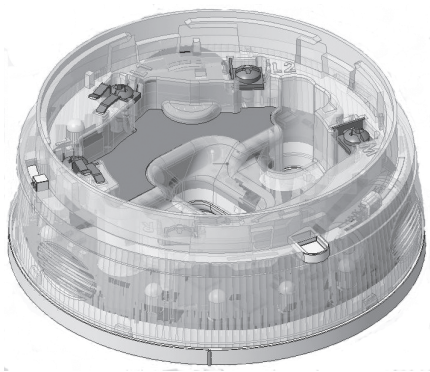


# Visual Alarm Device Open Class Base Sounder Beacon

	<p>The FC442AVB Open Class Visual Alarm Device Sounder Beacon is a loop powered unit driven from an addressable control panel.</p>
	<p>The FC442AVB has an integral two port loop short circuit isolator.</p>
	<p>The FC442AVB also has a base for fitting a fire detector, or alternatively a blanking cap can be used.</p>
	<p>Settings for the tones, beacon flash rate and volume levels are all configurable using the control panel.</p>
	<p>The selectable flash rates are as follows:</p> <ul style="list-style-type: none"> <li>■ 1Hz (one flash every second)</li> <li>■ 0.5Hz (one flash every two seconds)</li> </ul>

## Summary of the range

Product	Details	Order number
FC442AVB	Addressable OC Base Sounder Beacon	576.440.015
<b>Accessories</b>		
B-CAP	Blanking Cap For Sounder/VID/VAD Bases	557.080.001
A-CON	Conduit Adaptor For Sounder/VID/VAD Bases	557.080.002

Table 1: Summary of the range

## Performance characteristics

	FC442AVB
<b>Mounting orientation</b>	Ceiling
<b>Indoor type A/outdoor type B</b>	Indoor
<b>Weight (g)</b>	154
<b>Housing material</b>	PC
<b>Housing colour</b>	Clear
<b>Operating temperature (°C)</b>	-25 to +70
<b>Storage temperature (°C)</b>	-25 to +70
<b>Humidity</b>	Up to 95% non-condensing
<b>Pressure</b>	Sounder SPL output quoted for 1000 mBar
<b>Sounder volume settings</b>	4
<b>EN54-17 isolator</b>	Yes
<b>EN54-3 sounder</b>	Yes
<b>EN54-23 visual alarm</b>	Yes
<b>Vibration, shock, corrosion, EMC</b>	Complies with EN54 series requirements
<b>Beacon flash rates</b>	0.5 and 1 Hz
<b>Ingress protection</b>	IP21C
<b>Typical Sounder output at 1 metre</b>	
<b>High volume</b>	90 dBA
<b>Mid High volume</b>	80 dBA
<b>Mid Low volume</b>	70 dBA
<b>Low volume</b>	60 dBA*
<b>Beacon performance</b>	
<b>Flash colour</b>	White
<b>Electrical characteristics</b>	
<b>Addressable loop voltage</b>	20 V - 40 V, 35 V Typical

Table 2: Performance characteristics

\*The Low setting on the FC442AVB does not meet the volume level requirements of EN54-3.

**Note:** For IP21C protection, a fire detector or blanking cap must be fitted.

## Beacon performance

The FC442AVB is a category O - open class device (see Fig.1). The data applies to both the Slow Flash (1/2 Hz) and the Fast Flash (1 Hz) while it is fitted with either a detector or a blanking cap.

The light distribution is cylindrically symmetrical about an axis at a right angle (Alpha of 90°) to the surface on which the device is mounted, i.e. when the device is mounted on a horizontal ceiling, the light distribution is symmetrical about an axis extending vertically downwards through the centre of the device. The light distribution in Fig.1 represents a cross-section through the volumetric shape using the values as indicated in table 3.

