

# ALARMLINE II

## ADLCU Digital LHD Alarm Distance Locator Installation and Operation Manual

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### Contact information

For contact information, see: [www.utcssecurityproducts.eu](http://www.utcssecurityproducts.eu).

Technical helpline: +44 (0) 191 5136124

Sales enquiries: +44 (0) 1844 265003

e-mail: [kidde\\_airsense\\_techsupport@kiddeuk.co.uk](mailto:kidde_airsense_techsupport@kiddeuk.co.uk)

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This document is for use with Alarmline II Digital LHD cable.

## Important information

### Limitation of liability

To the maximum extent permitted by applicable law, in no event will UTCFS be liable for any lost profits or business opportunities, loss of use, business interruption, loss of data, or any other indirect, special, incidental, or consequential damages under any theory of liability, whether based in contract, tort, negligence, product liability, or otherwise. Because some jurisdictions do not allow the exclusion or limitation of liability for consequential or incidental damages the preceding limitation may not apply to you. In any event the total liability of UTCFS shall not exceed the purchase price of the product. The foregoing limitation will apply to the maximum extent permitted by applicable law, regardless of whether UTCFS has been advised of the possibility of such damages and regardless of whether any remedy fails of its essential purpose.

Installation in accordance with this manual, applicable codes, and the instructions of the authority having jurisdiction is mandatory.

While every precaution has been taken during the preparation of this manual to ensure the accuracy of its contents, UTCFS assumes no responsibility for errors or omissions.

### Advisory messages

Advisory messages alert you to conditions or practices that can cause unwanted results. The advisory messages used in this document are shown and described below.

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**WARNING:** Warning messages advise you of hazards that could result in injury or loss of life. They tell you which actions to take or to avoid in order to prevent the injury or loss of life.

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**Caution:** Caution messages advise you of possible equipment damage. They tell you which actions to take or to avoid in order to prevent the damage.

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**Note:** Note messages advise you of the possible loss of time or effort. They describe how to avoid the loss. Notes are also used to point out important information that you should read.

## Product description

The ADLCU alarm point distance locator allows accurate location of an alarm point along a length of Linear Heat Detection (LHD) cable.

Location of the alarm point may not always be possible by visual inspection on low temperature LHD cable due to the cable triggering an alarm before physical damage has occurred or, on longer lengths of LHD cable, it may be too time consuming or inconvenient.

The ADLCU is designed exclusively for use with Alarmline II Digital Linear Heat Detection sensor cables. The ADLCU is designed to interface between a listed fire alarm control panel, releasing control panel, or addressable module and a single length of sensor cable.

An important design feature of the ADLCU is the continued correct operation of the fire alarm control panel, releasing control panel, or addressable module regardless of faults which may occur in the ADLCU (such as loss of power to the unit).

Each unit complies with the relevant FM standard and is enclosed in an IP65 rated enclosure.

### Features

- Alarm point distance locating device for use with Alarmline II Digital LHD cables 68°C (154°F), 78°C (172°F), 88°C (190°F), 105°C (221°F), or 185°C (365°F)
- Alternating metres/feet display of alarm point
- Cable selection
- Leader cable calibration
- Detection of alarm point from 100 to 3000 m (300 to 10000 ft.)
- Installation settings saved in event of power loss
- IP65/IK08 rated enclosure for indoor/outdoor use with 4 sizes of M knockouts
- Simple installation and operation
- Backlit 16x2 character LCD
- Continued correct operation of the fire alarm control panel, releasing control panel, or addressable module regardless of faults which may occur in the ADLCU (such as loss of power to the unit)
- FM approved (for indoor use only)

### Notes:

- Any fire alarm control unit connected to the ADLCU must be FM approved
- Any power supply used to deliver power to the ADLCU must be ANSI/UL 1481 certified

# Technical specifications

**Table 1: ADLCU enclosure**

Dimensions (W x H x D)	180 x 130 x 78 mm (7 x 5 x 3 in.)
Rating	IP65/IK08 rated polycarbonate with hinged removable cover and hinged removable internal front plate
Finish	Light grey with smoked grey cover
Display	2 line, 16 character backlit display showing alarm point switching between metres and feet, installed options, and scrolling message when in normal operation
Approvals	FM Class 3210 (Heat Detectors for Automatic Fire Signalling)
Knockouts	
Long side	3 x M25 (25 mm), 3 x M16 (16 mm)
Short side	2 x M32 (32 mm), 2 x M20 (20 mm)

**Table 2: Power requirements [1]**

Operating voltage	9 to 28 VDC
Current consumption [2]	
Normal operation (LCD backlight off)	<10 mA
Alarm point locating (LCD backlight on)	<90 mA
Power supply transient protection	1500 W for 1 ms
Operating Temperature Range	0 to 49°C (32°F to 120°F)
Accuracy (% of alarm point distance)	
15°C to 25°C (59°F to 77°F)	< ±5% of alarm point distance
0°C to 49°C (32°F to 120°F)	< ±6.5% of alarm point distance

[1] If powered from the fire alarm control the ADLCU should be connected to the AUX. power source (which must meet the above requirements)

[2] All operating voltages

**Table 3: Terminals**

Spacing	9.52 mm (0.375 in.)
Rating	25 A at 300 VDC
Wire size	12 to 22 AWG
Insulation resistance	5000

# Installation

## Electrical safety

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**WARNING:** Electrocutation hazard. To avoid personal injury or death from electrocution, remove all sources of power and allow stored energy to discharge before installing or removing equipment.

