

## Technical Specification

Part Number:	BF430C/CC/SR	BF430C/CC/DR	BF430C/CC/DR/65	BF433C/CC/SR	BF433C/CC/DR	BF433C/CC/DR/65
Description:	Conv. Hi-Output Sounder, Shallow Base	Conv. Hi-Output Sounder, Deep Base	Conv. Hi-Output Sounder, Deep Base, IP55C	Conv. Hi-Output Sounder VAD, Shallow Base	Conv. Hi-Output Sounder VAD, Deep Base	Conv. Hi-Output Sounder VAD, Deep Base, IP55C
Certified Standards:	EN 54-3:2001 + A1:2002 + A2:2006			EN 54-3:2001 + A1:2002 + A2:2006 EN 54-23:2010		
LPCB Reference Number:	176q/02 ^	176q/03 ^	176q/04 ^	176r/03 ^	176r/04 ^	176r/05 ^
CPR Certificate Number:	2831-CPR-F2454 ^	2831-CPR-F2455 ^	2831-CPR-F2456 ^	2831-CPR-F2457 ^	2831-CPR-F2458 ^	2831-CPR-F2459 ^
Declaration of Performance (DoP):	DoP0000065 ^					
Supply Voltage:	18 to 30 Vdc					
(1) I <sub>max</sub> :	6 mA			20 mA (0.5 Hz) * 38 mA (1 Hz) *		
(2) I <sub>typ</sub> :	3.8 mA @ 18 Vdc * 5.5 mA @ 30 Vdc *			14.5 mA @ 18 Vdc (0.5 Hz) * 25 mA @ 18 Vdc (1 Hz) * 12.2 mA @ 30 Vdc (0.5 Hz) * 19.5 mA @ 30 Vdc (1 Hz) *		
Power @30 Vdc	165 mW			585 mW		
Environment Type (EN 54-3/23):	Type A (EN 54-3)	Type B (EN 54-3)		Type A (EN 54-3/23)	Type B (EN 54-3/23)	
VAD Cat. (EN 54-23) W-Class:	N/A			W-2.75-9 / W-4-4		
VAD Temporal Pattern:	N/A			1.0 / 0.5 Hz synchronised		
Cuboid Volume (W-Class):	N/A			161.5 m <sup>3</sup> / 64 m <sup>3</sup>		
Peak SPL at V <sub>max</sub> :	100 dB(A) @ 1 m ** synchronised					
Dimensions (incl. base):	108.3 mm dia., 99.5 mm deep	114 mm dia., 131.5 mm deep		108.3 mm dia., 99.6 mm deep	114 mm dia., 131.6 mm deep	
Weight:	215 g	300 g		230 g	315 g	
Mounting Type:	Wall					
Body Material / Colour:	Polycarbonate RAL 3001 Signal Red					
IP Rating (EN 60529):	IP21C	IP33C	IP55C	IP21C	IP33C	IP55C
Operating Temperature:	-10°C to +55°C (Type A)	-25°C to +70°C (Type B)		-10°C to +55°C (Type A)	-25°C to +70°C (Type B)	
Humidity:	Max. 95% RH (non-condensing)					

(1) I<sub>max</sub> - Maximum start surge, maximum running pulse current. Ensure that I<sub>max</sub> current for all devices on the sounder circuit does not exceed the current limitations of the fire alarm panel.  
 (2) I<sub>typ</sub> - Average running current.

\* @ maximum volume level

\*\* ±3 dB(A) when sounder set to PRIMARY TONE 3.

^ Certificates and DoPs available for download on C-TEC's website.

## Hi-Output Range Installation Instructions

## Conventional Audio Visual Devices

BF430C/CC/SR, BF430C/CC/DR, BF430C/CC/DR/65  
 BF433C/CC/SR, BF433C/CC/DR, BF433C/CC/DR/65

## Product Description

The ActiV Hi-Output range of conventional sounders and combined sounder visual alarm devices (VADs) are designed for use with C-TEC's range of fire panels and other compatible third-party panels. However, compatibility testing with third-party panels is recommended to ensure correct operation.

With a 100 dB(A) peak sound output @ 1 m, their purpose is to visually and audibly alert building occupants of a fire alarm. Units are supplied with either a shallow or deep base, in a red plastic enclosure.

