Technical Specifications

Supplementary Specification

Part Number:	HP430A/DR	HP430A/DR/65	HP433A/DR/65
Description:	Hi-Output Sounder, Deep Base	Hi-Output Sounder, Deep Base	Hi-Output Sounder VAD, Deep Base
Certificated Standard:	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 54-23, EN 54-17:2005
LPCB Reference Number:	176e/05 ^	176e/06 ^	176f/06 ^
CPR Certificate Number:	2831-CPR-F2193 ^	2831-CPR-F2194 ^	2831-CPR-F2197 ^
UKCA Certificate Number:	0832-UKCA-CPR-F0767 ^	0832-UKCA-CPR-F0768 ^	0832-UKCA-CPR-F0779 ^
Declaration of Performance:	DoP0000058 ^		
Communication Protocol:	Hush-Pro (C-TEC)		
Supply Voltage:	24 to 40 Vdc (sounder)		24 to 40 Vdc (sounder) 27 to 40 Vdc (VAD)
Quiescent Current (Typical):	690 µA		
Active Current (Typical):	5.9 mA *		10.9 mA *
Active Current (Max):	6.6 mA *		14.0 mA *
Power:	240 mW		440 mW
Environment Type:	Type B (EN 54-3)		Type B (EN 54-3 & EN 54-23)
VAD Cat. (EN 54-23) W-Class:	N/A		W-2.75-9 / W-4-4
VAD Temporal Pattern:	N/A		0.5 Hz synchronised
Cuboid Volume (W-Class):	N/A		161.5 m³ / 64 m³
Peak SPL at Vmax:	100 dB(A) @ 1 m **		
Indicator:	Polling LED		
Dimensions (including base):	114 mm diameter, 131.5 mm deep		114 mm dia., 131.6 mm deep
Weight:	300 g		315 g
Mounting Type:	Wall		
Body Material / Colour:	Polycarbonate RAL 3001 Signal Red		
IP Rating (EN 60529):	IP33C	IP55C / IP65C ***	IP55C / IP65C ***
Operating Temperature:	-25°C to +55°C (Type B)		
Humidity:	Max. 95% RH (non-condensing)		

* @ maximum volume level @ Vmin

** ±3 dB(A) when set to Sounder Tone 2

*** IP65C compliant with optional O ring fitted (Pt. No. RNU0100054 - supplied)

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

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 mohms

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.

Hi-Output Range Installation Instructions

Hush-Pro Sounders & VADs

HP430A/DR, HP430A/DR/65, HP433A/DR/65

Product Description

The Hush-Pro Hi-Output range of devices includes sounders and combined sounder visual alarm devices (VADs). They are designed for use with C-TEC's HUSH-Pro BS5839-6 Grade C Fire Alarm Controller.

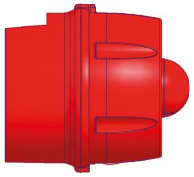
With a 100 dB(A) peak sound output @ 1 m, their purpose is to visually and audibly alert building occupants of a fire alarm. Units are supplied with a deep base in a red plastic enclosure.

The following variants are available:

Part Number	Description
HP430A/DR	Hi-Output Wall Sounder, Deep Base, Red, IP33C (Hush-Pro)
HP430A/DR/65	Hi-Output Wall Sounder, Deep Base, Red, IP55C / IP65C* (Hush-Pro)
HP433A/DR/65	Hi-Output Wall Sounder VAD, Deep Base, Red, IP55C / IP65C* (Hush-Pro)

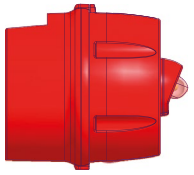
* IP65C compliant with optional O ring fitted (Pt. No. RNU0100054 - supplied).
Non-approved to EN 54 standard by LPCB but independently 3rd party tested.

SOUNDERS



Deep Base
HP430A/DR (Red)
HP430A/DR/65 (Red)

SOUNDER VAD



Deep Base
HP433A/DR/65 (Red)

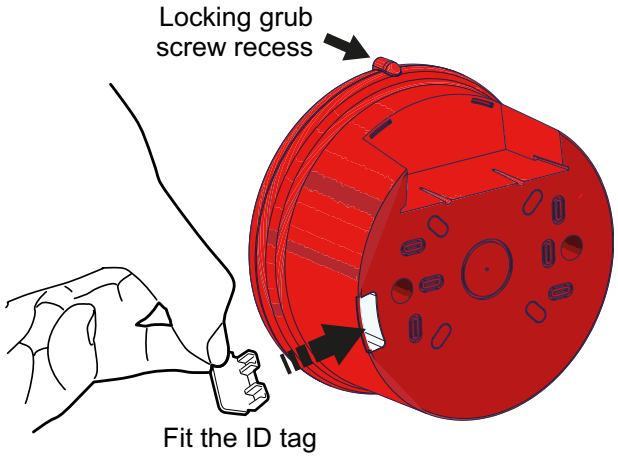
The devices offer low current consumption, high sound output, high efficiency VADs, built-in short-circuit loop isolators, volume levels and tones.