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**Caution:** Equipment damage hazard. This product is sensitive to electrostatic discharge (ESD). To avoid damage, follow accepted ESD handling procedures.

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## Installation

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**Caution:** The ADLCU must be installed in accordance with NFPA 70, 72, and authorities having jurisdiction.

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The ADLCU may be installed in two configurations, as shown below.

Installation	Interface	Configuration
Type 1	Fire control, releasing panel, addressable module	Leader cable with power from interface > ADLCU > Alarmline II Digital LHD cable
Type 2	Fire control, releasing panel, addressable module	Leader cable with power from interface > ADLCU > leader cable > Alarmline II Digital LHD cable

For either installation type the ADLCU may also be powered from a separate listed power supply.

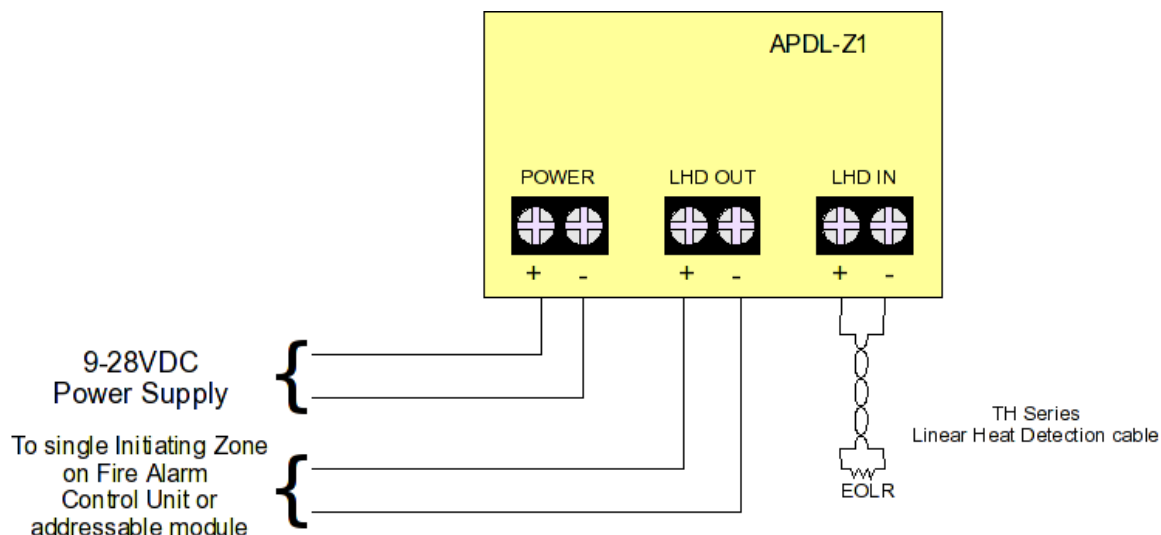
### Type 1 installation

Connect the LHD cable directly to the ADLCU unit via the LHD IN terminals (see Figure 1 on page 6).

Connect the ADLCU to the fire alarm control panel, releasing panel, or addressable module via the LHD OUT terminals.

Supply power from the auxiliary power output of the fire alarm control panel, releasing panel, or addressable module or from a separate listed power supply.

Figure 1: Type 1 installation wiring



For a type 1 installation, the following steps should be followed during the first installation:

1. Apply power to the ADLCU

The display shows “Installation” for approximately 2 seconds.

The display then shows “Cal Leader Cable” on the top line and “Yes” on the bottom line.

2. Press the SELECT button to change the bottom line to “No”, and then press the SET button.

The display shows “Calibrated” on the top line and “0 mV” on the bottom line.

3. Press the SET button again to continue.

The display shows “Select Cable” on the top line and “68°C/154°F” on the bottom line.

4. Press the SELECT button to select the cable, and then press the SET button to confirm your selection.

The message “Alarm Point Distance Locator - ” scrolls across the top line and “Normal Operation” on the bottom line

If the unit has been installed and power is being restored:

- The display shows “Installed” on the top line for approximately 2 seconds.
- The display shows “Leader Cable Cal” on the top line and “0 mV” on the bottom line for approximately 2 seconds.
- The display shows “Cable Selection” on the top line and the cable type selected at installation on the bottom line for approximately 2 seconds.
- The message “Alarm Point Distance Locator - ” scrolls across the top line and “Normal Operation” on the bottom line.

