

Conventional S³ Alarm Device Sounders & Strobes



The S-cubed range of alarm sounders incorporate sound, speech and strobe effects all in one range of alarm devices. The range offers all variants in the choice of 2 colours red or white with either a shallow base version sealed to IP31 or a deep base version sealed to IP65. All the low profile sounders have the option of an integral strobe which is completely loop powered.

As an aid to commissioning there is the option to use the HandiLink IR remote control to select sounder tones and adjust the volume remotely. This means physical access is not required to make this adjustment. This facility is only active when the sounders are turned on from the fire alarm panel.

Technical Specification - 1.0 Sounders & Strobes

Type	Sounder	Sounder/Strobe	Strobe Only
Sound Output at 1m	See Tone Table	See Tone Table	N/A
Strobe Flash Rate	See Tone Table	See Tone Table	Variable
Strobe Output	N/A	Equivalent to a 3w Xenon Strobe	Equivalent to a 3w Xenon Strobe
Average Current	See Tone Table	See Tone Table	6 mA
Synchronisation	Sound & Strobe synchronisation better than $\pm 30\text{mS}$ over 20 minutes with all units powered from the same circuit		
Operating Voltage Range	10.8V – 28.8V	10.8V – 28.8V	10.8V – 28.8V
Maximum Reverse Monitoring Voltage	30V/20 μA	30V/20 μA	30V/20 μA
Ingress Protection	IP65C with the Deep Base IP31C with the Shallow Base		
Approx Weight	0.3Kg	0.3Kg	0.3Kg
Operating Temperature	-10°C to 50°C	-10°C to 50°C	-10°C to 50°C
Relevant Standards (Sounder only)	EN54: Pt 3	EN54: Pt 3	N/A
IR Control Operating Distance	3m	3m	N/A
Approvals	LPCB Applied for		

- Very low power consumption means more sounders and strobes per circuit
- The strobe option is equivalent to a standard 3w xenon strobe and uses 1/20th of the power
- 32 sounder tones are available
- Voice enhanced sounders are available in the range
- 4 voice phrases and a bell sound are available as standard
- All sound and strobe signals are synchronised to better than $\pm 30\text{mS}$ over 20 minutes
- Sounders are compatible with 12V and 24V systems
- A third wire option allows the selection of 2 alternative sounds. Ideal for class change applications
- Products incorporate innovative design features for which multiple patents are pending

Order Codes

IP31 Low Profile Sounders

C3-SN-ST-RR	Sounder/Strobe Red
C3-SN-ST-WR	Sounder/Strobe White
C3-SN-R	Sounder Red
C3-SN-W	Sounder White

IP65 Low Profile Sounders

C3IP-SN-ST-RR	Sounder/Strobe Red
C3IP-SN-ST-WR	Sounder/Strobe White
C3IP-SN-R	Sounder Red
C3IP-SN-W	Sounder White

IP65 Strobe only

C2IP-ST-RR	Strobe Red Body/ Red Lens
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Remote Control

S3-CONTROL	HandiLink IR Remote Control
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Tone Table for Sounder Only and Sounder/Strobe Variants