The following variants are available:



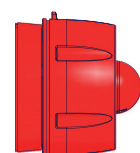
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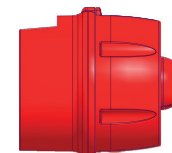
Part Number	Description
BF430C/CC/SR	Conventional Hi-Output Wall Sounder, Shallow Base, Red Enclosure, IP21C
BF430C/CC/DR	Conventional Hi-Output Wall Sounder, Deep Base, Red Enclosure, IP33C
BF430C/CC/DR/65	Conventional Hi-Output Wall Sounder, Deep Base, Red Enclosure, IP55C
BF433C/CC/SR	Conventional Hi-Output Wall Sounder VAD, Shallow Base, Red Enclosure, IP21C
BF433C/CC/DR	Conventional Hi-Output Wall Sounder VAD, Deep Base, Red Enclosure, IP33C
BF433C/CC/DR/65	Conventional Hi-Output Wall Sounder VAD, Deep Base, Red Enclosure, IP55C

### CONVENTIONAL SOUNDERS

### CONVENTIONAL SOUNDER VADs



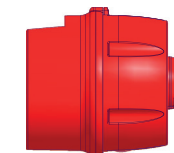
Shallow Base  
BF430C/CC/SR (Red)



Deep Base  
BF430C/CC/DR (Red)  
BF430C/CC/DR/65 (Red)



Shallow Base  
BF433C/CC/SR (Red)



Deep Base  
BF433C/CC/DR (Red)  
BF433C/CC/DR/65 (Red)

The devices offer low current consumption, high sound output, high efficiency VADs, 31 selectable primary tones with selectable secondary tone set, two selectable volume levels and three selectable VAD flash rates. Tones, volume levels and VAD flash rates are changed using the device's 8-way DIP switch.

All devices are third-party certified to EN 54-3 (Sounders) and EN 54-23 (Visual alarm devices - VADs).



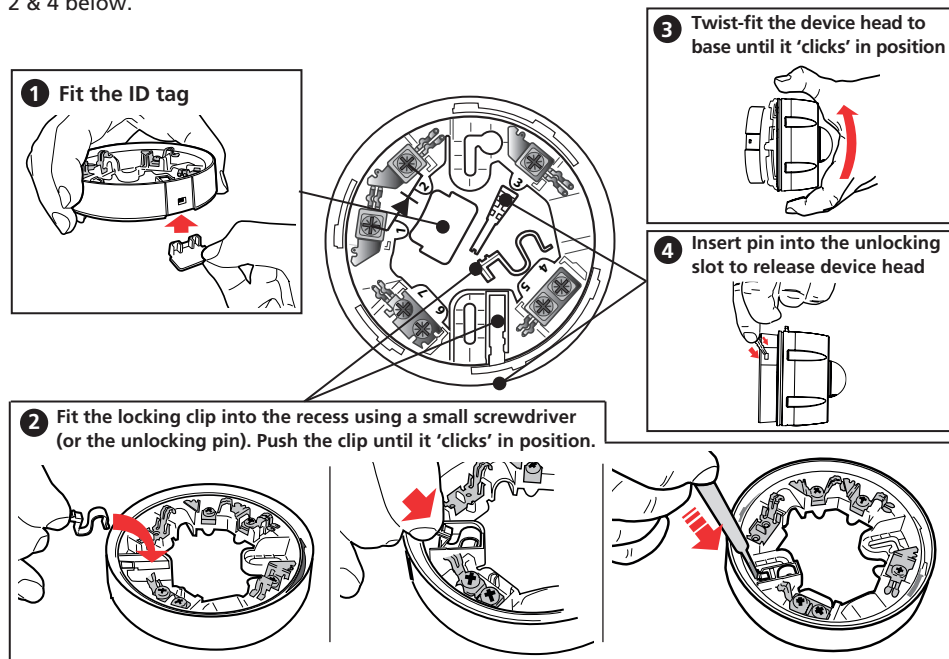
Manufacturer: Comptonics Limited (C-TEC), Challenge Way, Martland Park, Wigan, Lancashire WN5 0LD. www.c-tec.com

E&OE. No responsibility can be accepted by the manufacturer or distributors of these devices for any misinterpretation of this instruction, or for the compliance of the system as a whole. The manufacturer's policy is one of continuous improvement and we reserve the right to make changes to product specifications at our discretion and without prior notice.

