



Technical Submission

Project	Sunlight House, Manchester			Project Ref.	1394
Tech Sub Ref.	TS-E- 1008	R2	Issued By	Paul Moss	
Date	25/06/2024		Authorised By	David Wilson	

Technical Submission	Fire Alarm	
SPECIFICATION COMPLIANCE	✓	In compliance with 4084-KIN-XX-XX-SP-E-001-T4 - 4.7.1
DEROGATIONS		
CALCULATIONS PROVIDED		

Please refer to the following data for the fire alarm to be provided on the above project:

All to be of the Hochiki manufacturer

Analogue photoelectric smoke sensor
Analogue multi heat sensor
Analogue addressable manual call point
Analogue addressable base sounder
Analogue dual relay controller

Design assessment to be undertaken on system conformity

- a) There are currently 6nr controls panels on site providing 24 loops and an absolute maximum of 3048 devices excluding sounders that are combined with a detector
b) Estimated that 60-70% utilisation of existing capacity used for the project including existing areas out of scope of works
c) The above does not allow for system loading which may lower the actual usable capacity of the system
d) The above will be checked and confirmed through the design process of the system
e) Dependant on the outcome of the design additional control panels may be required to provide adequate capacity for the new specification with an allowance for future modifications , at which point an updated tech sub can be released, however the panels will be a match for the current installed Advanced System

Information Required From	Myco
Latest Date Required	09/07/2024

Acceptance/Refusal			
STATUS A	STATUS B	STATUS C	

Response From	
Response Date	

Analogue Photoelectric Smoke Sensor

ALN-EN



Features

- ▶ Removable, High Performance chamber
- ▶ Twin LEDs allow 360° viewing – green when polling, turn red in fire
- ▶ Locking mechanism (sensor to base)
- ▶ Variable sensitivity
- ▶ Electronically addressed
- ▶ Pulsing/non-pulsing controlled from panel*
- ▶ Approved by LPCB & VdS
- ▶ SIL Level 2 approved variants available
- ▶ Available in white

Description

Model ALN-EN is a Photoelectric Smoke Sensor, which is fully compatible with Hochiki's ESP Analogue Addressable Protocol.

The ALN-EN incorporates Hochiki's newest High Performance Chamber Technology removing the need to use Ionisation Smoke Sensors in the majority of applications. This also allows the sensor threshold level to be increased, thereby improving the signal to noise ratio and reducing susceptibility to false alarms.

The ALN-EN smoke chamber is easily removed or replaced for cleaning and utilises a unique improved baffle design which allows smoke to enter the chamber whilst keeping out ambient light.

Specification	
Ordering Code	ALN-EN ALN-EN(WHT)
Operating Voltage	17 – 41 V d.c.
Low Power Mode (typ)	120 A
Quiescent Current (typ)	400 μ A
Alarm Current (controlled by CIE)	9.1 mA (excluding remote indicator)
Transmission Method	Digital Communications Using ESP
Operating Temperature Range	-10 °C to + 50 °C
Operating Humidity	95% RH - Non Condensing (at 40 °C)
Storage Temperature Range	-30 °C to +60 °C
Storage Humidity	<80% RH at 60 °C
Colour / Case Material	Ivory or White / ABS
Weight (g)	95
Diameter (mm) / Height (mm)	100 / 45
Compatible Bases	YBN-R/3, YBO-R/SCI, YBO-BS, YBO-BSB, YBN-R/3(SCI)
Base Fixing Centres (mm)	48 ~ 74
Approvals	LPCB & VdS

*Control Panel compatibility required

Analogue Multi-Heat Sensor

ATJ-EN



Features

- ▶ User selectable modes
- ▶ Incorporates Fixed Temperature and Rate Of Rise Heat elements
- ▶ Twin LEDs allow 360° viewing – green when polling, turn red in fire
- ▶ Pulsing/non-pulsing controlled from panel*
- ▶ Electronically addressed
- ▶ LPCB & VdS approved to Classes A1, B & C
- ▶ SIL Level 2 approved variants available
- ▶ Available in white

Description

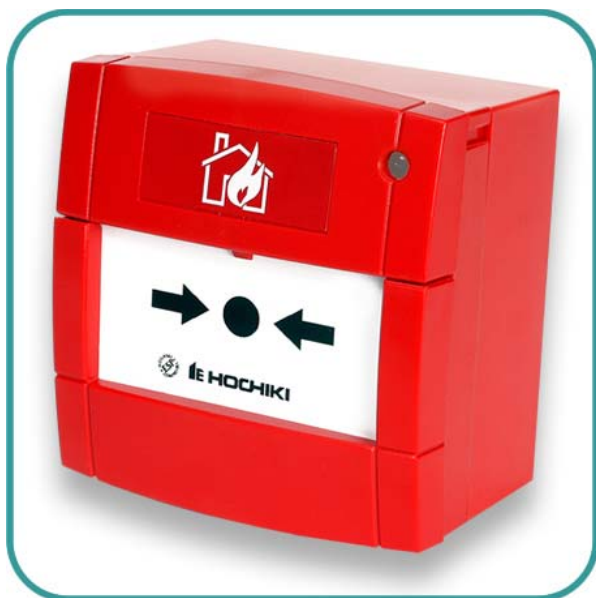
Model ATJ-EN is a Multi-Heat Sensor, which is fully compatible with Hochiki's ESP Analogue Addressable Protocol.

