

	Document: 400/001 APDL-Z1(M/PG)	Revision: Date:	9 27 th Jan 2009
Title: Installation, Operation and Instruction Manual		Page: 1 of 11	

Installation, Operation and Instruction Manual

APDL-Z1 Alarm Point Distance Locator for use with SafeCable (Flexible Elements) Ltd Linear Heat Detection Cable

ALL SPECIFICATIONS SUBJECT TO REVISION

	Document: 400/001 APDL-Z1(M/PG)	Revision:	9
		Date:	27 th Jan 2009
Title: Installation, Operation and Instruction Manual		Page: 2 of 11	

CONTENTS

	Page
General Description	3
Features	3
Specifications	4
Static Discharge Cautionary	5
Operating Instructions	6
Installation	6
Installation Type 1	7
Installation Type 2	9
Alarm Point Location	11
Resetting Installed Parameters	11

	Document: 400/001 APDL-Z1(M/PG)	Revision: Date:	9 27 th Jan 2009
Title: Installation, Operation and Instruction Manual		Page: 3 of 11	

GENERAL DESCRIPTION

The APDL-Z1(M/PG) is an Alarm Point Distance Locating device exclusively for use with SafeCable (Flexible Elements) Ltd Linear Heat Detection cables. The APDL-Z1(M/PG) is designed to interface between a listed fire alarm releasing or control panel or addressable module and a single length of Linear Heat Detection cable. An important design feature of the APDL-Z1 is the continued correct operation of the fire alarm control/releasing panel or addressable module regardless of faults which may occur in the APDL-Z1 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

SafeCable (Flexible Elements) Ltd Linear Heat Detection cables:

TH 68°C/154°F

TH 78°C/172°F

TH 88°C/190°F

TH 105°C/221°F

Alternating metres/feet display of alarm point

Cable selection

Leader cable calibration

Detection of alarm point from 100m – 3000m (300ft – 10000ft)

Installation settings saved in event of power loss

IP65/IK08 rated enclosure for indoor/outdoor use with 4 sizes of M or PG knock-outs

(**N.B.** FM Approved for indoor use only).

Simple installation and operation

Backlit 16x2 character LCD display

Continued correct operation of fire alarm control/releasing panel or addressable module regardless of faults which may occur in the unit such as loss of power.

Notes

- Any fire alarm control unit connected to the APDL-Z1M/PG is to be FM approved
- Any power supply used to deliver power to the APDL-Z1M/PG is to be ANSI/UL 1481 certified.

	Document: 400/001 APDL-Z1(M/PG)	Revision: Date:	9 27 th Jan 2009
Title: Installation, Operation and Instruction Manual		Page: 4 of 11	

SPECIFICATIONS

Both APDL-Z1M and APDL-Z1PG Enclosures:	
Dimensions	W180mm x H130mm x D78mm (W7" x H5 1/8" x D3")
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 Signaling)	

Enclosure Knockout Sizes								
	APDL-Z1M				APDL-Z1PG			
	<i>M25 (25mm)</i>	<i>M16 (16mm)</i>	<i>M32 (32mm)</i>	<i>M20 (20mm)</i>	<i>PG13.5 (0.803")</i>	<i>PG9 (0.598")</i>	<i>PG21 (1.114")</i>	<i>PG16 (0.886")</i>
Long Side	3	3	-	-	3	3	-	-
Short Side	-	-	2	2	-	-	2	2

Power Requirements	
If powered from the fire alarm control unit the APDL-Z1 should be connected to the AUX. Power source which must meet the following requirements.	
Operating Voltage	9 – 28V DC
<i>Current Consumption (at all operating voltages)</i>	
Normal operation (LCD Back-light off)	< 10mA
Alarm point locating (LCD Back-light on)	< 90mA
Power supply transient protection	1500W for 1ms

Operating Temperature Range	0 – 49°C (32°F – 120°F)
Accuracy (% of alarm point distance)	
15°C - 25°C (59°F – 77°F)	< ±5% of alarm point distance
0°C – 49°C (32°F – 120°F)	< ±6.5% of alarm point distance

Terminal Blocks	
Spacing	0.375" (9.52mm)
Rating	25A at 300VDC
Wire Size	12-22AWG
Insulation Resistance	5000

	Document: 400/001 APDL-Z1(M/PG)	Revision: Date:	9 27 th Jan 2009
Title: Installation, Operation and Instruction Manual		Page: 5 of 11	

STATIC DISCHARGE CAUTIONARY

The following items are cautionary notes that will help prevent equipment damage or malfunction caused by static discharge.