Alpha [degrees]	Distance [metres]
90	0
75	0
60	1
45	1.4
30	1.75
15	1.95
0	1.85

Table 3: Beacon-Sounder - 0.4 lm/m<sup>2</sup> illumination distance

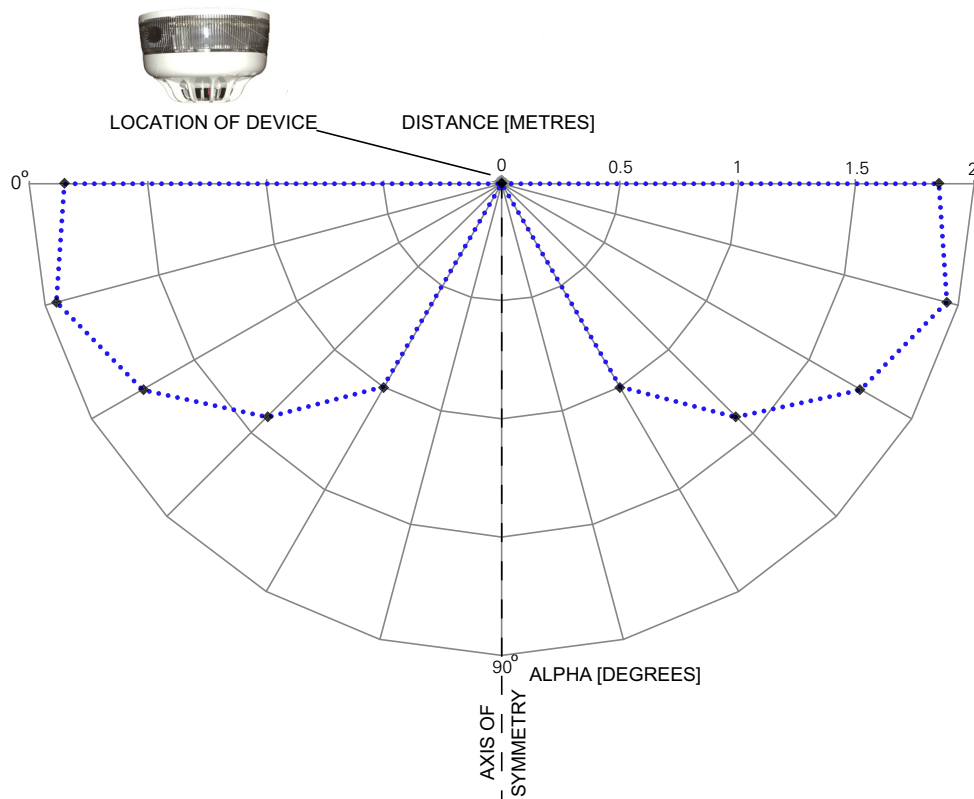


Fig. 1: Beacon-Sounder - ceiling mount light distribution

## Address programming

Default address = 255. Set the address before installation using either the FC490ST service tool with its ancillary lead.

## Isolator characteristics

Parameter	Isolator	
$V_{min}, V_{max}, V_{nom}$	Line voltage range	20 V - 40 V, 35 V nominal
$V_{SO min}, V_{SO max}$	Isolator trip threshold range	18.5 V - 19.99 V
$V_{SC min}, V_{SC max}$	Isolator recovery threshold	2.9 V, 3.5 V
$I_{C max}$	Maximum rated continuous current	1.1 A
$I_{L max}$	Leakage current into short circuit (isolated tripped)	10 mA
$I_{S max}$	Maximum rated switching current	1.1 A non-inductive
$Z_{C max}$	Maximum series impedance	0.5 $\Omega$
$Z_{C typ}$	Typical series impedance	0.25 $\Omega$