## Base Accessories and Locking Mechanisms

### Shallow Base Type

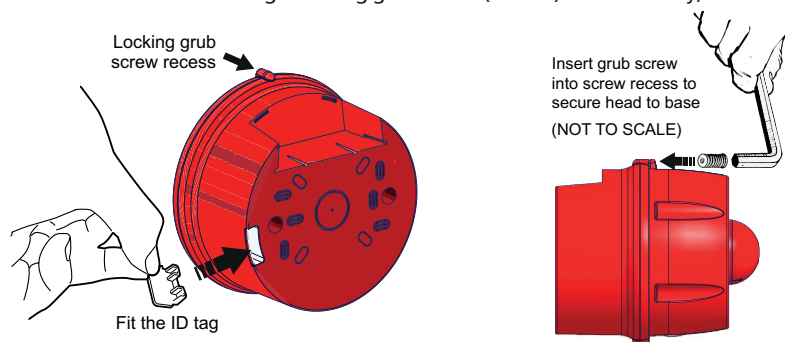
Each shallow base is supplied with a fitted device identification (ID) tag, head-base locking clip and unlocking pin. If required, remove these items from the base and use as shown in steps 1, 2 & 4 below.



### Deep Base Type

**Important Note:** For a deep base, only the ID tag detailed in step 1 above, may be fitted. **DO NOT** use the locking clip and unlocking pin detailed above, otherwise the head will be permanently locked in position.

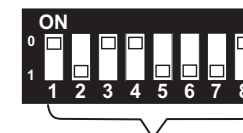
The base is secured to the head using a locking grub screw (M3x10) and Allen key, as shown below.



## DIP Switch Operation

Each device's operation is set using Bits 1 to 8 on its DIP switch.

DIP switch up (ON) = 1, DIP switch down (OFF) = 0.  
Use a small screwdriver to set the switches and refer to the tables below for settings. Ensure the switches are set before installation and fully pushed up or down.



Example above (assuming -Ve PRIMARY is wired to the base):

DIP Switch Setting = 1 1 0 0 0 1 1 0  
PRIMARY TONE 3 (C-TEC Fast Warble)  
Volume Level High  
VAD Flash Rate W-2.75-9 / W-4-4, 0.5 Hz

