

## Tone List

| TONE # | TONE NAME                                | COUNTRY         | TONE                                      |
|--------|--|-----------------|---|
| 1      | C-TEC Evacuation Tone (Fire Level 2) *   | UK              | 535Hz for 0.5s, 800Hz for 0.5s            |
| 2      | Alert                                    | All             | 825Hz, 1s on, 1s off                      |
| 3      | C-TEC Fast Warble *                      | UK              | 800Hz for 0.25s, 645Hz for 0.25s          |
| 4      | Medium Sweep                             | UK              | 800 - 970Hz at 1Hz                        |
| 5      | Dutch Slow Whoop (Fire Level 1) *        | The Netherlands | 500-1200Hz for 3.5s, 0.5s off             |
| 6      | DIN Tone *                               | Germany         | 1200Hz – 500Hz for 1s                     |
| 7      | Swedish Alternating Tone                 | Sweden          | 660Hz, 150ms on, 150ms off                |
| 8      | Swedish all clear                        | Sweden          | 660Hz Constant On                         |
| 9      | Swedish Local Warning                    | Sweden          | 660Hz, 1.8s on, 1.8s off                  |
| 10     | Swedish Pre-mess                         | Sweden          | 660Hz, 6.5s on, 13s off, 20s period       |
| 11     | Swedish Turn Out                         | Sweden          | 554Hz for 1s, 440Hz for 1s                |
| 12     | Swedish tone                             | Sweden          | 660Hz 0.5s on, 0.5s off                   |
| 13     | Evacuation Tone (Apollo Comparable)      | UK              | 550Hz for 0.5s, 825Hz for 0.5s            |
| 14     | Alternating (Hochiki/Fulleon Comparable) | UK              | 925Hz for 0.25s, 626Hz for 0.25s          |
| 15     | French Fire Tone *                       | France          | 554Hz for 100ms/440Hz for 380ms to 420ms  |
| 16     | Australian Alert Tone AS1670 (ISO7731)   | Australia       | 420Hz 0.625s on/off                       |
| 17     | Australian Evacuation Tone AS1670        | Australia       | 500 – 1200Hz, 0.5s/ 0.5s OFF x 3/1.5s OFF |
| 18     | Aus (fast rise sweep)                    | Australia       | 3x(500-1200Hz for 0.5s), 0.25s off        |
| 19     | NZ (slow rise sweep)                     | New Zealand     | 500-1200Hz for 3.75s, 0.25s off           |
| 20     | US Temporal LF(ISO 8201)                 | USA             | 3x(970Hz, 0.5s on, 0.5 off), 1s off       |
| 21     | US Temporal HF(ISO 8201)                 | USA             | 3x(2850Hz, 0.5s on, 0.5 off), 1s off      |
| 22     | Simulated Bell                           | USA/General     | n/a                                       |
| 23     | Singapore Alert Tone                     | Singapore       | 1kHz, 2kHz 0.5s alternating               |
| 24     | PFEER Alert Tone                         | All             | 950Hz, 0.25s on, 0.25Hz off               |
| 25     | PFEER Alert Tone                         | All             | 970Hz, 1s on, 1s off                      |
| 26     | ISO 8201                                 | All             | 970Hz, 0.5s ON/0.5s OFF x 3/ 1.5s OFF     |
| 27     | ISO 8201                                 | All             | 2850Hz, 0.5s ON/0.5s OFF x 3/1.5s OFF     |
| 28     | Misc Tone 1                              | All             | 925Hz Continuous                          |
| 29     | Misc Tone 2                              | All             | 975Hz Continuous                          |
| 30     | Misc Tone 3                              | All             | 2850Hz Continuous                         |
| 31     | Fast Sweep                               | N/A             | 2.5-2.85kHz at 9Hz                        |

\* Approved to EN54-3 (see Document No. DFU4500009 for SPL measurements)



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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 manufacturers policy is one of continuous improvement and we reserve the right to make changes to product specifications at our discretion and without prior notice.

## Compact Range Sounders & VADs

### Product Description

The Hush-Pro Compact range of devices includes sounders, visual alarm devices (VADs) and combined sounder VADs. They are designed for use with C-TEC's HUSH-Pro BS5839-6 Grade C Fire Alarm Controller. Their purpose is to audibly and visually alert building occupants of a fire alarm.