CAUTION

Static charges produce voltages high enough to damage electronic components. Follow these precautions when installing, servicing, or operating the APDL:

- Work in a static-free area.
- Discharge any static electricity you may have accumulated.
- Discharge static electricity by touching a known, securely grounded object.
- Do not handle the printed circuit board (PCB) without proper protection against static discharge.

In the event that the APDL-Z1(M/PG) malfunctions after encountering a static discharge correct operation of the unit can be restored by interrupting power to unit for a brief period (approximately 10s). Setup information can be verified by following the steps on page 8 or 10. In the event of the setup information being corrupted the unit should be reset following the procedure on page 11 (*Resetting Installed Parameters*).

	Document: 400/001 APDL-Z1(M/PG)	Revision: Date:	9 27 th Jan 2009
Title: Installation, Operation and Instruction Manual		Page: 6 of 11	

OPERATING INSTRUCTIONS

The APDL-Z1(M/PG) 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.

INSTALLATION

The APDL-Z1 must be installed in accordance with NFPA 70, 72 and Authorities Having Jurisdiction.

The APDL-Z1 may be installed in two configurations:

1. Fire control/releasing panel/Addressable module
 Leader cable & power from above unit
 APDL-Z1
 SafeCable (Flexible Elements) Ltd Linear Heat Detection cable
 (See page 7 – Installation Type 1)

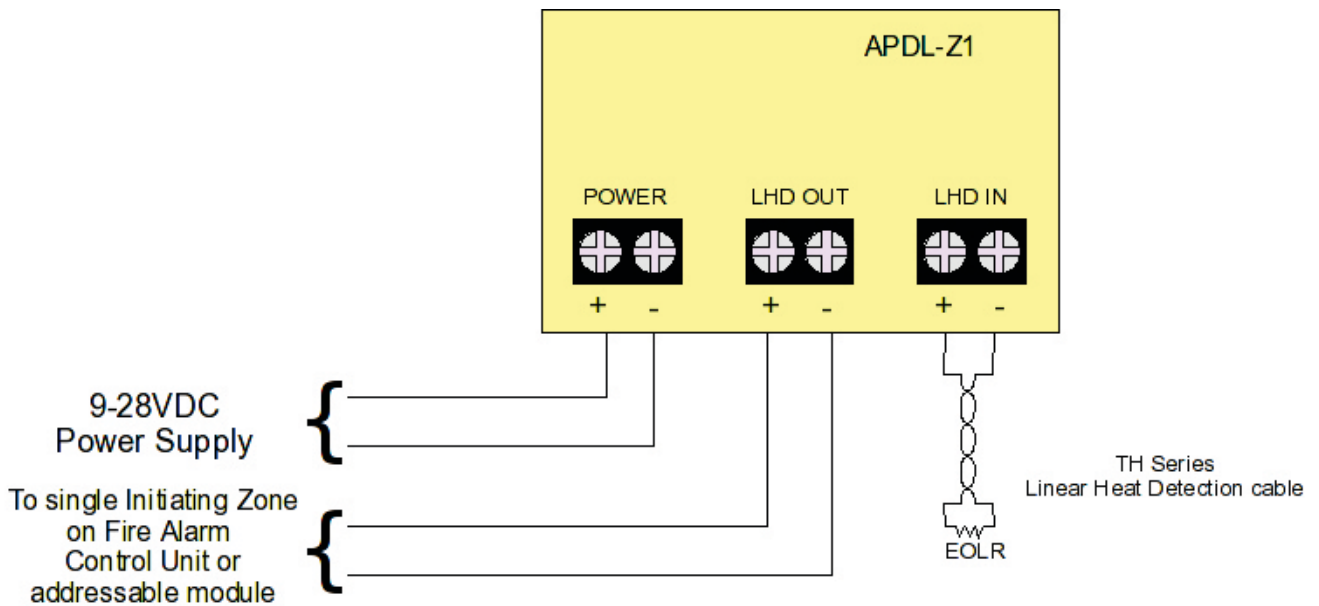
2. Fire control/releasing panel/Addressable module
 Leader cable & power from above unit
 APDL-Z1
 Leader cable
 SafeCable (Flexible Elements) Ltd Linear Heat Detection cable
 (See page 9 – Installation Type 2)

(Either of the above except the APDL is powered from a separate listed power supply)

	Document: 400/001 APDL-Z1(M/PG)	Revision: Date:	9 27 th Jan 2009
Title: Installation, Operation and Instruction Manual		Page: 7 of 11	

INSTALLATION TYPE 1

In the first installation the LHD cable is connected directly to the APDL-Z1 unit via the LHD IN terminals (see *Drawing 1 below*). The APDL-Z1 is then connected to the fire alarm control/releasing panel or addressable module via the LHD OUT terminals. Power is supplied either from the auxiliary power output of the panel or module or from a separate listed power supply.