Signal 1	Strobe	Description	SW1 Switch	Graphical representation	12V dBA @1m	With Strobe mA	Without Strobe mA	24V dBA @1m mA	With Strobe mA	Without Strobe mA	Signal 2	Strobe	Signal 3	Strobe
Tone 1	1Hz	Alternating tone 800/ 970Hz @ 2Hz - FP 1063.1 Telecoms BS 5839: Part 1			101.8	16.5	7.4	101.8	9.5	3.4	Tone 3	0.5Hz	Tone 6	1Hz
Tone 2	1Hz	Alternating tone 800/ 970Hz @ 1Hz - BS 5839: Part 1			101.7	16.5	7.3	101.7	9.5	3.4	Tone 3	0.5Hz	Tone 6	1Hz
Tone 3	1Hz	Intermittent tone 970Hz @ 1Hz LF back up alarm - BS 5839: Part 1			101.6	15.5	4.5	101.6	8.2	2.0	Tone 5	0.8Hz	Tone 6	1Hz
Tone 4	1Hz	Intermittent tone 2850Hz @ 1Hz HF back up alarm - 2nd tone BS 5839: Part 1			103.7	15.8	5.5	103.7	8.5	2.5	Tone 3	0.5Hz	Tone 6	1Hz
Tone 5	0.8Hz	Intermittent tone 970Hz 0.25s - on, 1s off - BS 5839: Part 1			101.2	12.0	2.0	101.4	6.0	1.0	Tone 2	0.5Hz	Tone 6	1Hz
Tone 6	1Hz	Continuous @ 970Hz - BS 5839: Part 1			102.0	16.5	8.0	102.1	9.8	3.7	Tone 3	0.5Hz	Tone 1	1Hz
Tone 7	0.5Hz	Slow sweep 300Hz- 1200Hz over 2s - Vds2300 Signal			99.3	13.0	7.9	99.3	7.0	3.7	Tone 3	0.5Hz	Tone 6	1Hz
Tone 8	1Hz	Fast sweep 800Hz - 970Hz @ 7Hz - BS 5839: Part 1			93.5	16.3	8.2	93.7	9.4	3.7	Tone 3	0.5Hz	Tone 6	1Hz
Tone 9	1Hz	Medium sweep 800Hz - 970Hz @ 1Hz - BS 5839: Part 1			94.1	16.5	8.7	94.3	9.5	4.0	Tone 3	0.5Hz	Tone 6	1Hz
Tone 10	1Hz	Continuous @ 2850Hz			104.4	16.5	9.7	104.7	10.2	4.4	Tone 3	0.5Hz	Tone 6	1Hz
Tone 11	1Hz	Sweep 2400 - 2850Hz @ 7Hz			100.2	16.5	11.2	100.8	10.6	5.4	Tone 12	0.5Hz	Tone 10	1Hz
Tone 12	1Hz	Sweep 2400 - 2850Hz @ 1Hz			101.9	16.5	12.0	102.7	11.5	5.8	Tone 3	0.5Hz	Tone 10	1Hz
Tone 13	0.86Hz	Slow whoop 500Hz - 1200Hz over 3s with 0.5s off			98.8	15.5	7.5	99.2	8.7	3.5	Tone 3	0.5Hz	Tone 6	1Hz
Tone 14	1Hz	Sweep 1200Hz @ 1200Hz - 500Hz @ 1Hz with 10ms silence - German DIN tone evacuate			96.6	16.2	7.3	98.1	9.5	3.5	Tone 3	0.5Hz	Tone 6	1Hz
Tone 15	1Hz	Alternating tone 2400/ 2850Hz @ 2Hz			101.7	16.5	12.0	102.5	11.8	6.2	Tone 12	0.5Hz	Tone 10	1Hz
Tone 16	1Hz	Alternating tone 554Hz for 100ms then 440Hz for 400ms - French AFNOR tone			89.3	15.8	5.2	89.6	8.7	2.5	Tone 3	0.5Hz	Tone 6	1Hz
Tone 17	1Hz	Alternating tone 440Hz / 554Hz @ 2Hz - Turn out Sweden			90.1	15.8	5.7	90.3	8.9	2.8	Tone 19	0.5Hz	Tone 18	1Hz
Tone 18	1Hz	Continuous 700Hz - All clear Sweden			95.9	16.2	7.0	96.3	9.8	3.3	Tone 1	0.5Hz	Tone 3	1Hz
Tone 19	1Hz 6s - On 12s - Off	Intermittent tone 700Hz 6s On 12s Off - Pre- vital message Sweden			95.9	6.1	4.0	96.3	5.0	2.3	Tone 17	0.5Hz	Tone 18	1Hz
Tone 20	1Hz	Intermittent tone 1000Hz @ 1Hz - Local warning Sweden			100.6	15.5	5.8	101.0	8.5	2.7	Tone 17	0.5Hz	Tone 25	1Hz
Tone 21	1Hz	Rising 1s, constant 4s, fall 1s @ 1000Hz - Industrial alarm Germany			100.9	16.0	10.0	101.2	10.0	4.0	Tone 3	0.5Hz	Tone 6	1Hz
Tone 22	1Hz 4s - On 4s - Off	Intermittent tone 700Hz 4s On , 4s Off - Industrial alarm Germany			101.4	8.7	5.7	101.9	6.4	3.0	Tone 19	0.5Hz 6s - On 12s - Off	Tone 6	1Hz
Tone 23	Sync. pulses	Emergency evacuation to ISO 8201 - ISO 8201 Tone			104.0	12.0	4.0	104.5	6.0	1.5	Tone 3	0.5Hz	Tone 6	1Hz
Tone 24	1Hz	Slow whoop 500Hz - 1000Hz over 4.5s - Evacuate Netherlands			99.6	16.0	7.2	100.2	9.5	3.4	Tone 3	0.5Hz	Tone 6	1Hz
Tone 25	1Hz	Siren (ramp up from 500Hz - 1200Hz in 3s then ramp down 1200Hz - 500Hz in 3s)			98.2	16.0	7.5	98.5	9.5	3.5	Tone 3	0.5Hz	Tone 6	1Hz
Tone 26	1Hz	Fast whoop 500Hz - 1000Hz @ 7Hz			95.8	15.8	7.0	96.0	8.7	3.3	Tone 24	0.5Hz	Tone 25	1Hz
Tone 27	Sync. pulses	US temporal tone LF			100.6	12.0	3.0	100.6	5.5	1.0	Tone 3	0.5Hz	Tone 6	1Hz
Tone 28	Sync. pulses	US temporal tone HF			99.0	11.8	2.5	99.0	5.3	0.8	Tone 4	0.5Hz	Tone 6	1Hz
Tone 29	1Hz	LF buzz 800Hz- 970Hz @ 50Hz			98.8	16.3	9.4	99.2	10.0	4.3	Tone 3	0.5Hz	Tone 6	1Hz
Tone 30	1Hz	Alternate 2500/ 3100 @ 2Hz - Security alarm			101.6	16.5	13.0	102.2	10.8	6.4	Tone 3	0.5Hz	Tone 31	1Hz
Tone 31	1Hz	Alternate 2500 / 3100 @ 4Hz			101.2	16.5	13.0	102.0	10.8	6.4	Tone 3	0.5Hz	Tone 8	1Hz
Tone 32	1Hz	Define during manufacture - default is a fast siren			98.8	16.0	7.5	99.2	9.5	3.5	Tone 3	0.5Hz	Tone 6	1Hz

