

A complete fire detection solution.

The use of Linear Heat Detection Cable in tunnels can assist in reducing the risk to human life and severe damage to the tunnel structure caused by fires.



Fires in a tunnel cause potential risk to human life and severe damage to the tunnel structure, requiring extensive repairs or causing collapse of the tunnel. The resulting disruption of transport links can cause serious economic or social problems, such as increased traffic congestion, reduction in tourism or damage to the local economy.

Among the causes of fire in tunnels are the accumulation of combustible debris along the roadway and within vent shafts, fuel spills and oils on the road surface due to motor vehicle accidents. Other causes are short circuits, electrical malfunctions in control, power cables, ventilation and air handling equipment. Once a fire has started they often rapidly spread increasing the exposure to direct heat and inhalation of toxic combustion.

Due to limited access / egress points, fire detection systems need to detect at the earliest opportunity to enable evacuation to safety muster points and extinguishing of the fire.

Patol is a global leader in the design and manufacture of specialist fire detection products for industrial applications. Founded in 1968 Patol is a privately owned British company located near Reading UK.

Linear Heat Detection Cable (LHDC) is particularly suited to applications such as road and rail tunnels where harsh environmental conditions preclude the use of other forms of detection.

Due to the increased air flow in tunnels, traditional smoke detectors can be prone to generating false alarms, as well as inaccuracy in fire location. The combination of Patol's LHDC and LDM-519-DDL interface works effectively in this environment and provides accurate distance location within 1 metre.

It is versatile in that it can both provide an alternative to Point Heat detectors in conventional (space) protection situations and it may also be readily installed in very close proximity to monitored hazards. The low maintenance requirement is useful in areas that have restricted access to personnel because of physical obstacles or the risk to health and safety, drainage collection points, cable service tunnels and inlets being typical examples.

LHDC can be installed on the ceiling in the tunnel above the roadways, cable trays, inlets, service tunnels and drainage points.

The Patol LHDC is designed to provide early detection of fire conditions and overheating in circumstances where other forms of detection would not be viable, due to the inability to sustain the environment requirements.

Patol LHDC offers extensive single zonal lengths which may be installed with the ability to trigger alarms for hot spots occurring on very small sections of the overall cable. The LHDC may be employed in a wide variety of applications but is particularly suited where there are harsh environmental conditions.

Patol's LDM-519-DDL controller with distance locator display can be configured to operate in two wire mode that emulates the operation of conventional heat detectors. As a result, it can be interfaced directly with fire control panels or as part of an addressable loop. Each device has a 4 digit LCD display which activates on fire condition and displays the distance into the zone the alarm has occurred. This distance can also be integrated into a SCADA system using 4-20mA output. Digital LHDC may be employed in lengths up to 2km (1999m). The unit has an adjustment to accommodate interposing cables.