### Sounder Tones (DIP Switches 1 to 5)

PAIR	PRIMARY TONE	SECONDARY TONE	DIP SWITCH				
			1	2	3	4	5
0	Sounder Off	Sounder Off	0	0	0	0	0
1	C-TEC Evacuation Tone (675Hz for 0.5s, 925Hz for 0.5s) *	Steady Tone 2 (975Hz Continuous)	1	0	0	0	0
2	Alert (825Hz, 1s on, 1s off)	Steady Tone 2 (975Hz Continuous)	0	1	0	0	0
3	C-TEC Fast Warble (920Hz for 0.25s, 975Hz for 0.25s) *	Steady Tone 2 (975Hz Continuous)	1	1	0	0	0
4	Medium Sweep (800 - 970Hz at 1Hz)	Steady Tone 2 (975Hz Continuous)	0	0	1	0	0
5	Dutch Slow Whoop (sweep) (500-1200Hz for 3.5s, 0.5s off) *	Steady Tone 2 (975Hz Continuous)	1	0	1	0	0
6	DIN Tone (1200Hz - 500Hz for 1s) *	Steady Tone 2 (975Hz Continuous)	0	1	1	0	0
7	Swedish Alternating Tone (660Hz, 150ms on, 150ms off)	Steady Tone 2 (975Hz Continuous)	1	1	1	0	0
8	Swedish all clear (660Hz Constant on)	Steady Tone 2 (975Hz Continuous)	0	0	0	1	0
9	Swedish Local Warning (660Hz, 1.8s on, 1.8s off)	Steady Tone 2 (975Hz Continuous)	1	0	0	1	0
10	Swedish Pre-mess (660Hz, 6.5s on, 13s off, 20s period)	Steady Tone 2 (975Hz Continuous)	0	1	0	1	0
11	Swedish Turn Out (554Hz for 1s, 440Hz for 1s)	Steady Tone 2 (975Hz Continuous)	1	1	0	1	0
12	Swedish Tone (660Hz 0.5s on, 0.5s off)	Steady Tone 2 (975Hz Continuous)	0	0	1	1	0
13	Evacuation Tone (Apollo Comparable) (550Hz for 0.5s, 825Hz for 0.5s)	Steady Tone 2 (975Hz Continuous)	1	0	1	1	0
14	Alternating (Hochiki/Fulleon Comparable) (925Hz for 0.25s, 626Hz for 0.25s)	Steady Tone 2 (975Hz Continuous)	0	1	1	1	0
15	French Fire Tone (554Hz for 100ms / 440Hz for 380ms to 420ms) *	Steady Tone 2 (975Hz Continuous)	1	1	1	1	0
16	Australian Alert Tone AS1670 (ISO7731) (420Hz 0.625s on/off)	Steady Tone 2 (975Hz Continuous)	0	0	0	1	1
17	Australian Evacuation Tone AS1670 (500-1200Hz, 0.5s/ 0.5s OFF x 3/1.5s OFF)	Steady Tone 2 (975Hz Continuous)	1	0	0	1	1
18	Aus (fast rise sweep) (3x(500-1200Hz for 0.5s), 0.25s off)	Steady Tone 2 (975Hz Continuous)	0	1	0	1	1
19	NZ (slow rise sweep) (500-1200Hz for 3.75s, 0.25s off)	Steady Tone 2 (975Hz Continuous)	1	1	0	1	1
20	US Temporal LF(ISO 8201) (3x(970Hz, 0.5s on, 0.5 off), 1s off)	Steady Tone 2 (975Hz Continuous)	0	0	1	0	1
21	US Temporal HF(ISO 8201) (3x(2850Hz, 0.5s on, 0.5 off), 1s off)	Steady Tone 2 (975Hz Continuous)	1	0	1	0	1
22	Simulated Bell (n/a)	Steady Tone 2 (975Hz Continuous)	0	1	1	0	1
23	Singapore Alert Tone (1kHz, 2kHz 0.5s alternating)	Steady Tone 2 (975Hz Continuous)	1	1	1	0	1
24	PFEER Alert Tone (950Hz, 0.25s on, 0.25s off)	Steady Tone 2 (975Hz Continuous)	0	0	0	1	1
25	PFEER Alert Tone (970Hz, 1s on, 1s off)	Steady Tone 2 (975Hz Continuous)	1	0	0	1	1
26	ISO 8201 (3x(970Hz, 0.5s on, 0.5 off), 1s off)	Steady Tone 2 (975Hz Continuous)	0	1	0	1	1
27	ISO 8201 (3x(2850Hz, 0.5s on, 0.5 off), 1s off)	Steady Tone 2 (975Hz Continuous)	1	1	0	1	1
28	Steady Tone 1 (925Hz Continuous)	Steady Tone 2 (975Hz Continuous)	0	0	1	1	1
29	Steady Tone 2 (975Hz Continuous)	Steady Tone 2 (975Hz Continuous)	1	0	1	1	1
30	Steady Tone 3 (2850Hz Continuous)	Steady Tone 2 (975Hz Continuous)	0	1	1	1	1
31	Fast Sweep (2.5-2.85kHz at 9Hz)	Steady Tone 2 (975Hz Continuous)	1	1	1	1	1

\* Approved to EN 54-3. For SPL measurements refer to Document No. DFU4301010.

### Volume Level (DIP Switch 6)

VOLUME LEVEL	DIP SWITCH 6
Low Volume	0
High Volume *	1

\* Approved to EN 54-3

### VAD Flash Rate (DIP Switches 7 & 8)

FLASH RATE	DIP SWITCH 7 8
Off	0 0
W-2.75-9 / W-4-4, 0.5 Hz **	1 0
W-2.75-9 / W-4-4, 1 Hz	0 1
Power Save, 0.5 Hz	1 1

