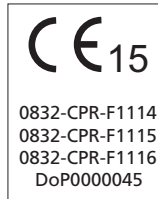


# Base Mount Range Addressable Sounders & Visual Alarm Devices Installation Instructions Discovery Compatible

## Product Description

The Base Mount range of addressable, loop-powered bases includes sounders, visual alarm devices (VADs) and combined sounder VADs. They are designed for use with C-TEC's ZFP/XFP panels and other Apollo Discovery compatible fire panels. Their purpose is to visually and audibly alert building occupants of a fire alarm.



The following variants are available:

| Part Numbers               | Description  |
|----------------------------|--|
| BF431A/CX/W                | Addressable Ceiling Sounder Base with isolator, white (Discovery)                |
| BF432A/CX/W (NOT APPROVED) | Addressable Ceiling Sounder VAD Base with isolator, white, 'O' Class (Discovery) |
| BF456A/CX/W                | Addressable Ceiling Sounder VAD Base with isolator, white, 'C' Class (Discovery) |
| BF459A/CX/W (NOT APPROVED) | Addressable Ceiling VAD Base with isolator, white, 'O' Class (Discovery)         |
| BF460A/CX/W                | Addressable Ceiling VAD Base with isolator, white, 'C' Class (Discovery)         |

All bases can be optionally used as either:

- a stand-alone base using a separately available locking white cap (BF330CTLIDW) / red cap (BF330CTLIDR), or
- a stacked base and detector base combination (detector base NOT supplied).

The bases offer low current consumption, high sound output, high efficiency VADs, seven selectable volume levels, 15 selectable tone pairs and built-in short-circuit loop isolators. The sounder and VAD on the combined base can be set to operate independently of each other (panel dependent function).

All bases (excluding BF432A/CX/W and BF459A/CX/W) are fully certified with all relevant sections of the fire alarm device standards EN 54-3 (Sounders), EN 54-23 (Visual alarm devices - VADs) and EN 54-17 (Short-circuit isolators).

## Mounting the Base



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

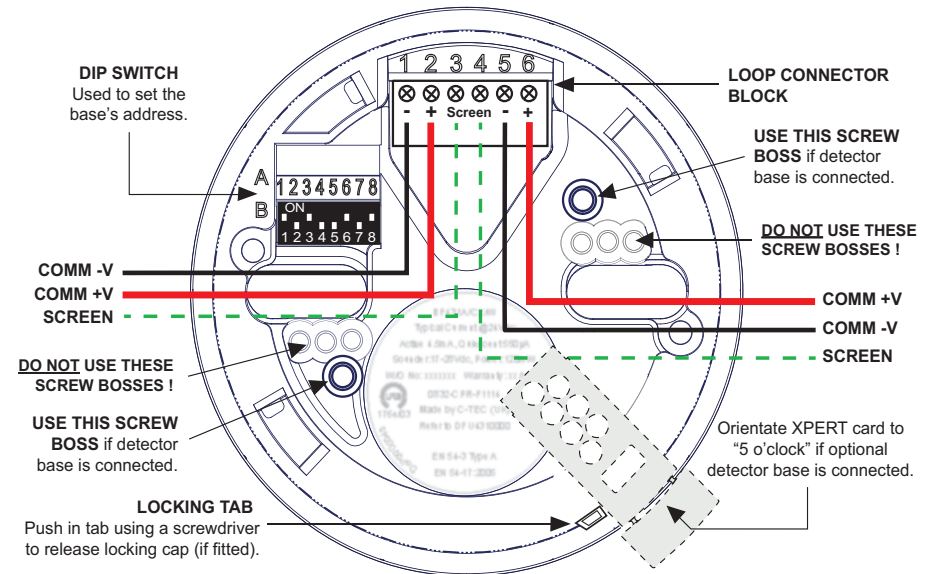
Ensure the bases are installed in accordance with applicable local or national regulations. All bases are designed for indoor use only and ceiling mounting in any orientation. Do not mount bases on uneven surfaces.

The base has screw terminals for the field wiring (refer to 'Loop Connection...' section) and includes mounting slots for standard electrical termination boxes. Securely fix the base to a ceiling using two screws in the mounting slots provided.