The ATJ-EN incorporates a Variable Temperature heat element and a Rate Of Rise heat element, both of which are controlled from the Control Panel, allowing either thermal element or both elements simultaneously to be active in making the fire decision. The sensor polling LEDs can also be controlled via the Control Panel (pulsing/non-pulsing)*.

Specification	
Ordering Code	ATJ-EN ATJ-EN(WHT)
Operating Voltage	17 – 41 V d.c.
Low Power Mode (typ)	110 μ A
Quiescent Current (typ)	350 μ A
Alarm Current (controlled by CIE)	9.1 mA (excluding remote indicator)
Transmission Method	Digital Communications Using ESP
Operating Temperature Range	-10 °C to +50 °C
Operating Humidity	95% RH - Non Condensing (at 40 °C)
Storage Temperature Range	-30 °C to +60 °C
Storage Humidity	<80% RH at 70 °C
Colour / Case Material	Ivory or White / Polycarbonate
Weight (g)	90
Diameter (mm) / Height (mm)	100 / 45
Compatible Bases	YBN-R/3, YBO-R/SCI, YBO-BS, YBO-BSB, YBN-R/3(SCI)
Base Fixing Centres (mm)	48 ~ 74
Approvals	LPCB & VdS approved to Classes A1, B & C

*Control Panel compatibility required

Analogue Addressable Manual Call Point with Short-Circuit Isolator *HCP-E(SCI)*



Features

- ▶ Fast response
- ▶ Bi-coloured status LED (red for alarm, amber for short-circuit)
- ▶ Non-frangible element fitted as standard (conforms to EN54)
- ▶ Addressed with TCH-B100 Hand Held Programmer
- ▶ Surface or flush mounting (if surface mounting, requires SR MOUNTING BOX – sold separately)
- ▶ LPCB Approved to EN54

Description

Model HCP-E(SCI) is a Manual Call Point with integral short-circuit isolator, which is fully compatible with Hochiki's ESP analogue addressable protocol. The unit incorporates a bi-coloured LED, which can be selected as pulsing/non-pulsing^{*1} for communications polling and is continuously lit when the HCP-E(SCI) is operated – in these two states the LED will show red. The LED will show amber when a short-circuit is present but will switch to red if the unit is activated. The unit operates by pressing the EN54 compliant non-frangible (plastic) element and produces a high level ESP interrupt. A built in test function initiated by the control panel ensures the integrity of the device at all times and the device can be tested by insertion of a test key in the underside of the unit. Two terminal blocks are provided for easy connection to the loop wiring.

The unit is addressed using the TCH-B100 Hand Held Programmer for quick and reliable addressing. The unit can be flush mounted as supplied. For surface fixing a suitable back box such as the SR MOUNTING BOX is required (sold separately). An optional glass element is also available.

Specification	
Ordering Code	HCP-E(SCI)
Back Box Ordering Code	SR MOUNTING BOX (required for surface fixing – sold separately)
Operating Voltage	17 – 41 VDC
Low Power Mode	180 μ A (max), 100 μ A (typ)
Quiescent Current	350 μ A (max), 250 μ A (typ)
Alarm Current	10.0 mA (max), 5 mA (typ)
Resistance in positive	100 m Ω when closed (max), 100 k Ω when open (min)
Short-circuit threshold (typ)	430 Ω
Transmission Method	Digital Communication Using ESP
Operating Temperature Range	-10 °C to + 50 °C
Storage Temperature Range	-30 °C to + 70 °C
Maximum Humidity	95%RH - Non Condensing (at 40 °C)
Ingress Protection Rating	IP24
Colour / Case Material	Red / Modified Polyphenylene Oxide
Weight (g) / Dimensions (mm)	(Flush Unit) 110 / W89 x H93 x D27.5
	(With Surface Mount Back Box) 161 / W89 x H93 x D59.5

^{*1} Fire alarm control panel compatibility is required for this feature.