The current data in the table are for Red strobe only.

Note also the nominal sound frequencies stated in the table are based on the resonance frequency of the transducer.

Conventional S³ Alarm Device Voice Enhanced Sounders

Technical Specification - 1.1 Voice Enhanced Sounders & Strobes

Type	Voice Enhanced Sounder	Voice Enhanced Sounder/ Strobe
Sound Output at 1m	See Table 3	See Table 3
Strobe Flash Rate	See Table 3	See Table 3
Strobe Output	Equivalent to a 3w Xenon Strobe	
Average Current	See Table 3	See Table 3
Synchronisation	Sound & Strobe synchronisation better than $\pm 30\text{mS}$ over 20 minutes with all units powered from the same circuit	
Message and Attention Tone Period	10 Seconds	10 Seconds
Operating Voltage Range	10.8V – 28.8V	10.8V – 28.8V
Maximum Reverse Monitoring Voltage	30V/20 μA	30V/20 μA
Ingress Protection	IP65C with the Deep Base	IP31C with the Shallow Base
Approx Weight	0.3 Kg	0.3 Kg
Operating Temperature	-10°C to 50°C	-10°C to 50°C
IR Control Operating Distance	3m	3m

Conventional Speech Sounder and Strobe

Note: Only the messages and complex tones specified in table 1 are applicable to this S-cubed product.