## Loop Connection and Connection to Optional Detector Base

Connect the incoming and outgoing loop cable to the base's loop connector block, as shown below. Note the loop connections are polarity sensitive.

If connecting to an optional detector base, use the supplied Red (+V) and Black (-V) wires to connect from the loop connector block to the detector base terminals. Two screws are supplied to secure both bases together using the two single screw bosses shown below. **Important Note:** If fitted, the XPERT address card in the detector base must be orientated at a "5 o'clock" position so as not to block the cable entry points.



| Base Contact | Function     |
|--------------|--------------|
| 1            | -Ve IN       |
| 2            | +Ve IN       |
| 3 & 4        | cable screen |
| 5            | -Ve OUT      |
| 6            | +Ve OUT      |

- All wiring must conform to local or national regulations.
- Correct polarity must be observed.
- 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.

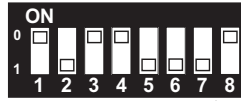
## Setting the Base Address

Each base's address is set using Bits 1 to 7 on its DIP switch. Bit 8 is not used.

DIP switch up (ON) = 0, DIP switch down (OFF) = 1.

**DO NOT** use addresses 0 or 127.

Use a small screwdriver to set the switches and refer to the chart below for address settings. Ensure the switches are set before installation and fully pushed up or down.



Use Bits 1-7 on the DIP switch to select the base's address (114 in above example).

| Addr | DIP position | Addr | DIP position | Addr | DIP position | Addr | DIP position | Addr | DIP position |
|------|--------------|------|--------------|------|--------------|------|--------------|------|--------------|
| 1    | 1000000      | 26   | 0101100      | 51   | 1100110      | 76   | 0011001      | 101  | 1010011      |
| 2    | 0100000      | 27   | 1101100      | 52   | 0010110      | 77   | 1011001      | 102  | 0110011      |
| 3    | 1100000      | 28   | 0011100      | 53   | 1010110      | 78   | 0111001      | 103  | 1110011      |
| 4    | 0010000      | 29   | 1011100      | 54   | 0110110      | 79   | 1111001      | 104  | 0001011      |
| 5    | 1010000      | 30   | 0111100      | 55   | 1110110      | 80   | 0000101      | 105  | 1001011      |
| 6    | 0110000      | 31   | 1111100      | 56   | 0000110      | 81   | 1000101      | 106  | 0101011      |
| 7    | 1110000      | 32   | 0000010      | 57   | 1001110      | 82   | 0100101      | 107  | 1101011      |
| 8    | 0001000      | 33   | 1000010      | 58   | 0101110      | 83   | 1100101      | 108  | 0011011      |
| 9    | 1001000      | 34   | 0100010      | 59   | 1101110      | 84   | 0010101      | 109  | 1011011      |
| 10   | 0101000      | 35   | 1100010      | 60   | 0011110      | 85   | 1010101      | 110  | 0111011      |
| 11   | 1101000      | 36   | 0010010      | 61   | 1011110      | 86   | 0110101      | 111  | 1111011      |
| 12   | 0011000      | 37   | 1010010      | 62   | 0111110      | 87   | 1110101      | 112  | 0000111      |
| 13   | 1011000      | 38   | 0110010      | 63   | 1111110      | 88   | 0001101      | 113  | 1000111      |
| 14   | 0111000      | 39   | 1110010      | 64   | 0000001      | 89   | 1001101      | 114  | 0100111      |
| 15   | 1111000      | 40   | 0001010      | 65   | 1000001      | 90   | 0101101      | 115  | 1100111      |
| 16   | 0000100      | 41   | 1001010      | 66   | 0100001      | 91   | 1101101      | 116  | 0010111      |
| 17   | 1000100      | 42   | 0101010      | 67   | 1100001      | 92   | 0011101      | 117  | 1010111      |
| 18   | 0100100      | 43   | 1101010      | 68   | 0010001      | 93   | 1011101      | 118  | 0110111      |
| 19   | 1100100      | 44   | 0011010      | 69   | 1010001      | 94   | 0111101      | 119  | 1110111      |
| 20   | 0010100      | 45   | 1011010      | 70   | 0110001      | 95   | 1101101      | 120  | 0001111      |
| 21   | 1010100      | 46   | 0111010      | 71   | 1110001      | 96   | 0000011      | 121  | 1001111      |
| 22   | 0110100      | 47   | 1111010      | 72   | 0001001      | 97   | 1000011      | 122  | 0101111      |
| 23   | 1110100      | 48   | 0000110      | 73   | 1001001      | 98   | 0100011      | 123  | 1101111      |
| 24   | 0001100      | 49   | 1000110      | 74   | 0101001      | 99   | 1100011      | 124  | 0011111      |
| 25   | 1001100      | 50   | 0100110      | 75   | 1101001      | 100  | 0010011      | 125  | 1011111      |
|      |              |      |              |      |              |      |              | 126  | 0111111      |

