TONE #	TONE NAME	COUNTRY	TONE
1	C-TEC Evacuation Tone *	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 (sweep) *	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. DFU4500008 for SPL measurements)

Manufacturer: Computionics 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 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
Installation Instructions
Addressable Sounders & VADs
CAST Compatible

CE 18 2831

LPCB

UKCA 21 0832

Product Description

The CAST Compact range of addressable loop-powered devices include sounders, visual alarm devices (VADs) and combined sounder VADs. They are designed for use with C-TEC's CAST XFP/ZFP panel and other `CAST´ compatible fire panels. Their purpose is to audibly and visually alert building occupants of a fire alarm.

The following variants are available:

Part Number	Description
CA450A/SW	Addressable Compact Sounder with isolator, shallow base, white (CAST)
CA450A/SR	Addressable Compact Sounder with isolator, shallow base, red (CAST)
CA451A/SW	Addressable Compact Sounder VAD with isolator, shallow base, white (CAST)
CA451A/SR	Addressable Compact Sounder VAD with isolator, shallow base, red (CAST)
CA458A/SW	Addressable Compact VAD with isolator, shallow base, white (CAST)
CA458A/SR	Addressable Compact VAD with isolator, shallow base, red (CAST)

The devices offer low current consumption, high sound output, high efficiency VADs, built-in short-circuit loop isolators, four selectable volume levels and 31 selectable tones. Please note volume levels and tones can be changed using the panel's programming tools.

The combined sounder and VAD on the CA451A/SW and CA451A/SR devices can be set to operate independently of each other (panel dependent function).

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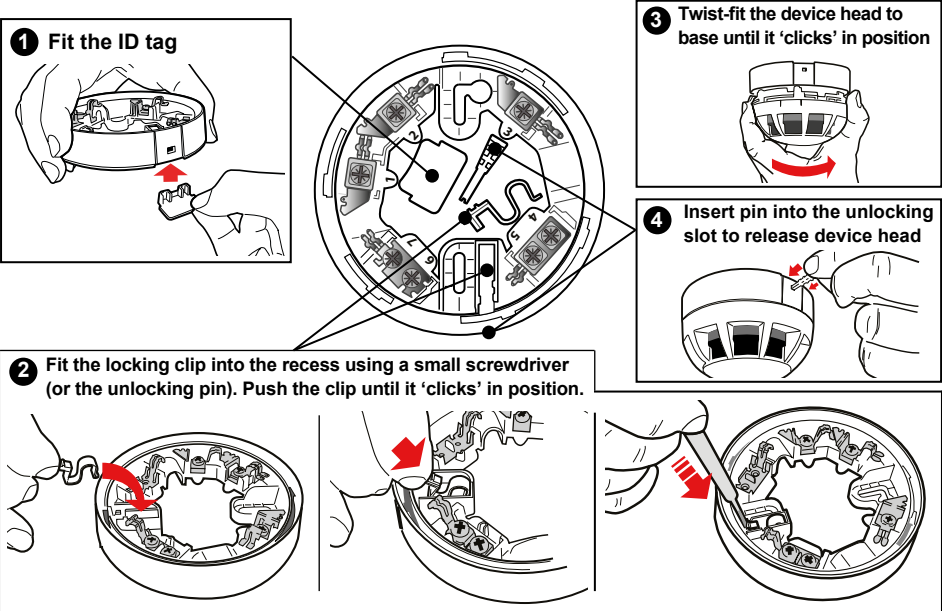
Note: When wall mounting a device, an IP protection plate (Part No. BFIPPLATE) must be used to maintain the IP rating. Refer to Document No. DFU4500020 for details.

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.
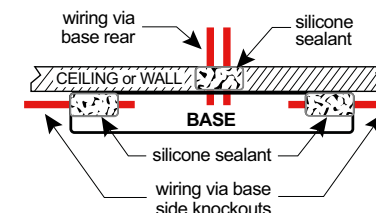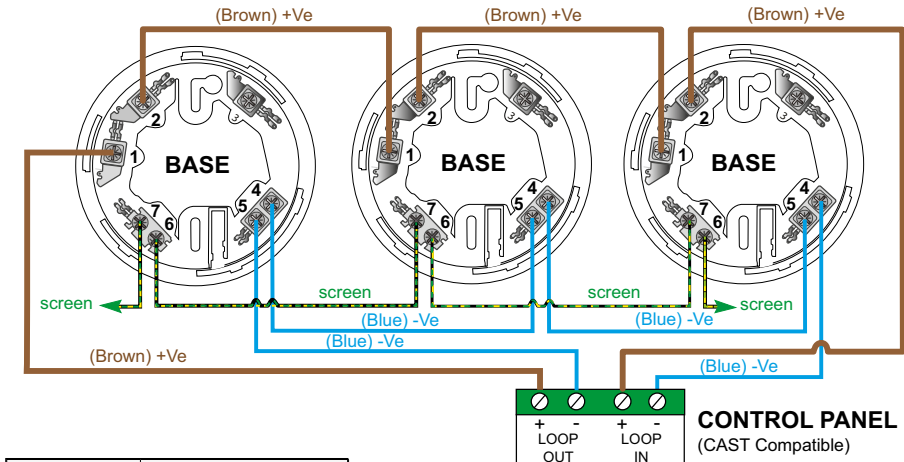
Fitting the Base Accessories (Optional)

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.

1 Fit the ID tag

3 Twist-fit the device head to base until it 'clicks' in position

4 Insert pin into the unlocking slot to release device head

2 Fit the locking clip into the recess using a small screwdriver (or the unlocking pin). Push the clip until it 'clicks' in position.

Wiring the Base

(Brown) +Ve
BASE
screen
(Blue) -Ve

CONTROL PANEL (CAST Compatible)

+ − LOOP OUT   + − LOOP IN

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 mm² to 2.5 mm² 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 Loop Voltage (V max):	40 Vdc
Nominal Loop Voltage (V nom):	40 Vdc
Minimum Loop 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:	CA450A/SW	CA450A/SR	CA451A/SW	CA451A/SR	CA458A/SW	CA458A/SR
Description:	Sounder with isolator		Sounder VAD with isolator		VAD with isolator	
Certified Standards:	EN 54-3:2014 + A1:2019, EN 54-3:2001 + A1:2002, EN 54-17:2005		EN 54-3:2014 + A1:2019, EN 54-3:2001 + 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:	CAST (C-TEC)					
Supply Voltage:	24 to 40 Vdc (sounder)		24 to 40 Vdc (sounder) 27 to 40 Vdc (VAD)		27 to 40 Vdc (VAD)	
Quiescent Current (Typical):	350 µA					
Active Current (Typical):	5.1 mA *		10.7 mA (0.5 Hz) *		7.7 mA (0.5 Hz) *	
Active Current (Max):	5.7 mA *		12.5 mA *		9.8 mA *	
Power:	210 mW		430 mW		310 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 m³			
Cuboid Volume (W-Class):	N/A		30 m³			
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 (CA450A/SW) Red (CA450A/SR)		White (CA451A/SW) Red (CA451A/SR)		White (CA458A/SW) Red (CA458A/SR)	
IP Rating (EN 60529):	IP21C					
Operating Temperature:	-10ºC to +55ºC					
Humidity:	Max. 95% RH (non-condensing)					

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

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