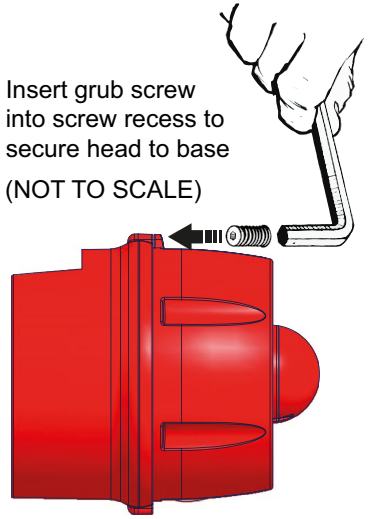
All devices are fully certified by the LPCB with the relevant sections of the fire alarm device standards EN 54-3 (Sounders), EN 54-23 (Visual alarm devices - VADs) and EN 54-17 (Short-circuit isolators).

Locking Mechanisms

Important Note: Only the ID tag may be fitted in the deep base models. DO NOT use the locking clip and unlocking pin supplied with the accessories, 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, shown right.





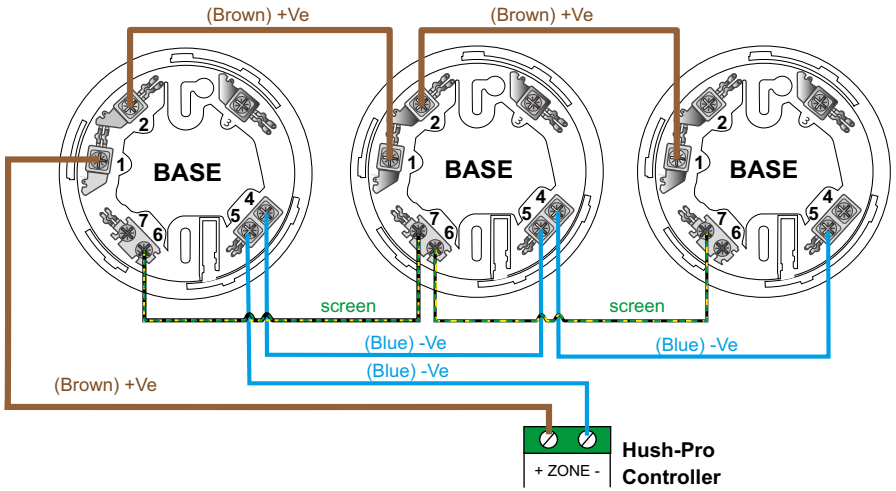
Tone List

TONE #	TONE NAME	COUNTRY	TONE
1	C-TEC Evacuation Tone (Fire Level 2) *	UK	675Hz for 0.5s, 925Hz for 0.5s
2	Alert	All	825Hz, 1s on, 1s off
3	C-TEC Fast Warble *	UK	920Hz for 0.25s, 975Hz 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 EN 54-3 (see Document No. DFU4300020 for SPL measurements)

Wiring the Base

The base has screw terminals for field wiring, as shown below. Note the orientation of the bases shown is for illustrative purposes only.



Base Contact	Function
1 & 2	+Ve
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.

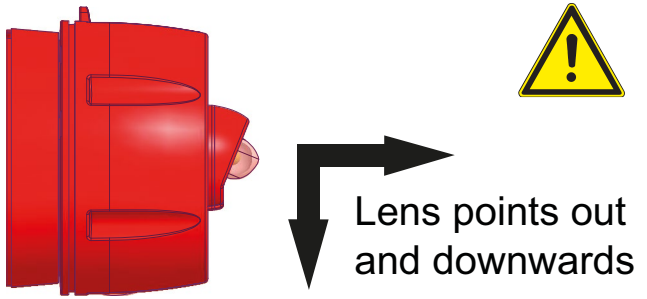
Maintenance

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.