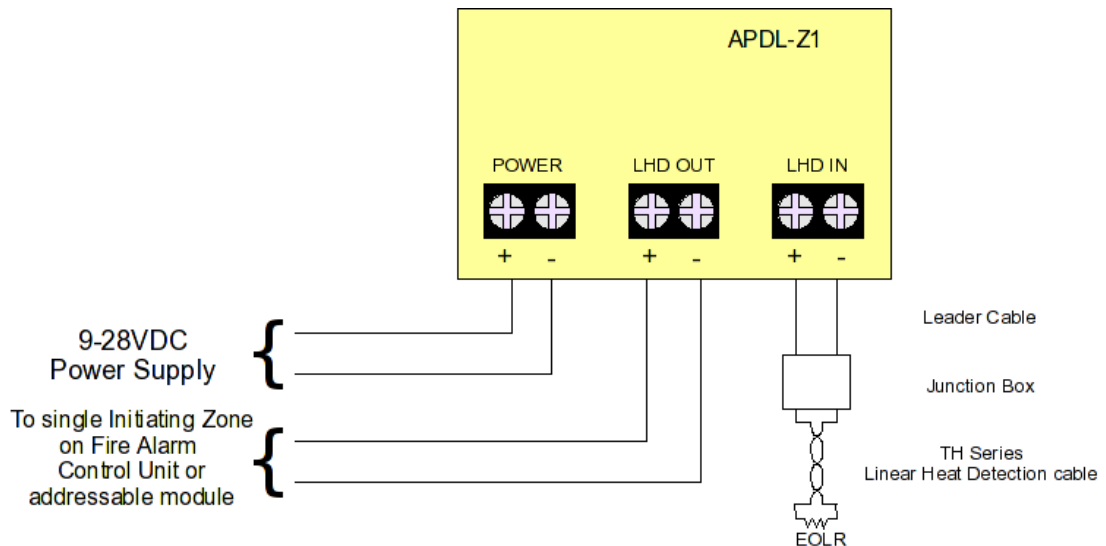
## Type 2 installation

Connect a leader cable between the LHD cable and ADLCU unit via the LHD IN terminals (see Figure 2 below).

Connect the ADLCU to the fire alarm control panel, releasing panel, or addressable module via the LHD OUT terminals.

Supply power from the auxiliary power output of the fire alarm control panel, releasing panel, or addressable module or from a separate listed power supply.

Figure 2: Type 2 installation wiring



For a type 2 installation, the following steps should be followed during the first installation:

1. Apply power to the ADLCU.

The display shows “Installation” for approximately 2 seconds.

The display then shows “Cal Leader Cable” on the top line and “Yes” on the bottom line.

2. For the calibration procedure, ensure that the two ends of leader cable are connected together at the junction box.

3. Hold down the Distance Locate switch, and then press the SET button.

The display shows “Calibrated” on the top line and a value (in mV) dependant on the length of leader cable on the bottom line.

Once the value is displayed the Distance Locate switch can be released.

4. Press the SET button again to continue.

The display shows “Select Cable” on the top line and “68°C/154°F” on the bottom line.

5. Press the SELECT button to select the cable, and then press the SET button to confirm your selection.

The message “Alarm Point Distance Locator - ” scrolls across the top line and “Normal Operation” on the bottom line

If the unit has been installed and power is being restored:

- The display shows “Installed” on the top line for approximately 2 seconds.
- The display shows “Leader Cable Cal” on the top line and the previously stored calibration value on the bottom line for approximately 2 seconds.
- The display shows “Cable Selection” on the top line and the cable type selected at installation on the bottom line for approximately 2 seconds.
- The message “Alarm Point Distance Locator - ” scrolls across the top line and “Normal Operation” on the bottom line.

## Operation

### Alarm point location

In the event of an alarm due to a short on the LHD cable, press and hold the Distance Locate switch.

After a short delay (less than 1 second) the LCD displays the message “Alarm Point” on the top line and, on the bottom line, the distance from the beginning of the sensor cable to the alarm point. The distance value toggles between metres and feet for as long as the Distance Locate switch is pressed.

While the Distance Locate switch is pressed the LHD cable is electrically disconnected from the fire alarm control panel, releasing panel, or addressable module and the monitoring equipment indicates a trouble condition – this is intentional and intended to ensure that the ADLCU is not accidentally left in the distance locate state. Once the Distance Locate switch is released, the LHD cable is electrically reconnected to the fire alarm control panel, releasing panel, or addressable module.

**Note:** During normal operation the LHD cable is electrically disconnected from the ADLCU unit and therefore tolerant of any faults which may occur in the unit.

### Resetting the ADLCU

To reset the unit, press the SET and SELECT buttons together while the unit is off and power the unit up while holding down the buttons.

The LCD briefly displays the message “Installed” and this changes to “Installation” after approximately 2 seconds (with the SET and SELECT buttons pressed down).

The installation and configuration procedure may then be repeated as required.



## Troubleshooting

If the ADLCU malfunctions after encountering a static discharge, correct operation of the unit can be restored by interrupting power to the unit for approximately 10 seconds.

If the configuration data is corrupted, the unit should be reset as described in “Resetting the ADLCU” on page 8.