

Linear Heat Detection Cable

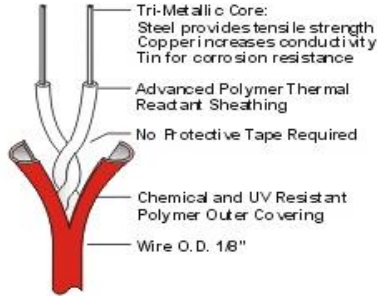
Model 09510

Rev 2.0

1 Introduction

1.1 General Information

Linear Heat Detection (LHD) is a line-type form of fixed temperature heat detection that can be used in a variety of applications including vehicle, marine and industrial risks.



This linear cable can detect a fire anywhere along its entire length.

LHD Cable detection systems are easy to design, install, operate and maintain. Up to 100m of LHD Cable can be used on every zone of any approved conventional panel.

A low current is run through the cable which is monitored by the control panel. In a fire the LHD insulation will breakdown and make contact, signalling the control panel of an alarm.

1.2 How Does it Work

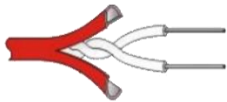
LHD Cable works using a twisted pair of extremely low resistance, tri-metallic conductors sheathed in advanced thermal polymers.

When a fire occurs, the heat generated causes the internal thermal polymer insulation to melt. This allows the conductor wires to contact, creating a short circuit that signals an alarm.



2 Components List

Linear Heat Detection Cable



FP-09510
Linear Heat Detection Cable 185° C

Install Kit



FP-09515
P Clip

1x DP-2000

Deutsch Plug 2 Pin M/F,
c/w heatshrink

Termination Options



DP-2000
Deutsch Plug 2 Pin M/F,
c/w heatshrink



FP-09512
2way and EOL Junction Boxes
with strain relief cable glands
and 1x EOL for monitoring.
(Obsolete)

Note: Standard detection temperature is 185°C. Different temperature detection cable available upon request.

Note: FP-09512 Junction boxes have been made obsolete and are to be used only in existing installations. Where installations are found to use Junction Boxes it is recommended to replace these with DP-2000 Deutsch Plug 2 Pin.



3 Design Considerations

3.1 Mounting Location

LHD Cable is to be installed on a smooth surface avoiding any obstructions that may inhibit detection, with appropriate clearance/protection from:

- Heat sources that may cause false alarms (e.g. exhaust manifold, turbo, etc)
- Moving parts or articulating joints
- Large amounts of water
- Corrosive chemicals

Using DP-2000 Deutsch Plugs, the LHD maintains an IP68 rating and is UV, oil and chemical resistant, however sources of these should be avoided to extend the life of the LHD cable and avoid false alarms. Where these cannot be avoided, FP-09500 Fire Rated Cable may be used to make extension leads to bypass these hazards and reduce any damage to the LHD.

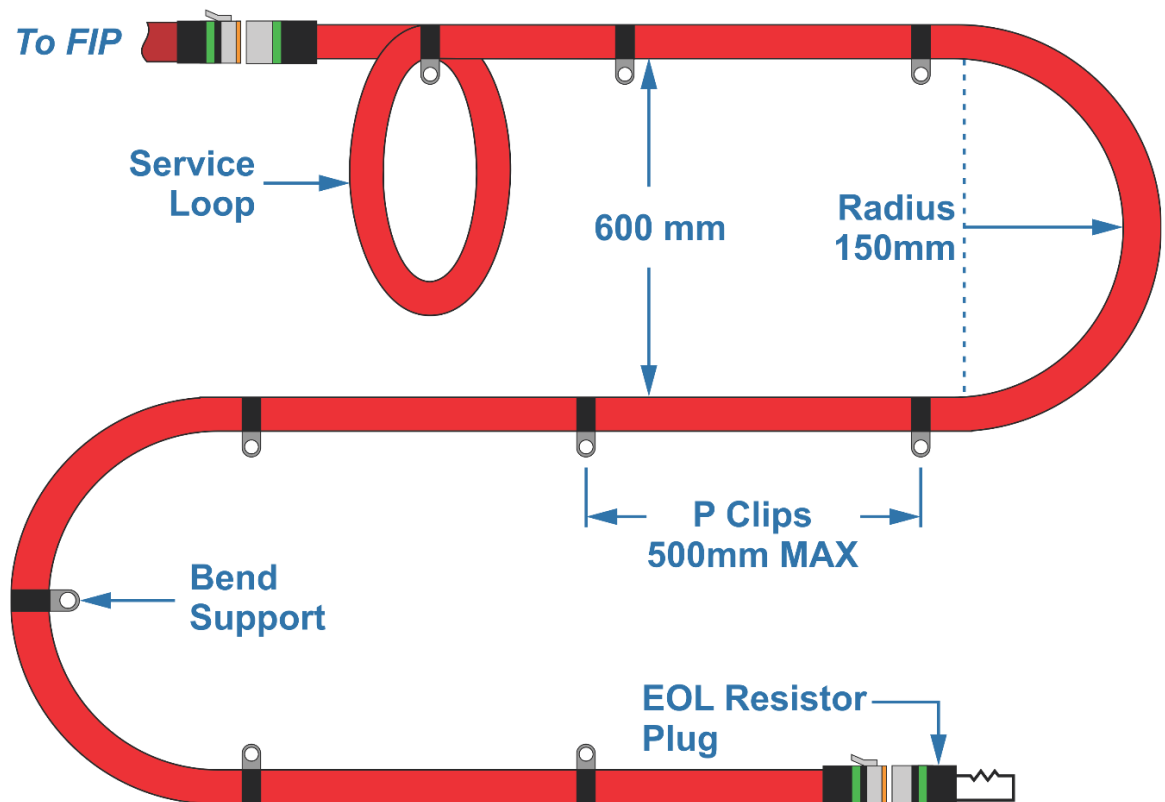
3.2 Installation Requirements and Limitations