Table 4: Isolator characteristics

## Sounder tones and performance

Tone name	Tone description			Configurable/monitored (only if volume is 80 dB or above) Ceiling
	Pattern	Frequency	Rate	
Dutch Slow Whoop	Sweep	500 to 1200	Rising over 3.5 s, 0.5 gap	Yes/Yes
7 Hz Fast Sweep	Sweep	800 to 970	142.8 ms ramp 7 Hz	Yes/Yes
BS 1 Hz Sweep	Sweep	800 to 970	1 Hz	Yes/Yes
2 Tone	Alternating	660 / 880	500 ms per tone	Yes/Yes
Temporal 4	Intermittent	880	500 ms On 500 ms Off x 4 then 1 second gap	Yes/Yes
Temporal 3	Intermittent	880	500 ms On 500 ms Off x 3 then 1 second gap	Yes/Yes
March Time Beep	Intermittent	880	500 ms On 500 ms Off	Yes/Yes
Continuous 970	Continuous	970	Steady	Yes/Yes
DIN 1 Hz Sweep	Sweep	1200 to 500	Falling over 1 s	Yes/Yes
Banshee LF Buzzer	Sweep	800 to 950	120 Hz	Yes/Yes
3 Hz Banshee	Sweep	800 to 950	3 Hz	Yes/Yes
9 Hz Banshee	Sweep	800 to 950	9 Hz	Yes/Yes
Alternating	Alternating	554/440	554 Hz for 100 ms and 440 Hz for 400 ms	Yes/Yes
Yodalarm	Alternating	800/1000	250 ms for each frequency	Yes/Yes
Conventional Bell	Continuous	1450	Steady	Yes/Yes

Table 5: Sounder tones and performance

**Note 1:** If the pulse pattern is assigned by the control panel, then only continuous tones can be configured.

**Note 2:** The conventional bell is a simulated tone with limited bandwidth. It is not advisable to mix conventional bells with electronic sounders producing a simulated bell tone.

## Loop loading

Sounder volume	Beacon flash rate	Alarm current
OFF	OFF	0.35 mA
LOW	OFF	2.45 mA
HIGH	OFF	4.32 mA
HIGH	0.5 Hz	8.10 mA
HIGH	1 Hz	11.30 mA