Table 1

Message No.	Speech Message
M1	Attention please this is an emergency please leave the building by the nearest available exit. (female voice)
M2	An incident has been reported in this building please await further instructions. (female voice)
M3	This is a test message no action is required. (female voice)
M4	This is a fire alarm! please leave the building immediately by the nearest available exit. (male voice)

Complex Tone No.	Description of Tone
CT0	Alarm Bell (equivalent to 8" Solenoid Bell) 12V 105dBA @ 1m with strobe 14.2mA (without strobe 4.5mA) 24V 105.5dBA @ 1m with strobe 12mA (without strobe 4.5mA) Standard messages and complex tones (Voice IC 2202- 001)

Table 2

Tone	Description	Graphical representation
Tone 1	Alternating tone 800/ 970Hz @ 2Hz - FP 1063.1 Telecoms	
Tone 2	Intermittent tone 970Hz @ 1Hz LF back up alarm - BS 5839: Part 1	
Tone 3	Intermittent tone 970Hz 0.25s on, 1s off - BS 5839: Part 1	
Tone 4	Continuous @ 970Hz - BS 5839: Part 1	
Tone 5	Fast sweep 800Hz - 970Hz @ 7Hz - BS 5839: Part 1	
Tone 6	Medium sweep 800Hz - 970Hz @ 1Hz - BS 5839: Part 1	
Tone 7	Sweep 1200Hz @ 1200Hz - 500Hz @ 1Hz with 10ms silence - German DIN tone evacuate	
Tone 8	Alternating tone 440Hz / 554Hz @ 2Hz - Turn out Sweden	
Tone 9	Intermittent tone 1000Hz @ 1Hz - Local warning Sweden	
Tone 10	Intermittent Tone 700Hz 4s On , 4s Off - Industrial alarm Germany	
Tone 11	Fast whoop 500Hz - 1000Hz @ 7Hz	
Tone 12	US temporal tone LF	
Tone 13	US temporal tone HF	
Tone 14	Define during manufacture - default is a fast siren	

Note: The nominal sound frequencies stated in the table are based on the resonance frequency of the transducer.

Order Codes

IP31 Low Profile Sounders

C3-VO-R	Voice Sounder Red
C3-VO-W	Voice Sounder White
C3-VO-ST-RR	Voice Sounder/Strobe Red
C3-VO-ST-WR	Voice Sounder/Strobe White

IP65 Low Profile Sounders

C3IP-VO-R	Voice Sounder Red
C3IP-VO-W	Voice Sounder White
C3IP-VO-ST-RR	Voice Sounder/Strobe Red
C3IP-VO-ST-WR	Voice Sounder/Strobe White

Remote Control

S3-CONTROL	HandiLink IR Remote Control
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How to select a speech message and attention tone

1. Select the required speech message and tone from the signal 1 column of table 3 referring to table 1 and 2 for message and tone descriptions.
2. If the third wire option is used the two alternative messages and tones for your first selection are shown on the right hand side of table 3.
3. After making a selection set the switch SW1 as shown in the SW1 column of table 3.



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Table 3 - Tone/Voice table for Voice and Voice/Strobe Variants

