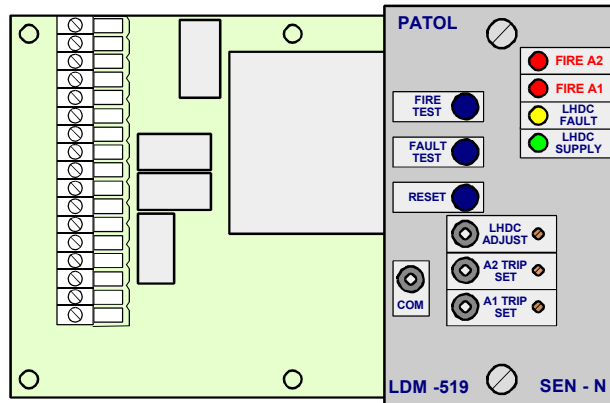


LDM-519-SEN-N LHDC MONITOR / CONTROLLER Fire Zone Monitoring with Two Level Alarm Set Points



The module is designed to monitor a length of analogue Linear Heat Detecting Cable (LHDC) for elevated temperature states. Two adjustable levels of alarm are provided (A1 & A2), one of which may be optionally employed as a "Pre-Alarm".

The LHDC is also monitored for fault conditions (open & short circuit).

The unit can be provided fully cased or as a PCB module. Both formats are electrically and mechanically compatible with many existing installations and may be readily used as service replacement spares.

The primary features of the control units are:-

- .. **Linear Heat Detecting Cable fire & fault monitoring.**
- .. **Two adjustable levels of alarm set point / Pre-Alarm operation.**
- .. **Wide d.c. supply operation - 20V to 60V**
- .. **LED indication of Fire, Fault & Supply status.**
- .. **Selectable latching / auto-reset operation.**
- .. **Integral Test & Reset push-buttons - Remote Test & Reset signal inputs.**
- .. **Volt free contact outputs for Pre-Alarm (A1), Fire(A2), & Fault conditions.**
- .. **Maintenance test meter jacks for LHDC analogue output, and Alarm set points (A1 & A2).**
- .. **PCB module readily installed in existing FDS-5 housings.**
- .. **Cased units available with mounting points identical to FDS-5 enclosures.**

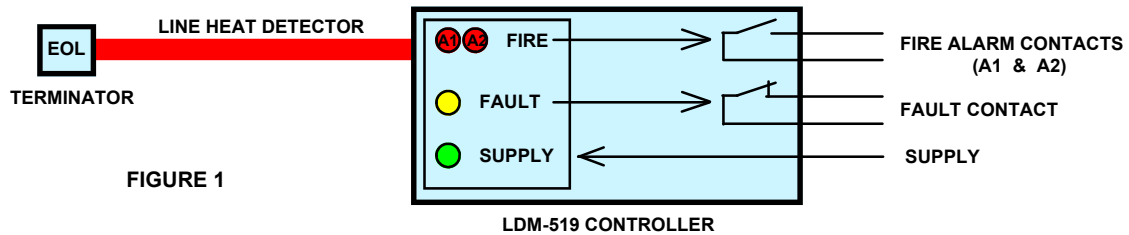
LDM-519-SEN-N LHDC CONTROLLER

Fire Zone Monitoring Unit with Two Level Alarm Set Points

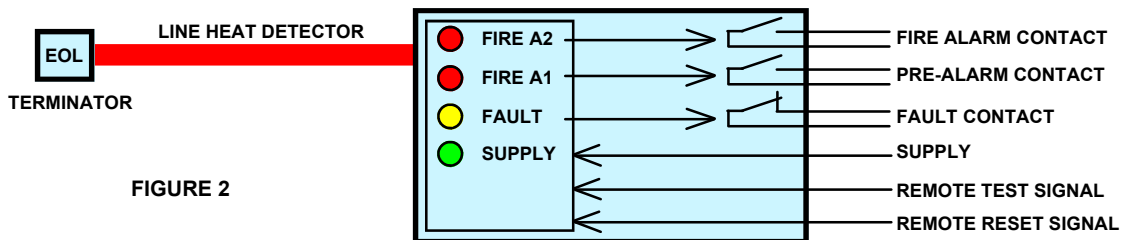
Principles

The unit is operated in conjunction with a length of Line Heat Detector Cable (LHDC) and an 'end of line' (EOL) terminator. The LHDC is a coaxial cable which may be installed in considerable lengths whilst maintaining the ability for the monitoring unit to provide early warning of 'hot spots' and fire conditions on short sections of the overall zone length. Reference should be made to the (separate) data sheet on the Line Heat Detector for specification of its performance.