## 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 BS5839-1 Fire detection and alarm systems for buildings: Code of practice for system design, installation & maintenance. 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 third-party fire alarm maintenance organisation.

## Technical Specifications

### EN 54-17 Isolator Specification (Autonomous Voltage Sensing Isolator)

|   |   |
|---|---|
| Supply Voltage (V min to V max):                              | 17 to 28 Vdc *                            |
| Nominal Supply (V nom):                                       | 24 Vdc                                    |
| Maximum Rated Continuous Current (Ic max):                    | 1 A - switch closed                       |
| Maximum Switching Current (Is max):                           | 3 A - short circuit condition             |
| Maximum Leakage Current (IL max):                             | 14 mA @ 28 Volts - switch open            |
| Maximum Impedance (Zc max) @ loop startup/recovery condition: | 100 mOhm - switch closed                  |
| Maximum Isolating Voltage (Vso max):                          | 16.5 Volts - switches from closed to open |
| Minimum Isolating Voltage (Vso min):                          | 12.5 Volts - switches from closed to open |
| Maximum Re-connecting Voltage (Vsc max):                      | 13.5 Volts - switches from open to closed |
| Minimum Re-connecting Voltage (Vsc min):                      | 7.0 Volts - switches from open to closed  |

\* Excluding data pulses

## Supplementary Specification

| Part Numbers:                     | BF431A/CX/W  | BF432A/CX/W (NOT APPROVED)                                     | BF456A/CX/W                            | BF459A/CX/W (NOT APPROVED)     | BF460A/CX/W                    |
|-----------------------------------|--|--|--|--------------------------------|--------------------------------|
| Description:                      | Base Sounder with isolator                         | Base Sounder VAD with isolator O-Class                         | Base Sounder VAD with isolator C-Class | Base VAD with isolator O-Class | Base VAD with isolator C-Class |
| Certified Standards:              | EN 54-3:2001 + A1:2002 + A2:2006, EN 54-17:2005    | EN 54-3:2001 + A1:2002 + A2:2006, EN 54-17:2005, EN 54-23:2010 |  | EN 54-17:2005, EN 54-23:2010   |                                |
| LPCB Certificate Numbers:         | 176e/03 ^  | N/A  | 176f/03 ^                              | N/A                            | 176g/01 ^                      |
| CPR Certificate Numbers:          | 0832-CPR-F1114 ^                                   | N/A  | 0832-CPR-F1115 ^                       | N/A                            | 0832-CPR-F1116 ^               |
| Declaration of Performance (DoP): | DoP0000045 ^                                       | N/A  | DoP0000045 ^                           | N/A                            | DoP0000045 ^                   |
| Communication Protocol:           | Apollo Discovery                                   |  |  |                                |                                |
| Supply Voltage:                   | 17 to 28 Vdc *                                     | 17 to 28 Vdc (sounder only) *                                  | 21 to 28 Vdc (VAD only) *              | 21 to 28 Vdc *                 |                                |
| Quiescent Current (Typical):      | 550 µA   |  |  |                                |                                |
| Active Current (Typical):         | +4.5 mA (above quiescent) **                       | +13.5 mA (above quiescent) **                                  | +9 mA (above quiescent) **             |                                |                                |
| Power:                            | 120 mW   | 340 mW   | 230 mW                                 |                                |                                |
| Environment Type (EN 54-3/23):    | Type A (EN 54-3)                                   | Type A (EN 54-3 & EN 54-23)                                    |  | Type A (EN 54-23)              |                                |
| VAD Cat. (EN 54-23) (Class):      | N/A  | O-3-2.5-15   | C-3-8 #                                | O-3-2.5-15                     | C-3-8 #                        |
| VAD Temporal Pattern:             | N/A  | 0.5 Hz, synchronised   |  |                                |                                |
| Coverage Volume:                  | N/A  | 113 m³   | 151 m³                                 | 113 m³                         | 151 m³                         |
| Nominal SPL at Vmax:              | 96 dB(A) @ 1 m ***                                 |  |  |                                | N/A                            |
| Indicators:                       | Polling LED (Green)<br>S/C Isolator Active (Amber) |  |  |                                |                                |
| Dimensions:                       | 112 mm diameter; 46 mm deep (with cap fitted)      |  |  |                                |                                |
| Weight:                           | 160 g  | TBC  | 170 g                                  | TBC                            | 160 g                          |
| Mounting Type:                    | Ceiling  |  |  |                                |                                |
| Body Material / Colour:           | Polycarbonate / White                              |  |  |                                |                                |
| IP Rating (EN 60529):             | IP21C  |  |  |                                |                                |
| Operating Temperature:            | -10°C to +55°C (Type A)                            |  |  |                                |                                |
| Humidity:                         | Max. 95% RH (non-condensing)                       |  |  |                                |                                |