				Dicibal (dBA) and current (mA) values						Intermittent 1S On and 1S Off					
Signal 1 Message	Strobe	Attention Tone	SW1 Switch	12V dBA @1m	With Strobe mA	Without Strobe mA	24V dBA @1m	With Strobe mA	Without Strobe mA	Signal 2 Message	Strobe	Attention Tone	Signal 3 Message	Strobe	Attention Tone
M1	1Hz	Tone 1		101.8	16.5	7.4	101.8	9.5	3.4	M2	0.5Hz	Tone 2	M3	1Hz	Tone 4
M1	1Hz	Tone 6		94.1	16.5	8.7	94.3	9.5	4.0	M2	0.5Hz	Tone 3	M3	1Hz	Tone 4
M1	1Hz	Tone 11		95.8	15.8	7.0	96.0	8.7	3.3	M2	0.5Hz	Tone 9	M3	1Hz	Tone 4
M1	1Hz	Tone 5		93.5	16.3	8.2	93.7	9.4	3.7	M2	0.5Hz	Tone 3	M3	1Hz	Tone 4
M1	1Hz	Tone 8		90.1	15.8	5.7	90.3	8.9	2.8	M2	0.5Hz	Tone 9	M3	1Hz	Tone 4
M1	1Hz	Tone 7		96.6	16.2	7.3	98.1	9.5	3.5	M2	0.5Hz	Tone 10	M3	1Hz	Tone 4
M1	1Hz	Tone 12		100.6	12.0	3.0	100.6	5.5	1.0	M2	0.5Hz	Tone 13	M3	1Hz	Tone 4
M1	1Hz	Tone 14		98.8	16.0	7.5	99.2	9.5	3.5	M2	0.5Hz	Tone 14	M3	1Hz	Tone 14
M4	1Hz	Tone 1		101.8	16.5	7.4	101.8	9.5	3.4	M5	0.5Hz	Tone 2	M6	1Hz	Tone 4
M4	1Hz	Tone 6		94.1	16.5	8.7	94.3	9.5	4.0	M5	0.5Hz	Tone 3	M6	1Hz	Tone 4
M4	1Hz	Tone 11		95.8	15.8	7.0	96.0	8.7	3.3	M5	0.5Hz	Tone 9	M6	1Hz	Tone 4
M4	1Hz	Tone 5		93.5	16.3	8.2	93.7	9.4	3.7	M5	0.5Hz	Tone 3	M6	1Hz	Tone 4
M4	1Hz	Tone 8		90.1	15.8	5.7	90.3	8.9	2.8	M5	0.5Hz	Tone 9	M6	1Hz	Tone 4
M4	1Hz	Tone 7		96.6	16.2	7.3	98.1	9.5	3.5	M5	0.5Hz	Tone 10	M6	1Hz	Tone 4
M4	1Hz	Tone 12		100.6	12.0	3.0	100.6	5.5	1.0	M5	0.5Hz	Tone 13	M6	1Hz	Tone 4
M4	1Hz	Tone 14		98.8	16.0	7.5	99.2	9.5	3.5	M2	0.5Hz	Tone 14	M3	1Hz	Tone 14
M1	1Hz	CT0		Refer to decibel (dBA) and current (mA) values stated in table 1. Note: Only the complex tones (CTn) and speech messages (Mn) specified in table 1 are valid. The highlighted row in this table show the factory default setting of the S-cubed unit.						M2	0.5Hz	CT0~	M3	1Hz	CT0
M1	1Hz	CT1								M2	0.5Hz	CT1~	M3	1Hz	CT1
M1	1Hz	CT2								M2	0.5Hz	CT2~	M3	1Hz	CT2
M1	1Hz	CT3								M2	0.5Hz	CT3~	M3	1Hz	CT3
M1	1Hz	CT4								M2	0.5Hz	CT4~	M3	1Hz	CT4
M1	1Hz	CT5								M2	0.5Hz	CT5~	M3	1Hz	CT5
M1	1Hz	CT6								M2	0.5Hz	CT6~	M3	1Hz	CT6
M1	1Hz	CT7								M2	0.5Hz	CT7~	M3	1Hz	CT7
-	1Hz	CT0		-	0.5Hz	CT0~	-	1Hz	CT0						
-	1Hz	CT1		-	0.5Hz	CT1~	-	1Hz	CT1						
-	1Hz	CT2		-	0.5Hz	CT2~	-	1Hz	CT2						
-	1Hz	CT3		-	0.5Hz	CT3~	-	1Hz	CT3						
-	1Hz	CT4		-	0.5Hz	CT4~	-	1Hz	CT4						
-	1Hz	CT5		-	0.5Hz	CT5~	-	1Hz	CT5						
-	1Hz	CT6		-	0.5Hz	CT6~	-	1Hz	CT6						
-	1Hz	CT7		-	0.5Hz	CT7~	-	1Hz	CT7						

Attention tone followed by speech message

Tone only