Table 6: Loop loading

**Note:** Please refer to the loop loading calculator for these units.

## Sounder performance Volume HIGH

Volume HIGH	Angle	Ceiling devices - sound performance horizontal (dBA at 1 m)						Ceiling devices - sound performance vertical (dBA at 1 m)					
		15°	45°	75°	105°	135°	165°	15°	45°	75°	105°	135°	165°
Dutch Slow Whoop	40V	> 95	> 87	> 83	> 82	> 80	> 80	> 94	> 87	> 82	> 81	> 84	> 87
	20V	> 93	> 86	> 82	> 80	> 78	> 78	> 92	> 83	> 80	> 79	> 82	> 87
7 Hz Fast Sweep	40V	> 93	> 85	> 81	> 79	> 77	> 78	> 92	> 85	> 81	> 80	> 81	> 87
	20V	> 91	> 83	> 79	> 77	> 76	> 76	> 90	> 82	> 79	> 78	> 80	> 86
BS 1 Hz Sweep	40V	> 94	> 86	> 82	> 81	> 78	> 79	> 93	> 86	> 82	> 80	> 83	> 88
	20V	> 92	> 85	> 81	> 79	> 77	> 77	> 91	> 83	> 79	> 79	> 82	> 86
2 Tone	40V	> 94	> 86	> 83	> 82	> 76	> 80	> 94	> 86	> 82	> 80	> 84	> 88
	20V	> 93	> 85	> 82	> 80	> 76	> 78	> 91	> 83	> 79	> 79	> 82	> 85
Temporal 4	40V	> 98	> 90	> 87	> 85	> 80	> 84	> 97	> 89	> 84	> 84	> 88	> 92
	20V	> 93	> 87	> 84	> 82	> 77	> 81	> 95	> 87	> 79	> 79	> 82	> 89
Temporal 3	40V	> 98	> 90	> 87	> 85	> 80	> 84	> 97	> 90	> 84	> 84	> 88	> 92
	20V	> 95	> 87	> 84	> 82	> 77	> 81	> 95	> 88	> 82	> 82	> 85	> 89
March Time beep	40V	> 98	> 90	> 87	> 85	> 80	> 84	> 97	> 90	> 84	> 84	> 87	> 91
	20V	> 95	> 87	> 84	> 82	> 77	> 81	> 96	> 88	> 81	> 81	> 87	> 91
Continuous 970 Hz	40V	> 92	> 82	> 79	> 77	> 77	> 74	> 92	> 83	> 79	> 76	> 79	> 83
	20V	> 91	> 79	> 77	> 75	> 75	> 72	> 90	> 81	> 79	> 75	> 79	> 83
DIN 1 Hz Sweep	40V	> 94	> 86	> 81	> 79	> 78	> 78	> 93	> 86	> 81	> 81	> 82	> 87
	20V	> 91	> 83	> 79	> 77	> 75	> 75	> 91	> 83	> 80	> 79	> 81	> 86
Banshee LF Buzzer	40V	> 94	> 86	> 81	> 79	> 77	> 77	> 93	> 85	> 81	> 80	> 82	> 87
	20V	> 91	> 84	> 78	> 75	> 75	> 73	> 91	> 84	> 79	> 79	> 80	> 85
3 Hz Banshee	40V	> 94	> 86	> 82	> 82	> 77	> 78	> 93	> 85	> 81	> 80	> 82	> 87
	20V	> 91	> 83	> 79	> 77	> 75	> 76	> 91	> 83	> 79	> 78	> 81	> 86
9 Hz Banshee	40V	> 94	> 85	> 81	> 78	> 76	> 77	> 92	> 85	> 81	> 80	> 81	> 87
	20V	> 92	> 83	> 79	> 76	> 74	> 75	> 90	> 83	> 79	> 78	> 80	> 85
Alternating	40V	> 95	> 86	> 82	> 80	> 78	> 79	> 94	> 87	> 81	> 81	> 84	> 87
	20V	> 91	> 84	> 79	> 76	> 76	> 76	> 92	> 85	> 79	> 79	> 82	> 86
Yodalarm	40V	> 94	> 85	> 81	> 78	> 76	> 78	> 93	> 86	> 81	> 80	> 81	> 87
	20V	> 90	> 82	> 78	> 76	> 75	> 75	> 90	> 83	> 79	> 79	> 80	> 85
Conventional Bell	40V	> 91	> 83	> 78	> 79	> 76	> 77	> 91	> 83	> 81	> 79	> 81	> 86
	20V	> 89	> 81	> 78	> 77	> 75	> 76	> 89	> 82	> 80	> 78	> 79	> 84

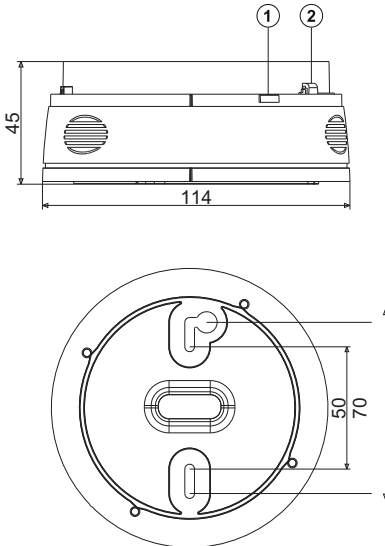
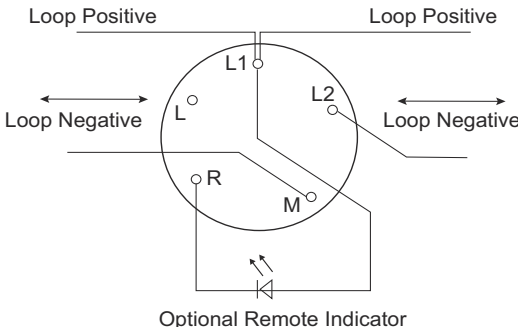
Table 7: Sounder performance Volume HIGH