The following variants are available:

| Part Number | Description   |
|-------------|---|
| HP450A/SW   | Compact Sounder with isolator, shallow base, white (Hush-Pro)     |
| HP451A/SW   | Compact Sounder VAD with isolator, shallow base, white (Hush-Pro) |
| HP458A/SW   | Compact VAD with isolator, shallow base, white (Hush-Pro)         |

The devices offer low current consumption, high sound output, high efficiency VADs with built-in short-circuit isolators, volume levels and tones.

All devices are fully certified by the LPCB with the 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**

Before installing, fit the optional base accessories (see 'Fitting the Base Accessories' section).

Ensure the devices are installed in accordance with applicable local or national regulations. All devices are designed for indoor use only, either ceiling or wall mounting (dependent on the model). Do not mount bases on uneven surfaces.

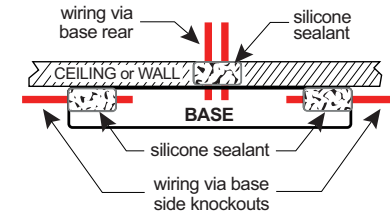
The base has screw terminals for the field wiring (see 'Wiring the Base' section) and includes mounting slots for standard electrical termination boxes. As an alternative to using termination boxes, both single and double cable knockouts are provided in the sides of the base (if required). Securely fix the base to a ceiling (or wall) using two screws in the mounting slots provided.

### Ingress Protection

Where installers might have a water/moisture ingress occurrence (to meet IP21C), a standard sealing method is shown right. To protect against ingress, ensure all cable entry points and cable glands are adequately sealed using standard neutral cure building silicone (clear).

**Note:** When wall mounting a device, an IP protection plate (Part No. BFIPPLATE) must be used to maintain the IP rating. Refer to Document No. DFU4500020 for details.

A ceiling mounted base can be in any orientation, but a wall mounted base must have the mounting slots orientated vertically with the unlocking slot at the bottom.

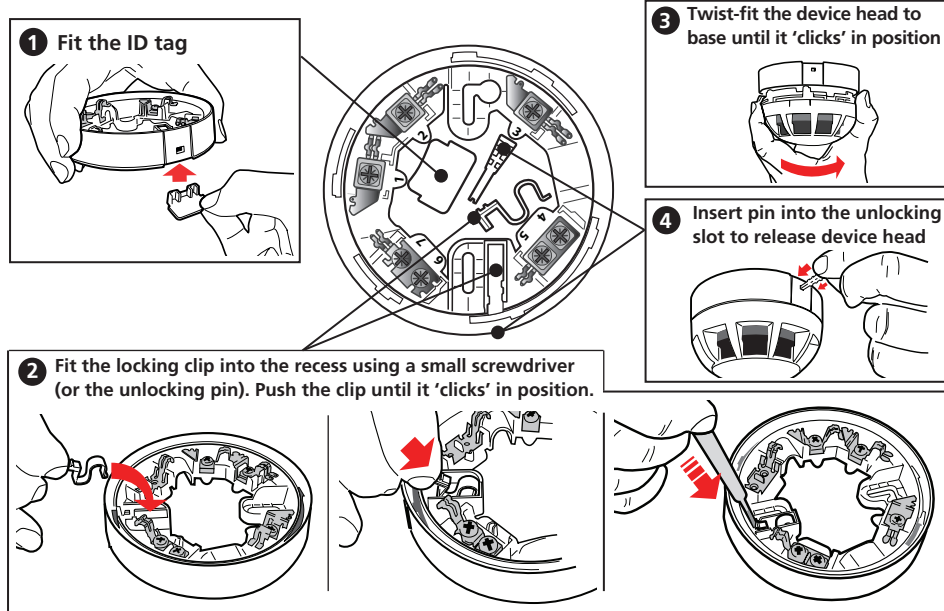


## Installation Instructions Hush-Pro

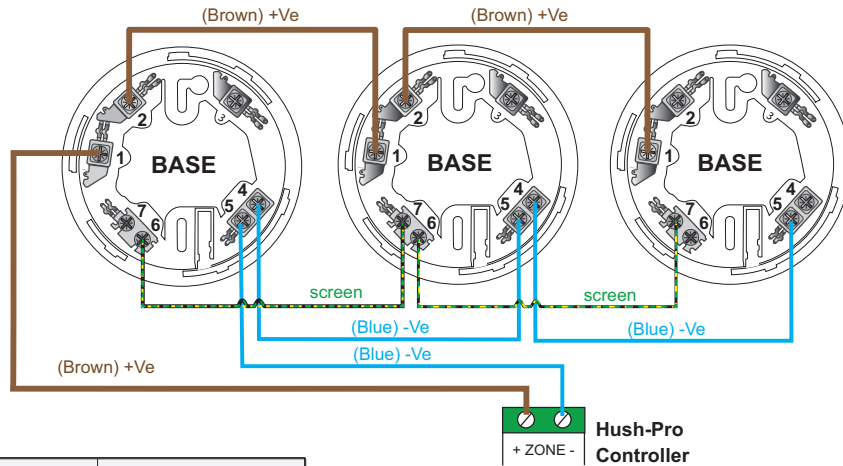


## Fitting the Base Accessories (Optional)

Each base is supplied with a 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.