\* Excluding data pulses; \*\* @ maximum volume level; \*\*\* ±3 dB(A) When set to Sounder Tone 1 (Primary);

^ Certificates and DoPs available for download on C-TEC's website; # XPERT address card NOT fitted (C-3-6 if card fitted).

### Sounder Tone Pair Details (Tones are selectable at the panel)

| PAIR | TONE 1 - PRIMARY  | TONE 2 - SECONDARY                                |
|------|---|---|
| 1    | Evacuate (550 Hz for 0.5 sec, 825 Hz for 0.5 sec) *                       | Alert (1 sec off, 825 Hz for 1 sec)               |
| 2    | Alternating (925 Hz for 0.25 sec, 626 Hz for 0.25 sec) *                  | Continuous (925 Hz)                               |
| 3    | Medium Sweep (800 Hz to 970 Hz at 1 Hz)                                   | Continuous (970 Hz)                               |
| 4    | Fast Sweep (2500 Hz to 2850 Hz at 9 Hz)                                   | Continuous (2850 Hz)                              |
| 5    | Dutch Slow Sweep (500 Hz to 1200 Hz for 3.5 sec on, 0.5 sec off) *        | Continuous (825 Hz)                               |
| 6    | DIN Tone Sweep (1200 Hz to 500 Hz for 1 sec)                              | Continuous (825 Hz)                               |
| 7    | Swedish Fire Tone (660 Hz, 150 msec on, 150 msec off)                     | All clear continuous (660 Hz)                     |
| 8    | Aus Fast Rise Sweep [3 x (500 Hz to 1200 Hz for 0.5 sec on), 0.5 sec off] | Aus Alert (420 Hz, 0.625 sec, 0.625 sec off)      |
| 9    | NZ Slow Rise Sweep (500 Hz to 1200 Hz for 3.75 sec on, 0.25 sec off)      | NZ Alert (420 Hz, 0.625 sec, 0.625 sec off)       |
| 10   | US Temporal LF [3 x (970 Hz, 0.5 sec on, 0.5 sec off), 1 sec off]         | Continuous (970 Hz)                               |
| 11   | US Temporal HF [3 x (2850 Hz, 0.5 sec on, 0.5 sec off), 1 sec off]        | Continuous (2850 Hz)                              |
| 12   | Simulated Bell Continuous   | Simulated Bell Intermittent (1 sec off, 1 sec on) |
| 13   | Cranford Sweep  | Cranford Alert                                    |
| 14   | Cranford Continuous   | Cranford Alert                                    |
| 15   | Cranford Two Tone   | Cranford Alert                                    |

\* Approved to EN 54-3 (refer to Document No. DFU4310007 for SPL measurements)

Manufacturer: Computationics Limited (C-TEC), Challenge Way, Martland Park, Wigan, Lancashire WN5 0LD. www.c-tec.co.uk E&OE. No responsibility can be accepted by the manufacturer or distributors of these units 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.