

ESP AUDIO/VISUAL PRODUCTS



YBO-BS
Base Sounder

One of the most critical functions of a fire alarm system is its ability to warn occupants of an alarm condition whether by aural signals, visual signals or a combination of both .

The Hochiki Analogue Addressable (ESP) range of EN54 compliant audio/visual products including sounders and beacons, and the technology behind them, is explained in this Technology Guide.



YBO-BSB
Base Sounder Beacon

YBO-BS Base Sounder and YBO-BSB Base Sounder Beacon mount directly onto standard sensor base

- ▶ 51 tones available (including DIN and ISO), selectable via the Control Panel*
- ▶ Variable sound output:- 13 volumes available 50 - 98dB(A)*
- ▶ Tones and Volumes selectable via the Control Panel
- ▶ White colour option available
- ▶ IP21 - for internal use
- ▶ Sounder and Beacon can be controlled independently on YBO-BSB*
- ▶ Auto shutdown mode*



CHQ-WS2
Wall Sounder

CHQ-WS2 Wall Sounder mounts directly onto standard or SCI sensor base

- ▶ 51 tones available (including DIN and ISO), selectable via the Control Panel*
- ▶ Variable sound output:- 5 volumes available 90 - 102dB(A)*
- ▶ Tones and Volumes selectable via the Control Panel
- ▶ White colour option available
- ▶ Auto shutdown mode*
- ▶ Can be used externally with addition of Weatherproofing Kit (WS2-WPK)



CHQ-AB
Beacon Range

CHQ-AB Beacon Range mounts directly onto any sensor base

- ▶ High Intensity LED technology
- ▶ Addressable via Hand Held Programmer (TCH-B100)
- ▶ Up to 127 devices per loop
- ▶ Choice of 3 lens colours (red, amber and blue)



CHQ-ARI
Remote Indicator

CHQ-ARI Remote Indicator mounts directly onto any sensor base

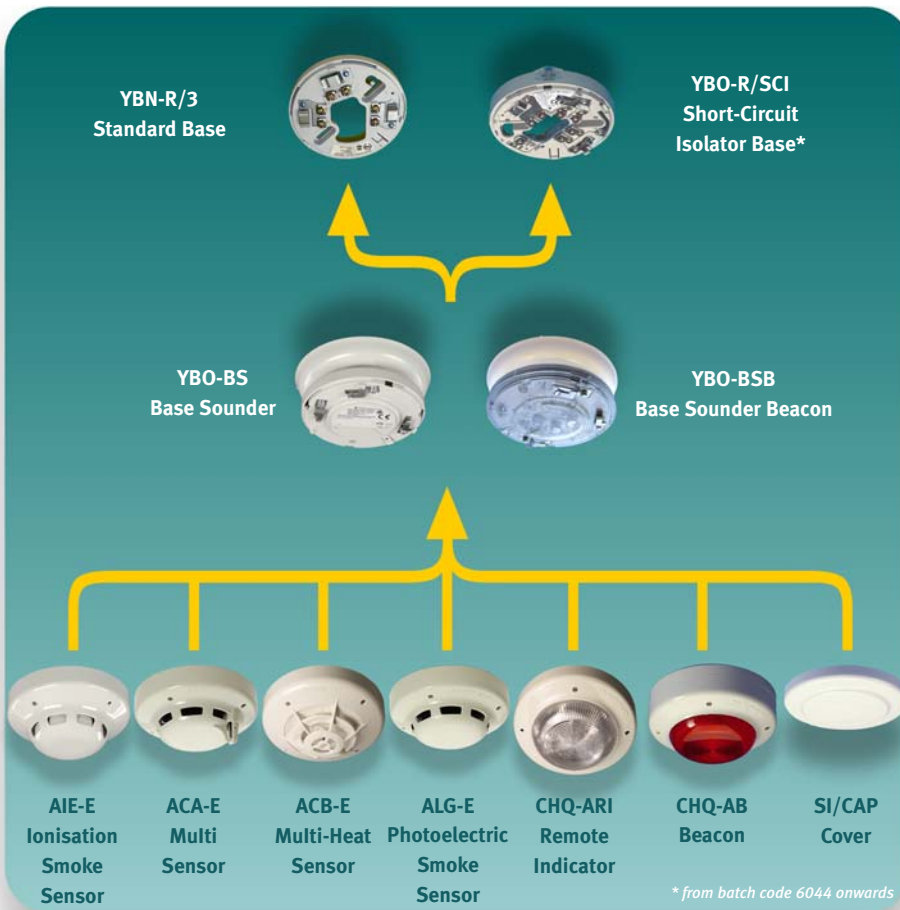
- ▶ High Intensity LED technology
- ▶ Addressable via Hand Held Programmer (TCH-B100)
- ▶ Up to 127 devices per loop

- ▶ All devices also available in WHITE

* Control Panel compatibility required.