## Sounder performance Volume MID-LOW

Volume MID-LOW		Ceiling devices - sound performance horizontal (dBA at 1 m)						Ceiling devices - sound performance vertical (dBA at 1 m)						
Tone		Angle	15°	45°	75°	105°	135°	165°	15°	45°	75°	105°	135°	165°
Dutch Slow Whoop	40V		> 77	> 69	> 64	> 63	> 61	> 62	> 75	> 68	> 64	> 62	> 66	> 71
	20V		> 77	> 69	> 64	> 63	> 61	> 62	> 75	> 68	> 64	> 62	> 66	> 71
7 Hz Fast Sweep	40V		> 71	> 63	> 59	> 59	> 59	> 65	> 70	> 63	> 59	> 59	> 61	> 66
	20V		> 71	> 63	> 59	> 59	> 59	> 65	> 70	> 63	> 59	> 59	> 61	> 66
BS 1 Hz Sweep	40V		> 71	> 64	> 60	> 60	> 61	> 66	> 71	> 62	> 62	> 58	> 57	> 55
	20V		> 71	> 64	> 60	> 60	> 61	> 66	> 71	> 62	> 62	> 58	> 57	> 55
2 Tone	40V		> 72	> 65	> 59	> 59	> 61	> 66	> 73	> 63	> 61	> 59	> 57	> 56
	20V		> 72	> 65	> 59	> 59	> 61	> 66	> 73	> 63	> 61	> 59	> 57	> 56
Temporal 4	40V		> 80	> 72	> 67	> 66	> 62	> 65	> 79	> 71	> 66	> 66	> 69	> 73
	20V		> 80	> 72	> 67	> 66	> 62	> 65	> 79	> 71	> 66	> 66	> 69	> 73
Temporal 3	40V		> 80	> 72	> 67	> 66	> 62	> 65	> 79	> 71	> 66	> 66	> 69	> 73
	20V		> 80	> 72	> 67	> 66	> 62	> 65	> 79	> 71	> 66	> 66	> 69	> 73
March Time beep	40V		> 79	> 72	> 69	> 67	> 62	> 65	> 79	> 72	> 65	> 65	> 70	> 73
	20V		> 79	> 72	> 69	> 67	> 62	> 65	> 79	> 72	> 65	> 65	> 70	> 73
Continuous 970 Hz	40V		> 72	> 62	> 60	> 60	> 59	> 61	> 72	> 61	> 59	> 59	> 59	> 61
	20V		> 72	> 62	> 60	> 60	> 59	> 61	> 72	> 61	> 59	> 59	> 59	> 61
DIN 1 Hz Sweep	40V		> 73	> 66	> 61	> 61	> 62	> 67	> 74	> 66	> 62	> 61	> 63	> 68
	20V		> 73	> 66	> 61	> 61	> 62	> 67	> 74	> 66	> 62	> 61	> 63	> 68
Banshee LF Buzzer	40V		> 71	> 63	> 59	> 59	> 60	> 65	> 72	> 63	> 61	> 59	> 57	> 57
	20V		> 71	> 63	> 59	> 59	> 60	> 65	> 72	> 63	> 61	> 59	> 57	> 57
3 Hz Banshee	40V		> 71	> 63	> 59	> 59	> 60	> 65	> 72	> 63	> 62	> 59	> 57	> 57
	20V		> 71	> 63	> 59	> 59	> 60	> 65	> 72	> 63	> 62	> 59	> 57	> 57
9 Hz Banshee	40V		> 70	> 63	> 59	> 58	> 59	> 65	> 72	> 62	> 61	> 59	> 57	> 56
	20V		> 70	> 63	> 59	> 58	> 59	> 65	> 72	> 62	> 61	> 59	> 57	> 56
Alternating	40V		> 76	> 68	> 64	> 64	> 65	> 70	> 76	> 69	> 64	> 63	> 66	> 70
	20V		> 76	> 68	> 64	> 64	> 65	> 70	> 76	> 69	> 64	> 63	> 66	> 70
Yodalarm	40V		> 70	> 63	> 60	> 60	> 61	> 63	> 72	> 65	> 60	> 61	> 61	> 66
	20V		> 70	> 63	> 60	> 60	> 61	> 63	> 72	> 65	> 60	> 61	> 61	> 66
Conventional Bell	40V		> 70	> 63	> 61	> 58	> 59	> 65	> 71	> 62	> 62	> 58	> 57	> 55
	40V		> 70	> 63	> 61	> 58	> 59	> 65	> 71	> 62	> 62	> 58	> 57	> 55