\*\* Approved to EN 54-23

## Maintenance

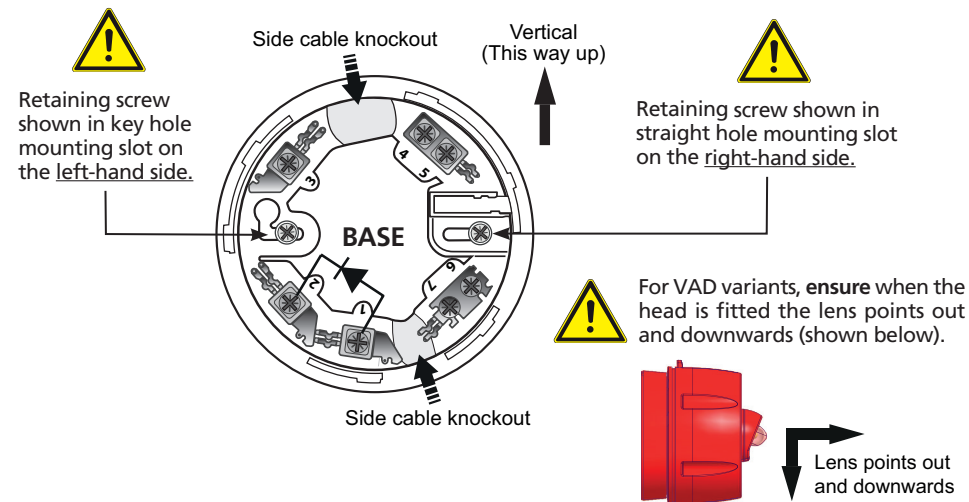
Periodic inspection, testing and maintenance of fire detection systems should be carried out in accordance with national, regional or local standards. In the UK the relevant standard is BS 5839-1 Fire detection and fire alarm systems for buildings. Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises.

Inspection and maintenance of the system should only be carried out by a competent person with specialised knowledge of fire detection and alarm systems. This is normally a competent service provider appointed to maintain the system.

## Wall Mounting Orientation

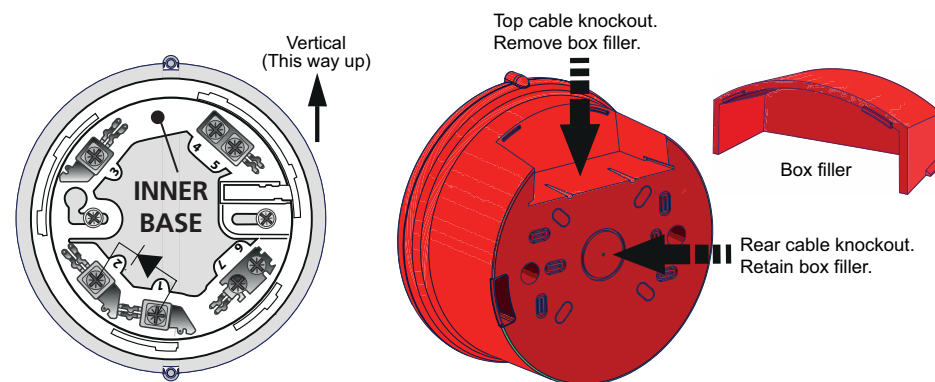
**Important Note:** It is good practice to horizontally align the two mounting slots in the shallow and deep bases. This ensures that VAD variants are correctly orientated when fitted and illuminate in the correct plane. See diagrams below (base accessories not shown).

### Shallow Base Type - Orientation & Rear/Side Cable Entry



### Deep Base Type - Orientation & Top/Rear Cable Entry

The deep base is factory built for top cable entry and supplied with a box filler, as shown below.



### Deep Base Type - Bottom Cable Entry

If bottom cable entry is needed, remove the two inner base retaining screws, then rotate the inner base 180 degrees and re-secure. This ensures that VAD variants are correctly orientated when fitted.

## Mounting the Base



### THE SYSTEM MUST BE COMPLETELY POWERED DOWN BEFORE INSTALLATION

Before installing, fit the optional base accessories (refer to 'Base Accessories...' section) and ensure the devices are correctly orientated (refer to 'Wall Mounting Orientation' section). Each base has two mounting slots for standard electrical termination boxes.

Ensure the devices are installed in accordance with applicable local or national regulations and do not mount bases on uneven surfaces.

Shallow bases are ideal for applications where the loop cable is buried into the wall, as they have a large, rear, access hole through which the cable can be fed. As an alternative to using termination boxes, both single and double cable knockouts are provided in the sides of the shallow base (if required).

Deep bases are ideal for applications requiring higher IP ratings. They include a box filler that can be removed to accept surface cabling that runs vertically up/down the wall.

Securely fix the base to a wall using two retaining screws in the mounting slots provided.