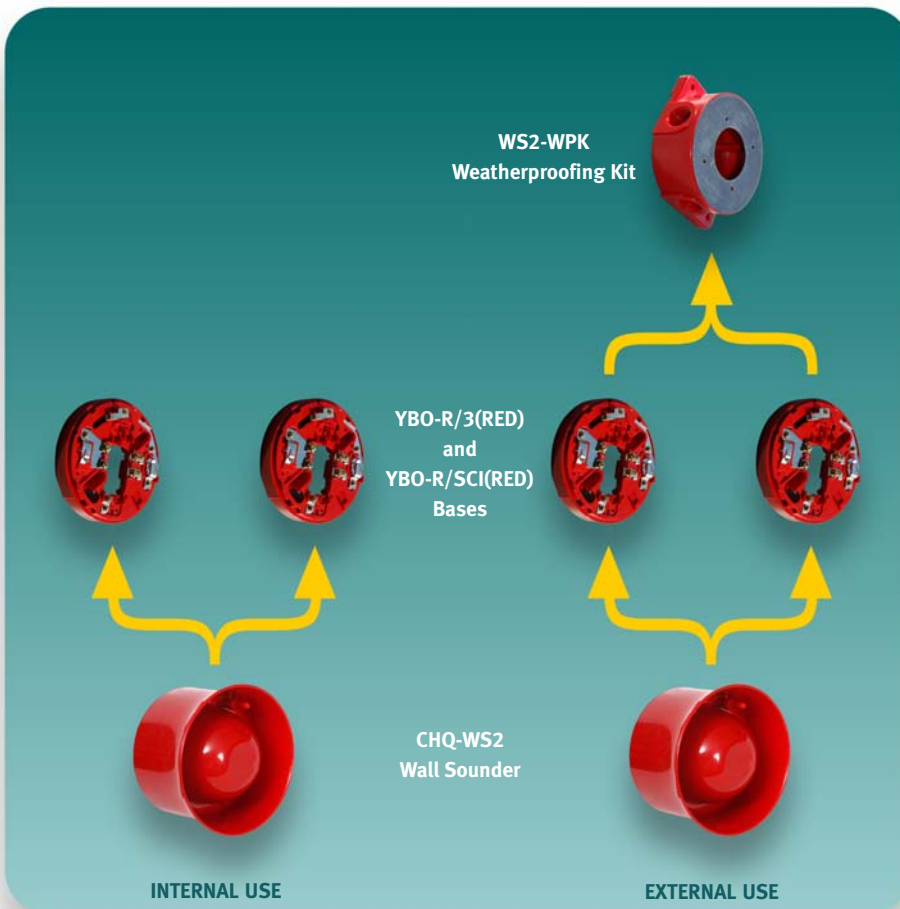
YBO-BS Base Sounder and YBO-BSB Base Sounder Beacon Connectivity

This chart shows how the YBO-BS Base Sounder and the YBO-BSB Base Sounder Beacon connects to bases, sensors and audio/visual devices in the Hochiki ESP Range.



CHQ-WS2 Wall Sounder Connectivity

This chart shows how the CHQ-WS2 connects to bases and the weatherproofing kit.



Addressing the YBO-BS and CHQ-WS2 Sounders

The default address of these units is 254. If the YBO-BS is to be used as a base sounder (sensor, beacon or remote indicator on top) then the address will not need to be changed, as the control panel will automatically address the sounder as described below. However, if the sounder is to be used purely as a wall sounder then the unit will need to be manually addressed between 1 and 127 as described below.