Analogue Addressable Base Sounder Beacon

YBO-BSB2



Features

- ▶ Single Loop Address - addressed via the TCH-B100 Hand Held Programmer
- ▶ Variable Sound Output
50 ~ 98 dB(A) (± 2 dB(A)) output at 1 metre
- ▶ Sounder and Beacon can operate independently*¹
- ▶ 0.5 or 1Hz flash frequency*¹
- ▶ Fits Hochiki Standard or Isolator Base and supports ESP Sensors, Addressable Beacons and Addressable Remote Indicator
- ▶ 51 User-Selectable Tones (all tones EN54-3 compatible)
- ▶ Auto-Shutdown feature prevents noise-pollution*¹
- ▶ 'O' Rated Beacon to EN54-23
- ▶ Available with Red or White LEDs
- ▶ Available with White or Ivory case

Description

Model YBO-BSB2 is an addressable loop powered Base Sounder with integral Beacon, innovatively designed to give a range of tones and volumes with a maximum output of up to 98 dB(A) (± 2 dB(A)) with low current consumption. The unit is designed to fit to the Standard Base (YBN-R/3) or the Isolator Base YBN-R/3(SCI) and can be fitted with any of the ESP Range of Sensors, Beacons or Remote Indicators. The unit can also be converted into a wall sounder beacon with the simple addition of a Cap (SI/CAP2). The sounder is Ingress Protection rated to IP21 and for internal use only. An Auto-Shutdown feature allows the user to set a fixed time within which the sounder or beacon will operate, before automatically shutting down, cutting noise pollution in the case of the sounder element*¹. Sounder and Beacon elements can be operated independently from each other*¹.

Specification

Ordering Codes	YBO-BSB2/WL, YBO-BSB2(WHT)/WL, YBO-BSB2/RL, YBO-BSB2(WHT)/RL (see page 2 for further details)
Operating Voltage	17 ~ 41 Vdc
Low Power Mode (typ)	110 μ A
Quiescent Current (typ)	250 μ A
Sounding Current (typ)	0.8 mA (50 dB(A) @ 1 m) ~ 16 mA (98 dB(A) @ 1 m)
Additional Current when Beacon active	+ 7 mA
Sound Output (at 1 metre)	50 ~ 98 dB(A) (± 2 dB(A)) @ 24 Vdc or above (EN54-3 compliant)
Number of Tones	51
Tone Frequency Range	300 Hz ~ 2850 Hz
Operating Temperature Range	-10 °C to +50 °C
Storage Temperature Range	-30 °C to +70 °C
Maximum Humidity	95% RH - Non Condensing (at 40 °C)
Colour / Case Material	Ivory or White / PC+PS+GF5
Lens Material	Translucent PC
Ingress Protection Rating	IP21
Weight (g) / Dimensions (mm)	160 / H113 x W113 x D43
Base Fixing Centres (mm)	48 ~ 74

*¹ Panel compatibility dependant

Note: Although the TCH-B100 Hand Held Programmer will allow addresses between 128 and 255 to be programmed into the YBO-BSB2, addresses 1 to 127 ONLY should be used.

Hochiki Europe (UK) Ltd. reserves the right to alter the specification of its products from time to time without notice. Although every effort has been made to ensure the accuracy of the information contained in this document it is not warranted or represented by Hochiki Europe (UK) Ltd. to be a complete and up-to-date description.

How to choose your Hochiki VAD

Our VAD ratings comprise three parts, **X-Y-Z**

where **X** denotes the category, either “O” for Open, “W” for Wall or “C” for ceiling

where **Y** denotes the maximum mounting height (m)

where **Z** is the width and length (m) of the coverage floor area

For example **C-3-5** means the VAD is in the Ceiling category, can be mounted at a maximum ceiling height of 3 metres and produces a 5 metre diameter coverage (in other words a cylinder 3m high x 5m wide).

What type of VAD?	Which case colour?	Which LED colour?	Product	EN54-23 Ratings* ⁴		
Base Sounder Beacon	Ivory case	White LEDs	YBO-BSB2/WL	'O' Rated		
		Red LEDs	YBO-BSB2/RL			
	White case	White LEDs	YBO-BSB2(WHT)/WL			
		Red LEDs	YBO-BSB2(WHT)/RL			
Wall Sounder Beacon	Red case	White LEDs	CHQ-WSB2/WL			
		Red LEDs	CHQ-WSB2/RL			
	White case	White LEDs	CHQ-WSB2(WHT)/WL			
		Red LEDs	CHQ-WSB2(WHT)/RL			
				1	2	3
Ceiling Beacon	Ivory case	Red LEDs	CHQ-CB/RL	O	C-3-7.5	C-3-10
		White LEDs	CHQ-CB/WL	C-3-5	C-3-7.5	C-3-10
			CHQ-CB/WL-15	O	C-3-10	C-3-15
	White case	Red LEDs	CHQ-CB(WHT)/RL	O	C-3-7.5	C-3-10
		White LEDs	CHQ-CB(WHT)/WL	C-3-5	C-3-7.5	C-3-10
			CHQ-CB(WHT)/WL-15	O	C-3-10	C-3-15
	Red case	Red LEDs	CHQ-CB(RED)/RL	O	C-3-7.5	C-3-10
		White LEDs	CHQ-CB(RED)/WL	C-3-5	C-3-7.5	C-3-10
			CHQ-CB(RED)/WL-15	O	C-3-10	C-3-15
Wall Beacon	Ivory case	White LEDs	CHQ-WB/WL	W-2.4-5	W-2.4-6	W-2.4-7
		Red LEDs	CHQ-WB/RL	O	O	W-2.4-5
	White case	White LEDs	CHQ-WB(WHT)/WL	W-2.4-5	W-2.4-6	W-2.4-7
		Red LEDs	CHQ-WB(WHT)/RL	O	O	W-2.4-5
	Red case	White LEDs	CHQ-WB(RED)/WL	W-2.4-5	W-2.4-6	W-2.4-7
		Red LEDs	CHQ-WB(RED)/RL	O	O	W-2.4-5

