feet with supports every 15 – 20 feet.
**LHD INSTALLATION APPLICATIONS**

**IN-RACK**
Used in any tall rack storage situation: warehousing, archive storage, cooling and freezer storage to quickly identify the location of the fire and conveying the information back to the fire alarm panel.

**BRANCHLINE**
Installing LHD cable along the sprinkler pipe branchline allows a pre-action sprinkler system to be more efficient by quickly recognizing the fire and conveying the information back to the fire alarm system.

**MOTORS, GENERATORS, PUMPS, VALVES**
LHD cable is installed near the hazard. Be sure to consider ambient and operating temperature of the equipment when selecting the alarm temperature.

Please consult installation guidelines prior to any installation.
**CABLE TRAY**

A sine wave pattern, as shown in the diagrams should be used when installing LHD Cable in a cable tray application. The maximum distance between each peak or valley should not exceed 6 feet. The detection wire is secured in place at the sides of the cable tray using the most appropriate mounting clip based on the tray construction.

**CONVEYOR**

For conveyor belt detection the LHD Cable with a nylon outer jacket and GuideWire are recommended. The durable nylon outer covering will help prevent damage to the detection wire while the GuideWire helps maintain system integrity and eases installation.

Please consult installation guidelines prior to any installation.
LHD cable may be used with any new or pre-existing conventional fire alarm panel; simply run leader wires from the Fire Alarm Control Panel to a Junction box to begin a LHD cable run. LHD cable is also an excellent choice for repairing, replacing or upgrading existing systems which are wired in either a class “A” or “B” configuration.

Class B Type Installation
(Class A Type Installation has returnable feed and can also be configured.)

Optional Class A Type Installation Returnable Feed

Linear Heat Detection Cable allows pre-action or deluge type fire sprinkler system to be more efficient by quickly recognizing the fire, and conveying the information back to the fire alarm panel.

LHD CABLE CONVENTIONAL SYSTEM CONFIGURATION

Please consult installation guidelines prior to any installation.
## SPECIFICATIONS FOR ORDERING LHD CABLE

### PVC JACKET (VINYL)
*Used for Normal Indoor and Outdoor Installations*

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>155°F / 68°C Red</td>
<td>PN: TC155</td>
</tr>
<tr>
<td>155°F / 68°C Red with GuideWire*</td>
<td>PN: TC155G</td>
</tr>
<tr>
<td>172°F / 78°C Red</td>
<td>PN: TC172</td>
</tr>
<tr>
<td>172°F / 78°C Red with GuideWire*</td>
<td>PN: TC172G</td>
</tr>
<tr>
<td>190°F / 88°C White</td>
<td>PN: TC190</td>
</tr>
<tr>
<td>190°F / 88°C White with GuideWire*</td>
<td>PN: TC190G</td>
</tr>
<tr>
<td>220°F / 104°C White</td>
<td>PN: TC220</td>
</tr>
<tr>
<td>220°F / 104°C White with GuideWire*</td>
<td>PN: TC220G</td>
</tr>
</tbody>
</table>

*GuideWire should be installed using the eyebolts for support every 15 – 20 ft.*

### NYLON JACKET (NYLON OVER VINYL)
*Used for Industrial Indoor and Outdoor Installations*

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>155°F / 68°C Black</td>
<td>PN: TC155N</td>
</tr>
<tr>
<td>155°F / 68°C Black with GuideWire*</td>
<td>PN: TC155NG</td>
</tr>
</tbody>
</table>

### POLYPROPYLENE JACKET (POLY OVER VINYL)
*Used for Chemical Installations*

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>155°F / 68°C Red</td>
<td>PN: TC155P</td>
</tr>
<tr>
<td>155°F / 68°C Red with GuideWire*</td>
<td>PN: TC155PG</td>
</tr>
</tbody>
</table>

Tyco recommends following SAFE Fire Detection’s specifications, found online at www.safefiredetection.com, for choosing the best cable for your environment and correctly installing both the LHD Cable (ThermoCable™) and LHD Cable with GuideWire®.
CABLE MOUNTING ACCESSORIES

TC1027 - Double Loop Cable Tie
Fits 3/4" to 2" sprinkler pipe

TC1028 - Double Loop Cable Tie
Fits 2-1/2" to 3-1/2 sprinkle pipe

TC1029 - Single Loop Cable Tie
Fits 4" to 6" sprinkler pipe

TC1012 - Cable Clip
3/16" mounting hole

TC1013 - Cable Clip
Zinc plated steel cable clip with 1/4" mounting hole

TC1020 - Cable Tray Mounting Clip
Spring type cable tray mounting clip for material thickness from 1/16" to 1/4"

TC1021 - 1/16" Cable Tray Mounting Clip Assembly
Designed for material thickness 1/16" to 5/32"

TC1022 - 5/32" Cable Tray Mounting Clip Assembly
Designed for material thickness 5/32" to 1/4"

TC1016 - L-Bracket
Steel bracket for supporting Linear Heat Detection Cable to equipment

TC1014 - Beam Clamp Assembly, Spring Steel
Designed for material thickness of up to 1/2"

TC1015 - Beam Clamp Assembly, Zinc Plated Steel
Zinc plated steel beam clamp with cable clip
Designed for material thickness up to 7/8"

TC1023 - 1/8" Universal Mounting Clip Assembly
Designed for material thickness of 1/8" to 1/4"

TC1024 - 5/16" Universal Mounting Clip Assembly
Designed for material thickness of 5/16" to 1/2"

TC1017 - Cable Tie Mount
Use with Single Loop Cable Tie TC1018 and TC1019
Adhesive to adhere to mounting surface

TC1019 - Cable Tie Mount Adhesive
For use with Cable Tie Mount TC1017

TC1030Z - Zinc Plated Eyebolts
TC1030SS - Stainless Steel Eyebolts
Eyebolt Shown with Grommet (TC1032) and Nut (TC1031)

TC1033Z - Zinc Plated Turnbuckle
TC1033SS - Stainless Steel Turnbuckle

TC1000 - Junction/ELR-Box
NEMA 4X moisture proof standard junction box, with screw terminal strip. Also use for all outdoor splices.
Dim.: 4" x 4" x 2"

TC1002 - HD-Junction/ELR-Box
NEMA 4X moisture proof heavy duty junction box, with screw terminal strip.
Dim.: 6" x 6" x 4"

TC1003 - HD-ELR-Box with Test Switch
NEMA 4X moisture proof heavy duty junction box, with screw terminal strip and test switch.
Dim.: 6" x 6" x 4"

TC100 - Cable Strain Relief Connector
One required for each Junction/ELR-Box, HD-Junction/ELR-Box, and HD-ELR-Box.
Two required for all outdoor splices.

TC1005 - Splicing Block
Two point with screw terminals

TC1010 - Low Temp. Splicing Tape
Black

TC1007 - Splicing Tape White
TC1008 - Splicing Tape Red
TC1009 - Splicing Tape Blue

TC1006 - Sealant Tape
For weatherproof splices

Please consult installation guidelines prior to any installation.