

Resettable Analogue LHDC Installation and Commissioning

System Description:

To use Patol Resettable Analogue Linear Heat Detection Cable various system components are required. Each length of LHDC used acts as a heat detector when combined with an LHDC Monitor / Controller and an End-of-Line Terminator, where the LHDC is the sensor. The Monitor / Controller can interface to a fire alarm panel or process control system employed at site.

With Resettable Analogue LHDC, consideration must be given to the ambient temperature in the area in which the LHDC will be installed. This will determine the maximum length of LHDC that can be installed in any single zone. For more detailed information, please refer to “D1167 Analogue LHDC Data Sheet”.

If the installation is within an environment that is classified as a hazardous area then a suitable shunt diode safety barrier must be employed to provide an intrinsically safe installation. For further details please refer to the application note “D1228 LHDC in Hazardous Areas”.

Installation:

The LHDC should be installed in a manner that complies with the recommendations provided in the “D1224 Guidelines for Routing of Linear Heat Detection Cable” application note. This is to ensure that a reliable and easy to maintain installation is achieved.

Patol supply a range of mounting clips and brackets that are suitable for most applications. Please refer to “D1183 Clips and Fixings” for information on each particular mounting clip / bracket. It is of particular importance that LHDC is not fixed to any material that can act as a heat sink as this will impair its sensitivity. Therefore, neoprene or PTFE sleeves should be used around the LHDC when it is in contact with metal clips and brackets. Mechanical tightening of the cable ties must be avoided, as this will severely compress the LHDC and trigger a Fault / Fire.

As Resettable Analogue LHDC is a high impedance system, care must be taken at all enclosure cable entry points, to ensure protection against the ingress of dirt or moisture is maintained.

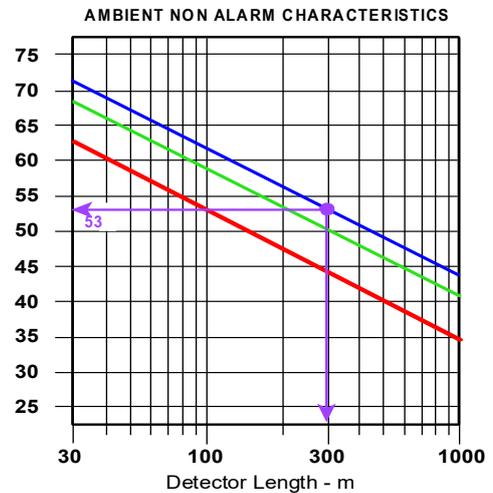
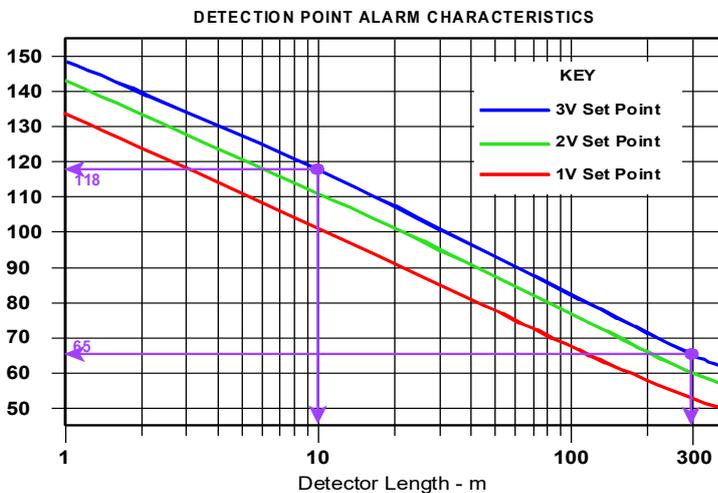
The LHDC Monitor / Controller can easily connect to a fire alarm panel or process control system. For details on connections please refer to the relevant Monitor / Controller data sheet.

Commissioning:

Commissioning of a Patol Resettable Analogue LHDC system is a simple operation that will give many years of reliable operation when performed correctly.

The only tools required are a high impedance Voltmeter and the supplied trimming tool to adjust the potentiometers on the fascia. For information relating to jumper link settings on LHDC Monitors / Controllers, please refer to the relevant data sheet.

Using the graphs below find the trip level voltage that suits the required alarm detection level and also meets the requirements of the LHDC zone length and maximum ambient temperature for the zone.



Care must be taken to avoid undesired alarms or trigger / release of interconnected extinguishant during commissioning of the LHDC system, which could occur whilst making alarm level adjustments.

Zero Level Adjustment

1. Connect the End-of-Line Terminator directly to the LHDC Monitor / Controller so that the LHDC is out of circuit.
2. Connect the Voltmeter probes between the "COMMON" or "COM" terminal and the "LHDC ADJUST" terminal. This may alternatively be labelled "LHDC" or "ANALOGUE".
3. Adjust the "LHDC ADJUST" (or "LHDC" or "ANALOGUE") potentiometer until the Voltmeter reads 0V.
4. Operate the "Fire Test" pushbutton and note whether the Voltmeter indicates a positive or negative Voltage swing. Operate the "Reset" pushbutton to return to the normal condition.

Setting Alarm / Trip Levels

5. All Alarm / Trip level adjustments must be set to the same polarity as indicated by the "Fire Test" operation in step 4.
6. Connect the Voltmeter between the "COMMON" or "COM" terminal and the "TRIP", "A1" or "A1 TRIP SET" terminal as appropriate.
7. Adjust the "TRIP" ("A1" or "A1 TRIP SET") potentiometer to the required trip level determined from the graph on the previous page.

If the Monitor / Controller is capable of a Dual Alarm / Trip Level, then follow points 8 and 9. If not then please continue to point 10.

8. Connect the Voltmeter between the "COMMON" or "COM" terminal and the "TRIP", "A2" or "A2 TRIP SET" terminal as appropriate.
9. Adjust the "TRIP" ("A2" or "A2 TRIP SET") potentiometer to the required trip level determined from the graph on the previous page.

System Start - Up

10. Re-connect the LHDC to the circuit.
11. After switch on, allow the system to settle for a period of at least 2 hours.
12. Ensure the LHDC monitor / Controller is in a normal state with no faults or alarms indicated.
13. If reassurance is desired, measure the voltage between the "COMMON" (or "COM") terminal and the "LHDC ADJUST" (or "LHDC" or "ANALOGUE") terminal. The Voltage indicated should be appropriate for the zone length and actual ambient temperature according to the graph in the Analogue LHDC data sheet.
14. Ensure the LHDC Monitor / Controller correctly indicates a Fire Alarm when the "Fire Test" pushbutton is operated and that it returns to the normal condition once reset.
15. All alarm and extinguishing functions may now be enabled.

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