## Wiring the Base



| Base Contact | Function              |
|--------------|-----------------------|
| 1 & 2        | +Ve (analogue switch) |
| 4 & 5        | 0V                    |
| 6 & 7        | cable screen          |

- 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.

## 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.

## Technical Specifications

### EN 54-17 SC-Isolator Specification (Controllable Isolator)

|  |        |
|--|--------|
| Maximum Voltage (V max):   | 40 Vdc |
| Nominal Voltage (V nom):   | 40 Vdc |
| Minimum Voltage (V min):   | 22 Vdc |
| Maximum Current Device Isolates, switches from closed to open (Iso max): | 55 mA  |
| Minimum Current Device Isolates, switches from closed to open (Iso min): | 15 mA  |
| Maximum Rated Continuous Current with switch closed (Ic max):            | 1 A    |
| Maximum Rated Switching Current under short circuit conditions (Is max): | 1.6 A  |
| Maximum Leakage Current with switch open (Il max):                       | 20 µA  |
| Maximum Series Impedance with switch closed (Zc max)                     | 100 mΩ |

### Supplementary Specification

| Part Numbers:                  | HP450A/SW  | HP451A/SW  | HP458A/SW               |
|--------------------------------|--|--|-------------------------|
| Description:                   | Sounder with isolator  | Sounder VAD with isolator  | VAD with isolator       |
| Certified Standards:           | EN 54-3:2014 + A1:2019, EN54-3:2001 + A1:2002, EN 54-17:2005 | EN 54-3:2014 + A1:2019, EN54-3:2001 + A1:2002, EN 54-17:2005, EN 54-23 | EN 54-17:2005, EN 54-23 |
| LPCB Certificate Numbers:      | 176e/07 ^  | 176f/07 ^  | 176g/02 ^               |
| CPR Certificate Numbers:       | 2831-CPR-F2212 ^   | 2831-CPR-F2213 ^   | 2831-CPR-F2214 ^        |
| UKCA Certificate Numbers:      | 0832-UKCA-CPR-F0770 ^  | 0832-UKCA-CPR-F0781 ^  | 0832-UKCA-CPR-F0785 ^   |
| Declaration of Performance:    | DoP0000057 ^   |  |                         |
| Communication Protocol:        | Hush-Pro (C-TEC)   |  |                         |
| Supply Voltage:                | 24 to 40 Vdc (sounder)                                       | 24 to 40 Vdc (sounder)<br>27 to 40 Vdc (VAD)                           | 27 to 40 Vdc (VAD)      |
| Quiescent Current (Typical):   | 460 µA   |  |                         |
| Active Current (Typical):      | +5.5 mA *  | +12.5 mA (0.5 Hz) *  | +7 mA (0.5 Hz) *        |
| Power:                         | 220 mW   | 500 mW   | 280 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) (C-Class): | N/A  | C-3-8  |                         |
| (W-Class):                     | N/A  | W-3-3.125  |                         |
| VAD Temporal Pattern:          | N/A  | 0.5 Hz synchronised  |                         |
| Cylindrical Volume (C-Class):  | N/A  | 170 m <sup>3</sup>   |                         |
| Cuboid Volume (W-Class):       | N/A  | 30 m <sup>3</sup>  |                         |
| Peak SPL at Vmax:              | 96 dB(A) @ 1 m **  |  | N/A                     |
| Indicator:                     | Polling LED  |  |                         |
| Dimensions:                    | 102 mm diam.; 57.5 mm deep                                   | 102 mm diam.; 63 mm deep   |                         |
| Weight:                        | 160 g  | 175 g  | 170 g                   |
| Mounting Type:                 | Wall / Ceiling   |  |                         |
| Polycarbonate Body Colour:     | White  |  |                         |
| IP Rating (EN 60529):          | IP21C  |  |                         |
| Operating Temperature:         | -10°C to +55°C   |  |                         |
| Humidity:                      | Max. 95% RH (non-condensing)                                 |  |                         |

\* @ maximum volume level; \*\* ±3 dB(A) when set to Sounder Tone 1

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