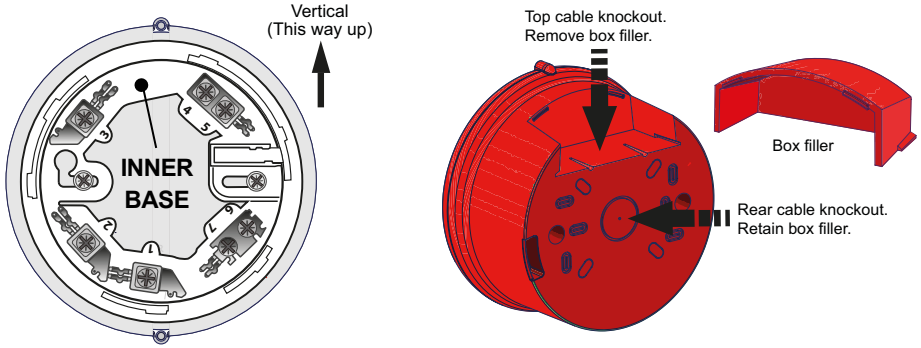
Wall Mounting Orientation

Important Note: It is good practice to horizontally align the two mounting slots in the deep bases. This ensures that VAD variants are correctly orientated when fitted and illuminate in the correct plane. See diagram below.



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 - 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. Note when mounted on an outside wall, cables should enter the deep base from below and not from the top (unless under cover).

Mounting the Base

THE SYSTEM MUST BE COMPLETELY POWERED DOWN BEFORE INSTALLATION

Before installing, fit the optional base accessories 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.

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.

Note when mounted on an outside wall, cables should enter the deep base from below and not from the top (unless under cover). See Fig.1 below and refer to page 3 for rotating the inner base 180 degrees.

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

Ingress Protection (IP)

Deep base models are Type B, either IP33C or IP55C / IP65C* rated. Where installers might have a water/moisture ingress occurrence, suggested sealing methods for deep base models are shown in Fig.1 below.
To protect against ingress, ensure all cable entry points and cable glands are adequately sealed using standard neutral cure building silicone (clear).

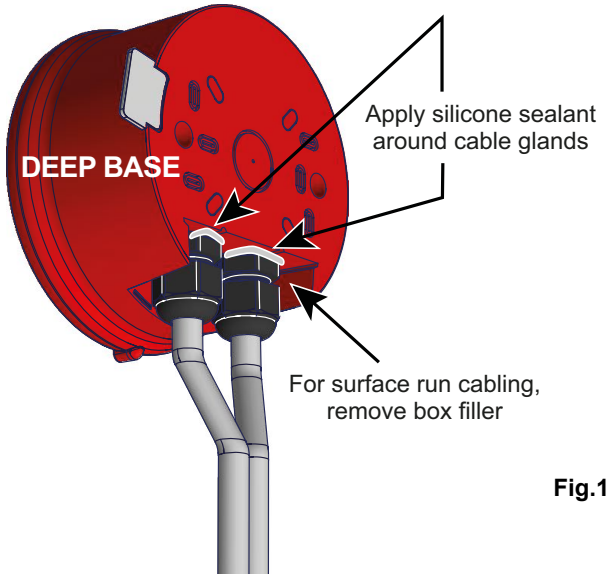


Fig.1

* For IP65C rated models, carefully remove the factory fitted IP55C O ring from the deep base and carefully fit the supplied IP65C O ring (Pt. No. RNU0100054). It is important to use a plentiful amount of silicone based lubrication on the O ring to assist fitting the sounder to its base.

Important Note about Ingress Protection (IP) and fitting the supplied O rings

During test & commissioning do not fit any O ring in the deep base unit until the installer is satisfied the sounder is working correctly. The factory fitted IP55C O ring should be carefully removed and safely stored.

The installer needs to fit the correct O ring for the environment the deep base units are being installed in.

The table below is a simple explanation of what the IP numbers actually mean to help the installer decide. For full details refer to EN 60529 (Degrees of Protection Provided by Enclosures).

IP Rating	First Number (Solids)	What the first number means	Second Number (Liquids)	What the second number means	O ring information
IP55C	5	Dust Protected	5	Protected against water jetting (hose pipe)	Supplied fitted on the unit (thinner O ring)
IP65C	6	Dust Tight	5	Protected against water jetting (hose pipe)	Supplied separately with the unit

The additional letter 'C' means protection against access with a tool.

Therefore:-

- If you use the **IP55C O ring** (the one fitted on the unit), you have a deep base unit that is **Dust Protected** and protected against **water jetting – hose pipe**.
- If you fit the **IP65C O ring** (the one supplied separately), you have a deep base unit that is **Dust Tight** and protected against **water jetting – hose pipe**.

Please be aware, the IP55C O ring is a very tight fit when fitted with the deep back box. Only fit the O ring when the deep back box is securely fixed in its final position and test & commissioning is complete.

Please be aware, the IP65C O ring is an even tighter fit than above when fitted with the deep back box. Only fit the O ring when the deep back box is securely fixed in its final position and test & commissioning is complete.

It is important to use a plentiful amount of silicone based lubrication on the O rings to assist fitting.