Figure 1 shows a typical minimum system where a single alarm level is employed by adjusting the A2 set-point less than that for A1. Thus both A1 & A2 trips occur simultaneously - **At the A1 set point.**



In some applications abnormal ambient conditions can arise that must be notified, but for which immediate alarm operation would not be appropriate. This may be achieved by using A1 Pre-Alarm (e.g. A1 contacts combined with A2-Fire signal) Figure 2 shows a more comprehensive configuration including Pre Alarm.



Connections

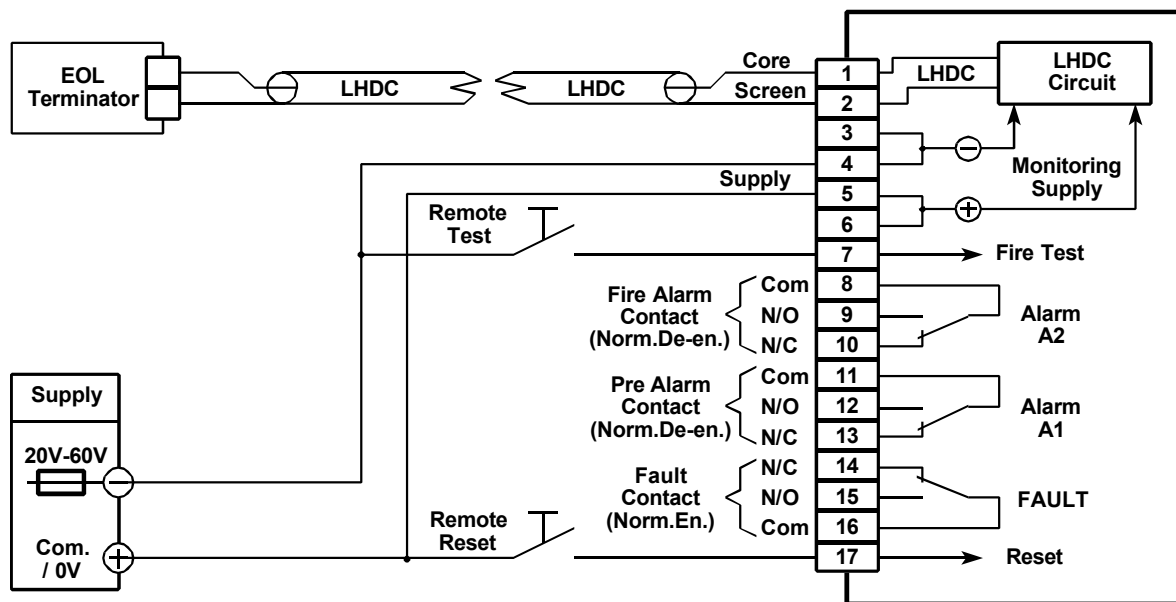


Figure 3 - LDM-519 Module terminals showing typical external connections.

LDM-519-SEN-N LHDC CONTROLLER
 Fire Zone Monitoring Unit with Two Level Alarm Set Points