*4 Ratings are all based on 0.5Hz frequency.

Current when Beacon active

CHQ-CB/WL&RL & CHQ-WB/WL & RL	mA	6	12	17
CHQ-CB/WL-15	mA	6	12	38
CHQ-WSB2/WL&RL	mA	7 (one setting only)		
YBO-BSB2/WL&RL	mA	7 (one setting only)		

For CHQ-CB/WL & RL Default setting is **C-3-7.5**

For CHQ-CB/WL-15 Default setting is **C-3-15**

Note: Our VAD product codes feature “WL” which means white LEDs and “RL” which means red LEDs.

For details of O Rating for Ceiling Beacon please see Application Note **AP131**.

For details of O Rating for Wall Sounder Beacon see Application Note **AP132**.

For details of O Ratings for Base Sounder Beacon please see Application Note **AP133**.

Analogue Dual Relay Controller

CHQ-DRC2(SCI)



Features

- ▶ Loop powered
- ▶ Single loop address
- ▶ 2 Independently controlled changeover relays
- ▶ Relays contact rated at 30 V dc at 1 A
- ▶ Auxiliary monitored input
- ▶ DIN-Rail version available
- ▶ Both models feature an integral short-circuit isolator
- ▶ Both models approved by LPCB
- ▶ SIL Level 2 approved variant available

Description

Model CHQ-DRC2(SCI) is a Dual Relay Controller designed to provide two general-purpose relay outputs, each output can be driven separately for control of such devices as dampers or for control of plant and equipment shutdown. The monitored input can be used for local power supply fault monitoring or as a general-purpose input.

The unit is also available as a DIN Rail mountable version; both models feature an integral short-circuit isolator. The CHQ-DRC2(SCI) utilises simple DIL switches for reliable addressing. A back box is also available (CHQ-BACKBOX) which, when used in conjunction with the CHQ-DRC2(SCI), increases the IP rating to IP65.

Specification

Order codes* ¹		CHQ-DRC2(SCI)		(module with SCI)
		CHQ-DRC2(HFP)-SCI		
		CHQ-DRC2/DIN(SCI)		(DIN module with SCI)
		CHQ-DRC2/DIN(HFP)-SCI		
Operating voltage		17 - 41 V dc		
Low Power Mode (0.75s)		170 μA		
Quiescent current		300 μA		
Current consumption		22 mA ± 20 % (polling)		
Current in short-circuit		8 mA		
Maximum short-circuit current		1 A (loop)		
Relay Contact Rating		30 V dc max, 1 A (resistive load)		
Input E.O.L. resistor		10 kΩ, ±5%, 0.25 W		
Input threshold level		ON=470 Ω, Short cct <50 Ω, Open cct >100 KΩ		
Operating Temperature Range		-10 °C to +50 °C		
Storage Temperature Range		-30 °C to +60 °C		
Maximum Humidity		95%RH Non Condensing (at 40°C)		
Weights (g) & Dimensions (mm)	Module Enclosure	343	L=157 x W=127 x D=35 (Module & Lid) D=79 (Module, Lid & CHQ-BACKBOX) (add 235 to module weight when using CHQ-BACKBOX)	
	DIN Enclosure	124	L=119 x W=108 x D=24	
Colour and enclosure material		CHQ Module & CHQ-BACKBOX White ABS, DIN Module Green ABS, Module Lid Semi-Opaque Black ABS as standard (white version – CHO-LID(WHT) also available)		

*¹ Fire alarm control panel compatibility required for these products.

Hochiki Europe (UK) Ltd. reserves the right to alter the specification of its products from time to time without notice. Although every effort has been made to ensure the accuracy of the information contained in this document it is not warranted or represented by Hochiki Europe (UK) Ltd. to be a complete and up-to-date description.