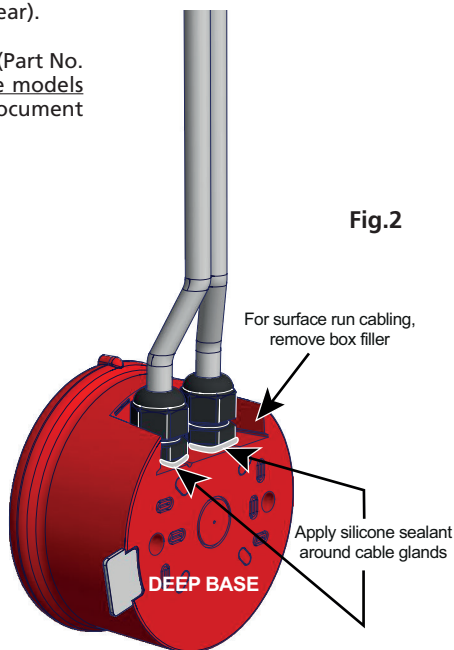
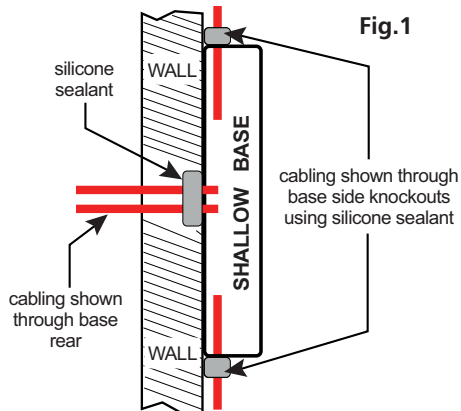
### Ingress Protection

Shallow base models are Type A, IP21C rated and deep base models are Type B, either IP33C or IP55C rated.

Where installers might have a water/moisture ingress occurrence, suggested sealing methods for shallow and deep base models are shown in Fig.1 & Fig.2 below.

To protect against ingress, ensure all cable entry points and cable glands are adequately sealed using standard neutral cure building silicone (clear).

**Note:** A separately available IP protection plate (Part No. BFIPPLATE) must be used with the shallow base models to maintain the IP rating. Refer to BFIPPLATE Document No. DFU4500020 for further details.



## Connections

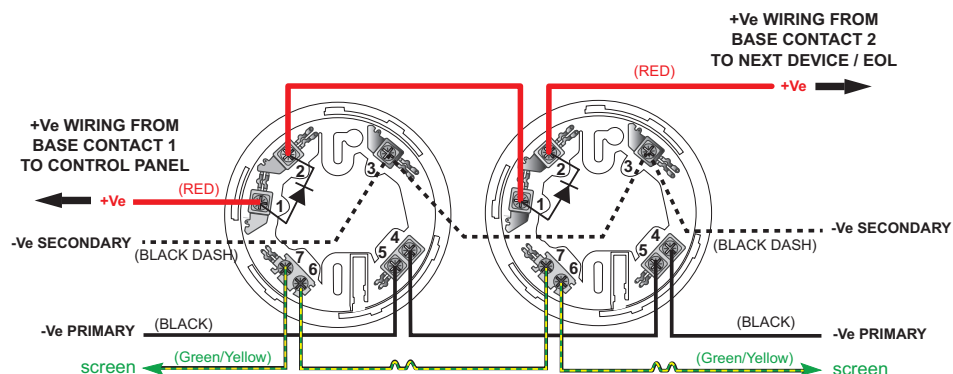
Connect incoming and outgoing line cables to the base's screw terminals, as shown in figure 1.

The selection of PRIMARY or SECONDARY tones is made by wiring to the -Ve PRIMARY or -Ve SECONDARY connections shown below.

**For correct operation, wire the +Ve connector as shown below, wiring from contact 1 to the control panel, wiring from contact 2 to the next device/End of Line (EOL).**

**Note:** The bases incorporate a diode to allow detection of a sounder/VAD head removal and still allow operation of devices in alarm.

Figure 1 - Sounder Connections (Typical)



Base Contact	Function
1 & 2	+Ve
4 & 5	-Ve PRIMARY
3	-Ve SECONDARY
6 & 7	screen

- All wiring must conform to local or national regulations.
- Correct polarity must be observed.
- Terminate sounder circuit as per panel manufacturer's instructions.
- Terminals can accept 0.25 mm<sup>2</sup> to 2.5 mm<sup>2</sup> wiring.
- For optimum performance, it is recommended that screened cables are used.
- Diode in base provides active 'head out' end of line monitoring.