Drawing 1: Wiring Diagram - Installation Type 1

In this configuration the following steps should be followed during the first installation:

1. Apply power to the APDL-Z1.
2. The display will show "**Installation**" for approximately 2 seconds.
3. The display will show "**Cal Leader Cable**" on the top line and "**Yes**" on the bottom line.
4. Press the *SELECT* button to change the bottom line to "**No**".
5. Press the *SET* button.
6. The display will show "**Calibrated**" on the top line and "**0 mV**" on the bottom line.
7. Press the *SET* button again to continue.
8. The display will show "**Select Cable**" on the top line and "**68 C/154 F**" on the bottom line.
9. Press the *SELECT* button to change the cable to the appropriate type.
10. Once the correct cable is selected press the *SET* button.
11. The display will scroll "**Alarm Point Distance Locator -**" across the top line and "**Normal Operation**" on the bottom line

	Document: 400/001 APDL-Z1(M/PG)	Revision: Date:	9 27 th Jan 2009
Title: Installation, Operation and Instruction Manual		Page: 8 of 11	

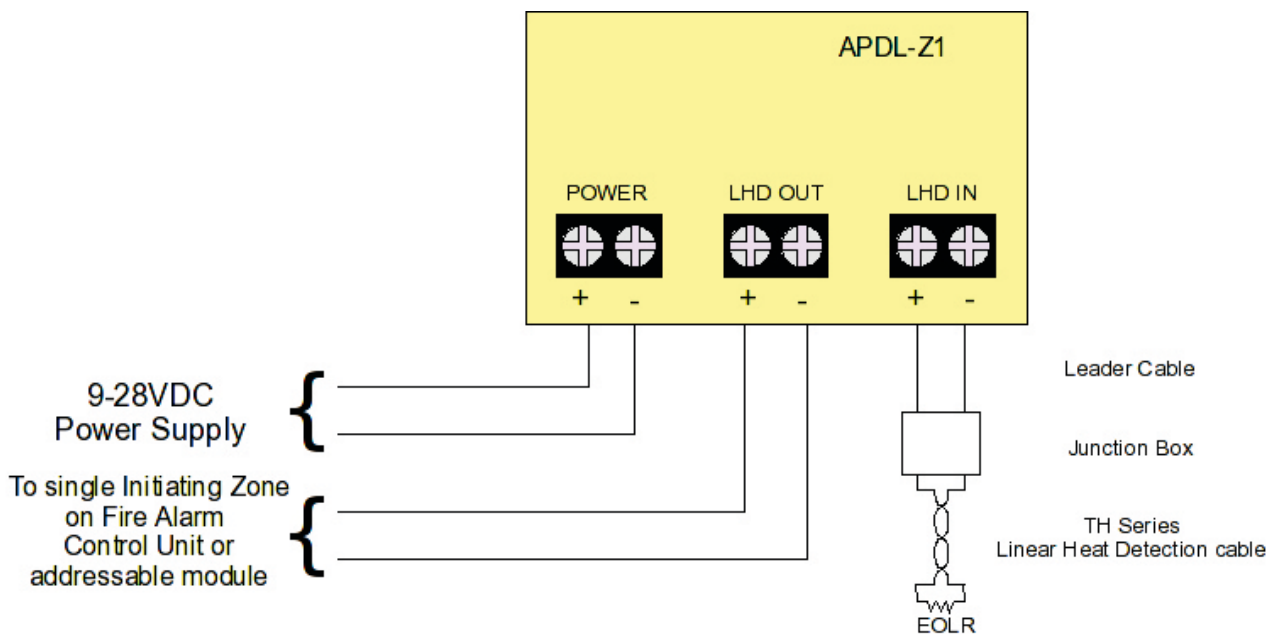
If the unit has been installed and power is being restored the following steps will occur:

1. The display will read "**Installed**" on the top line for approximately 2 seconds.
2. The display will read "**Leader Cable Cal**" on the top line and "**0 mV**" on the bottom line for approximately 2 seconds.
3. The display will read "**Cable Selection**" on the top line and the cable type which was selected at installation on the bottom line for approximately 2 seconds.
4. The display will scroll "**Alarm Point Distance Locator -**" across the top line and "**Normal Operation**" on the bottom line.