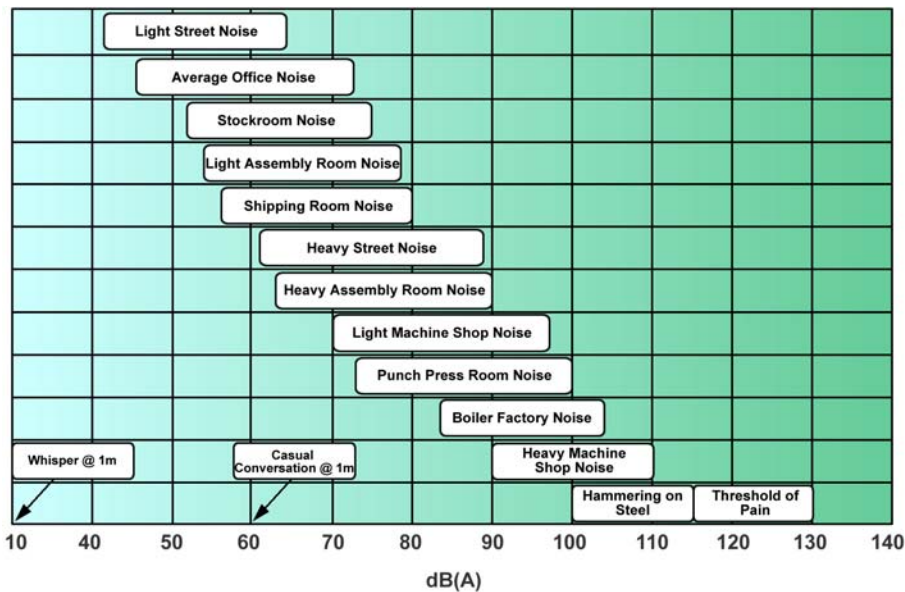
Automatic addressing (by Control Panel)

The control panel automatically assigns the address to the base sounder during initialisation. The address is calculated by taking the address of the sensor that is fitted to the base sounder and adding 127, this is then stored within the base sounder. For example, if a sensor is set at address 10 then the base sounder would be automatically set at address 137 (Addresses above 127 may not be visible to the user depending upon the implementation by the Control Panel).

Manual Addressing (by Hand Held Programmer)

The address can also be set using the Hand Held Programmer (TCH-B100) between 1 and 254. See the TCH-B100 instructions for further details on the address setting process. If the YBO-BS is to be used as a wall sounder then the address should be programmed between 1 and 127 before being installed. When installed vertically as a wall sounder these devices should also be fitted with an additional cover, the SI/CAP.

Loss of Decibels - Sounder Frequency Range



Adjustments to a Sounder's maximum volume level should be made depending on the frequency range of the Sounder:

Sounder Frequency Range	Adjustment
Up to 500Hz	Lose 0 dB(A)
500Hz to 1000Hz	Lose 3 dB(A)
1000Hz to 2000Hz	Lose 5 dB(A)

Loss of Decibels - Surfaces

The type of surfaces that predominate in the location of the Sounder will affect the maximum Sounder volume level:

Hard Finishes	Solid Stone or Brick Walls Solid Ceilings Stone or Tiled Flooring	Lose 0 dB(A)
Medium Finishes	Acoustic Ceiling Tiles Plastered Walls 5% Soft Coverings Composite Flooring (eg. Laminate)	Lose 8 dB(A)
Soft Finishes	Acoustic Ceiling Tiles Plastered Walls 5% Soft Coverings Carpeted Flooring	Lose 9 dB(A)

For example, a Sounder producing 95dB(A) @ 1 metre mounted within an area predominately furnished with soft finishes will actually only produce 86dB(A) @ 1 metre.

Loss of Decibels - Other Considerations

- Subtract 3dB(A) from Sounder's maximum volume level for safety margin – allowing for manufacturers tolerances.
- There is an inherent loss of volume through doors, lose 17dB(A) through normal doors, lose 27dB(A) through fire doors.

Loss of Decibels - Over Distance

This table shows the decrease in Sounder volume over distance.

Tip: Use the maximum Sounder volume level taking into account the Sounder's frequency range and the loss of volume through surfaces and doors as described above before calculating loss over distance:

m	dB(A)																								
1	65	70	80	85	90	92	94	96	98	100	102	104	106	108	110	112	114	116	118	120	122	124	126	128	130
2	59	64	74	79	84	86	88	90	92	94	96	98	100	102	104	106	108	110	112	114	116	118	120	122	124
3	55	60	70	75	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110	112	114	116	118	120
5	51	56	66	71	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110	112	114	116
10	45	50	60	65	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
20	39	44	54	59	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104
30	35	40	50	55	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100
50	~	36	46	51	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96
100		~	40	45	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90
200			~	39	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84
300				~	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80
500					~	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76
1000						~	~	~	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70
2000									~	~	~	38	40	42	44	46	48	50	52	54	56	58	60	62	64
3000												~	~	38	40	42	44	46	48	50	52	54	56	58	60
5000														~	~	38	40	42	44	46	48	50	52	54	56

This loss can be calculated with the following formula:

$$XdB(A) @ Y \text{ metres} = (X-6)dB(A) @ 2Y \text{ metres}$$

For example:

$$100dB(A) @ 1 \text{ metre} = (100-6)dB(A) @ 2 \text{ metres}$$

$$\therefore 100dB(A) @ 1 \text{ metre} = 94dB(A) @ 2 \text{ metres}$$