Table 8: Sounder performance Volume MID-LOW

## Installation information

Dimensions	Cabling and wiring	Contact	Function
 <p>Fig. 2: Base unit 1- Temporary park plunger and indicator (yellow) for short circuit isolator 2- Address flag holder</p>	 <p>Fig. 3: Wiring</p> <p><b>Wiring notes</b></p> <ul style="list-style-type: none"> <li>All wiring must comply with local installation regulations and local fire system design requirements.</li> <li>Ensure all conductors are free of earths.</li> <li>Verify correct wiring and wiring polarity before connecting the devices to the addressable loop.</li> </ul>	L	Not used
		L1	Positive line in and out
		L2	Negative line (isolator in or out)
		M	Negative line (isolator in or out)
		R	Remote LED out, wired only if a remote indicator is required

## Mounting and fixing instructions

This unit either fits directly to the ceiling or to an optional ceiling adaptor. The ceiling mounted variants provide a base for fitting a fire detector. Alternatively, a blanking cap is fitted. See Fig 4.

See Fig 5 for fitting the locking pin. To remove a detector from a base with a locking pin, complete these steps:

- 1 Insert a suitable tool into the access hole to depress the locking pin in the detector cover.
- 2 Rotate the detector to remove.

This unit can be used with the Ceiling Tile Adapter (CTA) kit (517.050.060) by using the CTA Adaptor Plate, CTA-AP (517.050.058).  
Use the knock outs for the cabling as required.

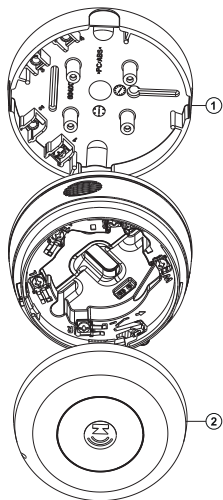


Fig. 4: Fitting the base units  
1- A-CON  
2- B-CAP

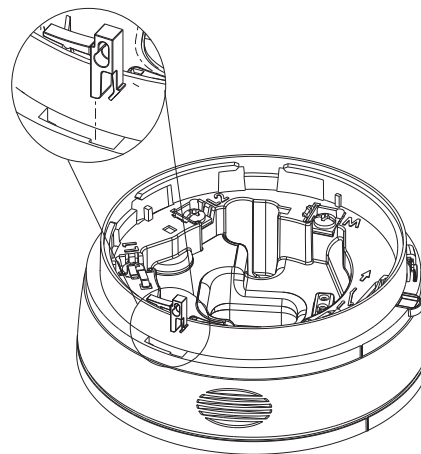



Fig. 5: Fitting the locking pin

## Approvals

	 2831 TYCO FIRE & SECURITY GMBH NEUHAUSEN AM RHEINFALL 8212 SWITZERLAND	CPR APPROVAL			EUROPEAN TYPE APPROVALS					INTERNATIONAL LISTINGS		
		EN54-3	EN54-23	EN54-17	LPCB	VDS	BOSEC	FNO	DBI	FPANZ	HKFSD	TFTF
FC442AVB	DOP-2020-4276 / 2831-CPR-F4572	•	•	•	•		•					