Module Arrangement

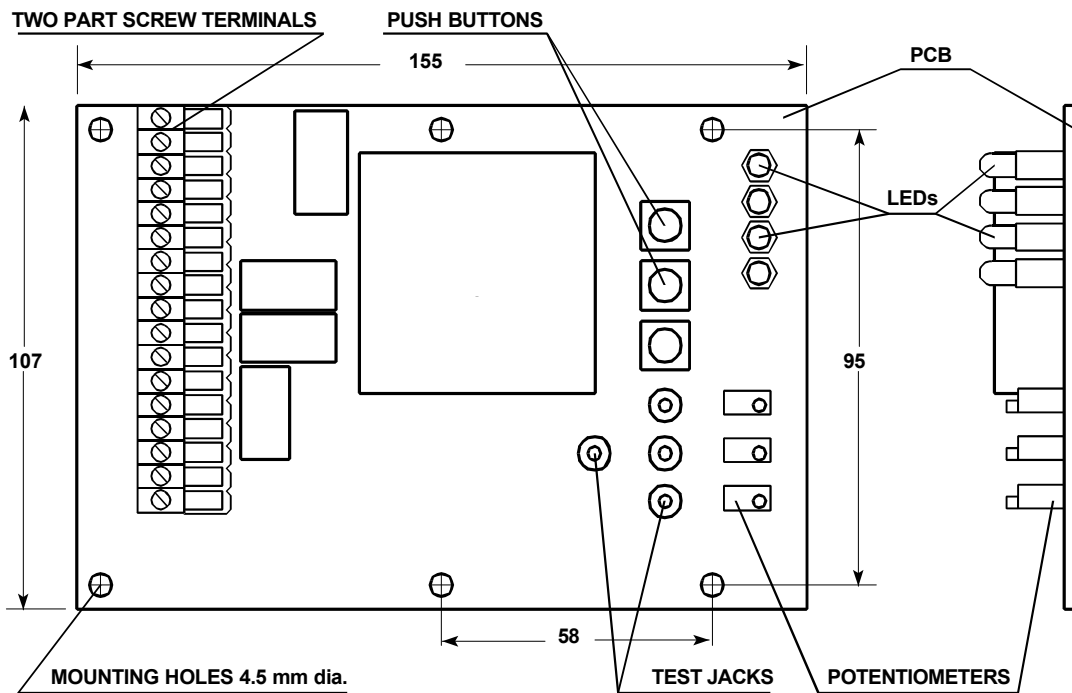


Figure 4 - PCB Module - Shown without fascia plate

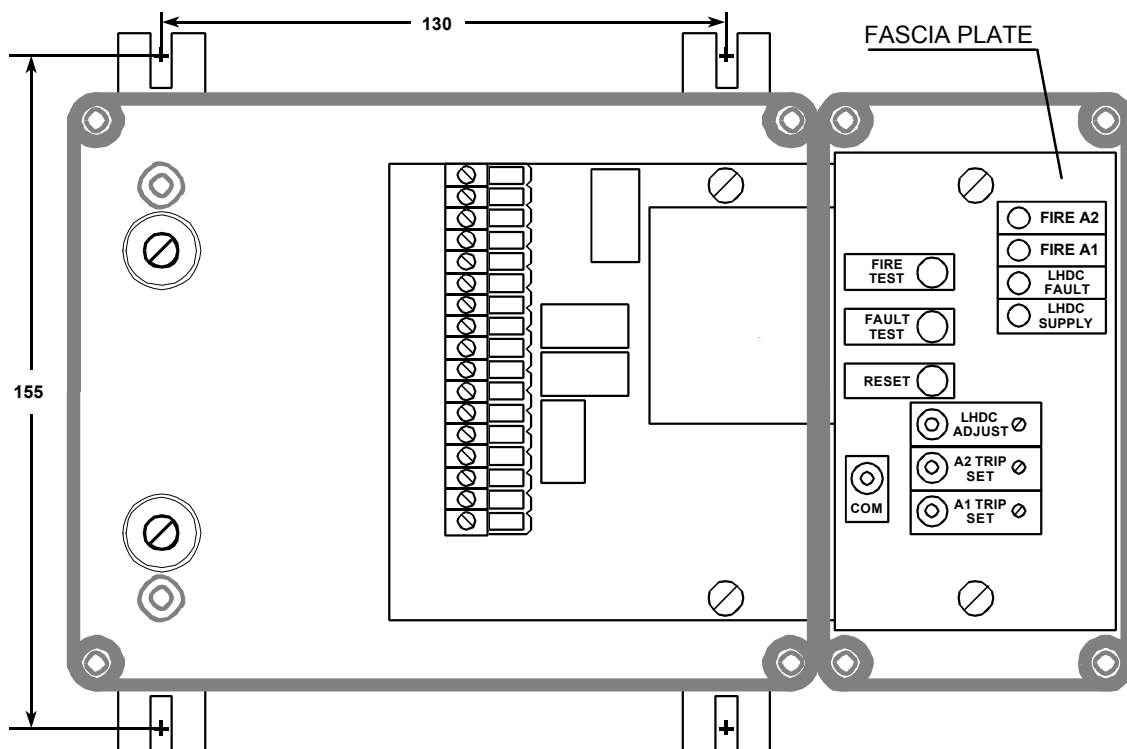


Figure 5 - LDM-519 Module installed as retrofit to existing FDS-5 Housing

LDM-519-SEN-N LHDC CONTROLLER
 Fire Zone Monitoring Unit with Two Level Alarm Set Points

Cased Units - Enclosures

The design of the LDM-519-SEN-N module is such that it may be fitted to a variety of enclosures. Demands in respect of environmental, aesthetic or project specific requirements are readily accommodated by the ease with which the module may be fitted to virtually any enclosure type or control panel configuration. Patol should be consulted with regard to special housing provisions.