For total coverage, LHD should be looped around the risk area with spacing between cable no more than 600mm apart. The bend radius must never be less than 150mm.

The maximum length of a continuous run of LHD is 100m metres. This includes any extension leads or manual actuators that may be included in the circuit.

LHD cable should never be installed in a high tension state as this may cause damage to the internal conductors and cause false alarms. A service loop should be included to allow for normal expansion and contraction of the LHD due to temperature.

LHD cable must be mounted using only approved P Clips at minimum every 500mm. Additional P Clips should be used where necessary, particularly in high vibration or aggressive environments. P Clips are to be used to support bends and to prevent excessive sagging. Use of non-approved fasteners may damage the LHD.



To avoid damage or failure, LHD cable **must not**:

- be bent using tools or kinked when installed
- be painted
- enclosed in conduit, ducting or other exterior protection
- be spliced into – only continuous runs connected using the supplied Deutsch Plugs may be used

If the LHD cable is damaged by fire, the whole length must be replaced.

FirePro generators **must** remain disconnected until system is completed and fire control panel is no longer in a fault or alarm condition. The FirePro Universal Test Lamp (P/N FP-08800) can be used to take the panel out of a fault condition.

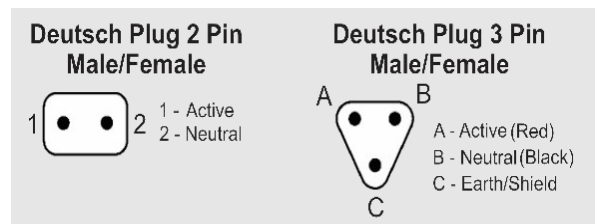
Any required extension leads **must** be constructed as per the instructions in 3.3 Cabling Requirements.

3.3 Cabling Requirements

When constructing extension leads the supplied Deutsch Plugs must be used to ensure water-proof connections are made throughout the installation.

1. Cut cable to required length and strip outer insulation to approximately 25-30mm.
2. Strip inner insulation to approximately 6mm and using a Deutsch Crimping tool, fix pins to the exposed ends of the cable, including the earth where applicable.
3. Place heat shrink over the end of the cable. Identify correct socket on plug by the numbers/letter on the side of the plug and push through the gasket at the bottom of the plug until a click is heard and the pin is locked in place.
4. Place the locking mechanism inside the plug to ensure pins remain secure. (Male plugs; locking mechanism is orange. Female plugs; locking mechanism is green).
5. Using the heat shrink, seal the back of the plug.

Cables are colour coded for easy identification. When installing system, cables should be only connected to the correctly coded cable. Colour Coding for cables is as follows:



Colour	Circuit
Red	Power Supply
Yellow 1	Activation
Yellow 2	Activation Delayed
Green 1	Detection 1
Green 2	Detection 2
Orange	Siren/Strobe
White	Relay Output

4 Servicing and Maintenance

Inspection and servicing of the installed fire system should occur in accordance with the relevant Australian Standards (i.e. AS1851 or AS5062).

Note: No servicing should be performed, and no personnel should be in the risk area until the fire system is fully isolated.

1. Visually inspect the LHD cable. Ensure that the routing and installation procedures comply with the guidelines described in this document.
2. Ensure that there has been no damage to the cable, plug connections or junction boxes.
3. Isolate the fire suppression system and simulate an alarm condition on the detection circuit. This is done by closing the circuit where the linear end of line module is located by using a jumper wire. Verify the fire system enters an alarm condition and reset the control panel.

Note: Do not test LHD cable using a heat source. LHD cable must be replaced after every heat detection event.

5 Specifications

Maximum Run Length	100 metres
Resistance	0.164 ohms/metre
Maximum Voltage Rating	30vDC
Maximum Ambient Temperature	152° C
Standard Activating Temperature	85° C
Optional Activation Temperatures	- 68° C - 88° C - 105° C
Weight	0.0223kg/metre
Diameter	3.2mm
Bend Radius	76.2mm
Outer Sheath Material	Polymer