	Document: 400/001 APDL-Z1(M/PG)	Revision: Date:	9 27 th Jan 2009
Title: Installation, Operation and Instruction Manual		Page: 9 of 11	

INSTALLATION TYPE 2

In the second installation a leader cable is connected between the LHD cable and APDL-Z1 unit via the LHD IN terminals (see *Drawing 2 below*). The APDL-Z1 is then connected to the fire alarm control/releasing panel or addressable module via the LHD OUT terminals. Power is supplied either from the auxiliary power output of the panel or module or from a separate listed power supply.



Drawing 2: Wiring Diagram - Installation Type 2

In this configuration the following steps should be followed during the first installation:

1. Apply power to the APDL-Z1.
2. The display will show "**Installation**" for approximately 2 seconds.
3. The display will show "**Cal Leader Cable**" on the top line and "**Yes**" on the bottom line.
4. For the calibration procedure make sure the two ends of leader cable are connected together at the junction box.
5. Hold down the distance locate switch and press the *SET* button.
6. The display will show "**Calibrated**" on the top line and a value dependant on the length of leader cable in "**mV**" on the bottom line. (Once the value is display the distance locate switch can be released).
7. Press the *SET* button again to continue.
8. The display will show "**Select Cable**" on the top line and "**68 C/154 F**" on the bottom line.
9. Press the *SELECT* button to change the cable to the appropriate type.
10. Once the correct cable is selected press the *SET* button.
11. The display will scroll "**Alarm Point Distance Locator -**" across the top line and "**Normal Operation**" on the bottom line

	Document: 400/001 APDL-Z1(M/PG)	Revision: Date:	9 27 th Jan 2009
Title: Installation, Operation and Instruction Manual		Page: 10 of 11	

If the unit has been installed and power is being restored the following steps will occur:

1. The display will read "**Installed**" on the top line for approximately 2 seconds.
2. The display will read "**Leader Cable Cal**" on the top line and the previously stored calibration value in "**mV**" on the bottom line for approximately 2 seconds.
3. The display will read "**Cable Selection**" on the top line and the cable type which was selected at installation on the bottom line for approximately 2 seconds.
4. The display will scroll "**Alarm Point Distance Locator -**" across the top line and "**Normal Operation**" on the bottom line.

	Document: 400/001 APDL-Z1(M/PG)	Revision: Date:	9 27 th Jan 2009
Title: Installation, Operation and Instruction Manual		Page: 11 of 11	

ALARM POINT LOCATION

Once the APDL-Z1 unit has been correctly installed, during normal operation the display will scroll "**Alarm Point Distance Locator -**" across the top line and "**Normal Operation**" on the bottom line. In the event of an alarm being initiated on the fire alarm control/releasing panel due to a short on the linear heat detection cable the **Distance Locate** Switch should be held down. A slightly delay (less than 1 second) will occur while the unit calculates the distance to the alarm point before the display will read "**Alarm Point**" on the top line. The bottom line will then display the distance along the cable to the alarm point from the beginning of the linear heat detection cable. While the **Distance Locate** switch is held down the unit will cycle between displaying the alarm point distance in metres and feet.

During the time the **Distance Locate** switch is held down the linear heat detection cable will be electrically disconnected from the fire alarm control/releasing panel or addressable module and subsequently put the panel or module into a trouble condition. This is deliberate and intended and will ensure that the APDL-Z1 cannot be left in the **Distance Locate** position accidentally. Once the **Distance Locate** switch is released the linear heat detection cable will be electrically reconnected to the fire alarm control/releasing panel or addressable module. It should be noted that during normal operation the linear heat detection cable is completely electrically disconnected from the APDL-Z1 unit and therefore tolerant of any faults which may occur in the unit.

RESETTING INSTALLED PARAMETERS

If the incorrect cable type was selected or leader cable calibration was performed incorrectly it is possible to reset the APDL-Z1 unit to the initial state so the installation parameters may be reprogrammed. To perform a reset hold down the *SET* and *SELECT* buttons while the unit is off and power the unit up holding down the buttons. The display will read "**Installed**" and then change to "**Installation**" after approximately 2 seconds of holding the buttons down. The installation procedure should then be repeated according to the type of installation.