The module is also an enhanced and current technology 'replacement spare' (retro-fit) to existing FDS-5 housings. (see Figure 5 - Page 3) The unit can also be provided in this cased configuration.

Figures 6 & 7 show another of the 'standard' cased module configurations. This particular type has two notable features. Firstly the enclosure may be cabled prior to fitting of the LDM-519 module. Secondly the mounting points are identical to FDS-5 housings thus making the unit ideal as a service spare.

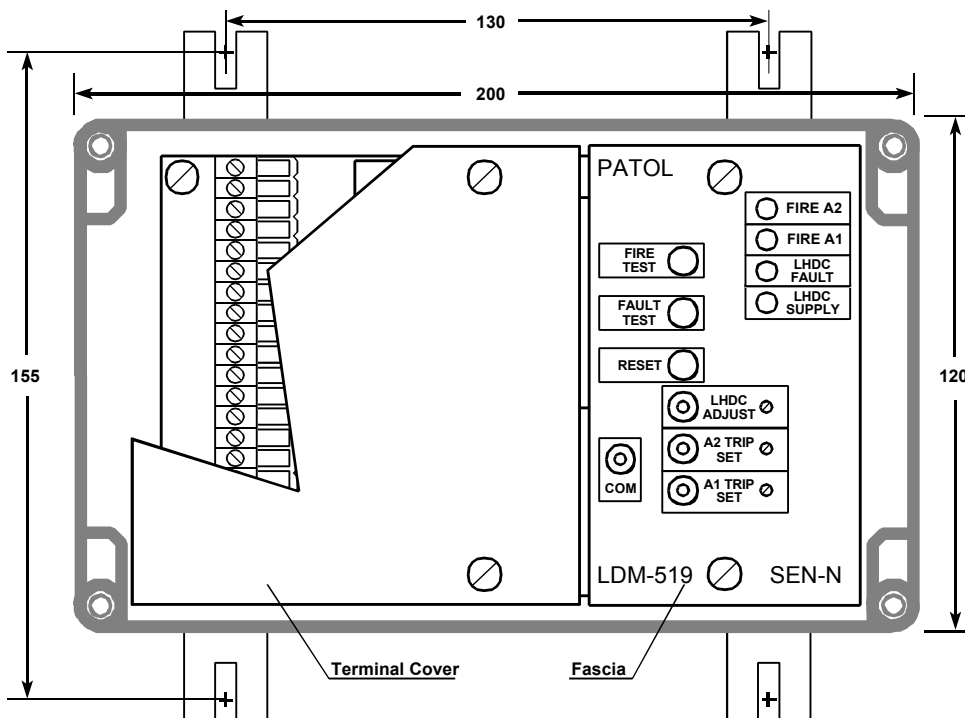


Figure 6 - Enclosure front view with cover removed.

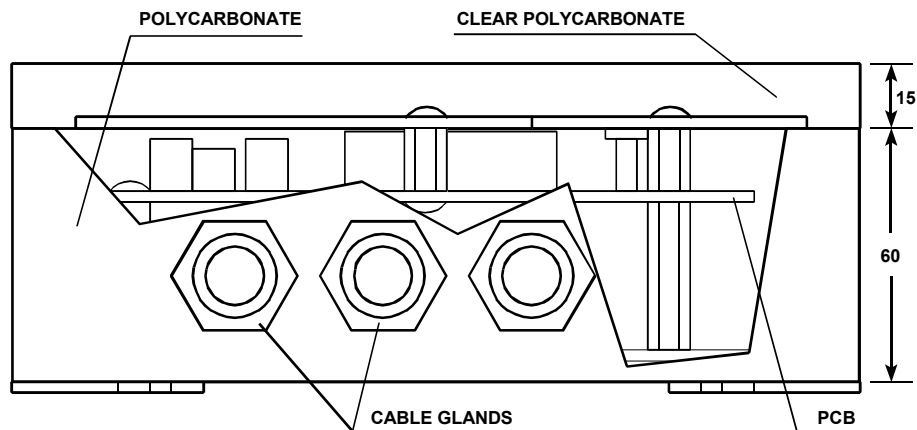


Figure 7 - Enclosure bottom view showing gland positions and internal arrangement

LDM-519-SEN-N LHDC CONTROLLER
 Fire Zone Monitoring Unit with Two Level Alarm Set Points

Operational Specification

Supply: +ve common to LHDC screen
 Voltage: -20 Vdc to -60 Vdc
 Current: Quiescent - < 18 mA
 Max (Alarm) - < 60 mA

LHDC Input: Two levels of alarm - A1 & A2
 Fault monitored. - O/C & S/C

Relay Contacts: 1 A @ 24 Vdc / 120 Vac
 Fire Alarm A2: 1 set - One pole change over
 Fire Alarm A1: 1 set - One pole change over
 Fault: 1 set - One pole change over
 Remote Fire Test: Switch to -ve Monitoring Sup.
 Remote Reset I/P Switch to +ve Monitoring Sup.

Indications:
 Pre Alarm (A1): 1 off - Red LED
 Fire Alarm (A2) 1 off - Red LED
 Fault: 1 off - Yellow LED
 Supply: 1 off - Green LED

Controls:
 Fire Test P.B. : Simulates LHDC fire condition
 Fault Test P.B. : Simulates LHDC fault warning
 Reset P.B. : Resets fire alarm

Adjustments & Test Points:
 LHDC Analogue: Potentiometer & 2mm socket
 A1 Trip Set: Potentiometer & 2mm socket
 A2 Trip Set: Potentiometer & 2mm socket
 Meter Common 2mm meter probe socket

Module selector links

The LDM-519-SEN-N module is fitted with a jumper link which permits selection of operating parameters. J1 permits the selection of Latching or Auto-Resetting modes for both A1 & A2 alarms.

Figure 8 shows the Latching / Auto-Reset options as set by J1.

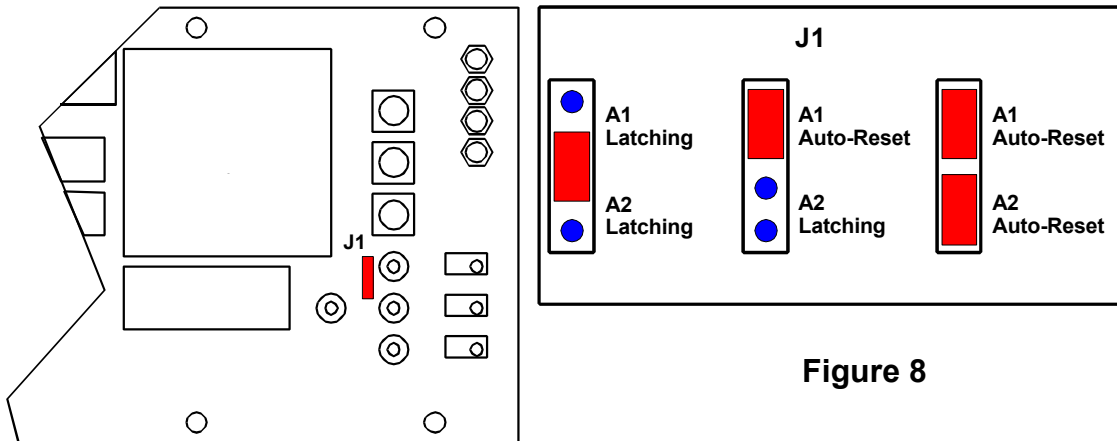


Figure 8

LHDC Analogue & Trip Set Adjustments

and potentiometers located on the fascia. All readings should be made with respect to the common socket.

Reference should be made to the data sheet on LHDC for the expected performance and associated trip settings

Where a "two level" system is implemented A2 should be set at a greater level than A1.

If a single trip level is required A1 should be set to the required trip level.

A2 should be set slightly less than A1. Both A1 & A2 alarms will then occur at the A1 set point.

These are conducted by means of a high impedance volt meter using the 2mm meter sockets (test points)