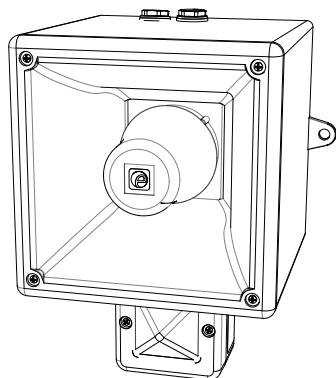


# INSTRUCTION & SERVICE MANUAL

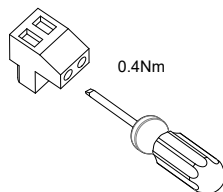
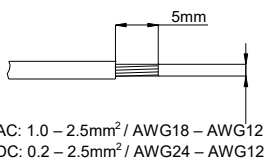
## AL121H AlertAlight Combined Sounder LED

- -40°C to +66°C (-40°F to 151°F)
- Type 4 / 4X / 3R / 13, IP66
- 2.7Kg (5.94lb)
- CE, UKCA
- All units UL Listed



Unit Type Code	Nominal Voltage	Voltage Range	Nominal Beacon Current*	Nominal Sounder Current* P2 / P3	Nominal SPL P2 / P3	Max SPL P2 / P3	Average SPL P2 / P3
AL121HDC024	#12 Vdc	11.5-14Vdc	79.5mA	376mA / 440mA	116.9dB(A) / 120.2dB(A) Tone 44 @ 1m	120.7dB(A) / 123.4dB(A) Tone 4 @ 1m	115.3dB(A) / 118.1dB(A) All Tones @ 1m
	24 Vdc	16-33 Vdc	87mA	430mA / 930mA			
AL121HDC048	48 Vdc	48-54 Vdc	60mA	223mA / 453mA			
AL121HAC230	115 Vac	100-240 Vac 50/60Hz	34mA	173mA / 340mA			
	230 Vac	100-240 Vac 50/60Hz	19mA	105mA / 212mA			

\*Nominal current at nominal voltage; #Factory Default setting 24Vdc, beacon customer settable to 12Vdc



Attention: Installation must be carried out by an electrician in compliance with the latest codes and regulations.

Attention: L'installation doit être effectuée par un électricien conformément aux derniers codes et réglementations.

Achtung: Die Installation muss von einem Elektriker gemäß den neuesten Vorschriften und Bestimmungen durchgeführt werden.

Attenzione: L'installazione deve essere eseguita da un elettricista in conformità con i codici e le normative più recenti.

Atención: La instalación debe ser realizada por un electricista de acuerdo con los últimos códigos y regulaciones.

Atenção: A instalação deve ser realizada por um electricista de acordo com os códigos e regulamentos mais recentes.

Внимание: установка должна выполняться электриком в соответствии с последними нормами и правилами.

Attention: Disconnect from power source before installation or service to prevent electric shock

Attention: Débranchez-le de la source d'alimentation avant l'installation ou l'entretien pour éviter tout choc électrique.

Achtung: Vor Installation oder Wartung von der Stromquelle trennen, um einen Stromschlag zu vermeiden.

Attenzione: scollegare dall'alimentazione prima dell'installazione o dell'assistenza per evitare scosse elettriche.

Atención: desconéctelo de la fuente de alimentación antes de la instalación o el servicio para evitar descargas eléctricas.

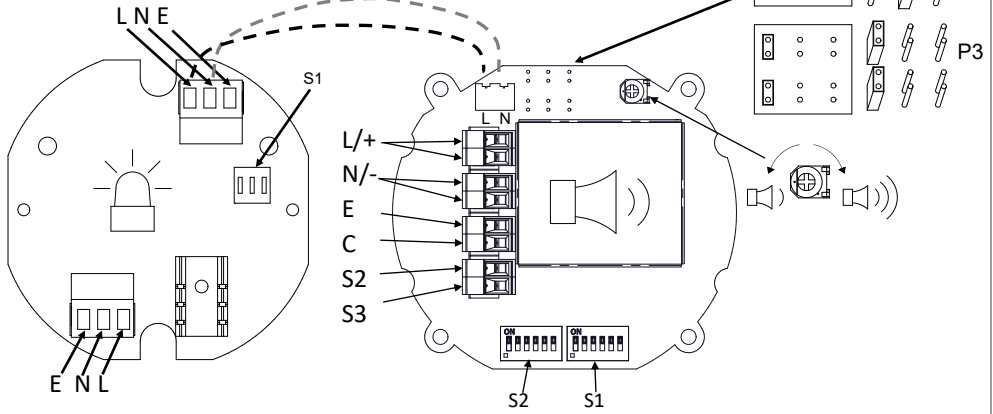
Atenção: Desconecte da fonte de alimentação antes da instalação ou serviço para evitar choque elétrico

Внимание: отключите от источника питания перед установкой или обслуживанием, чтобы предотвратить поражение электрическим током.



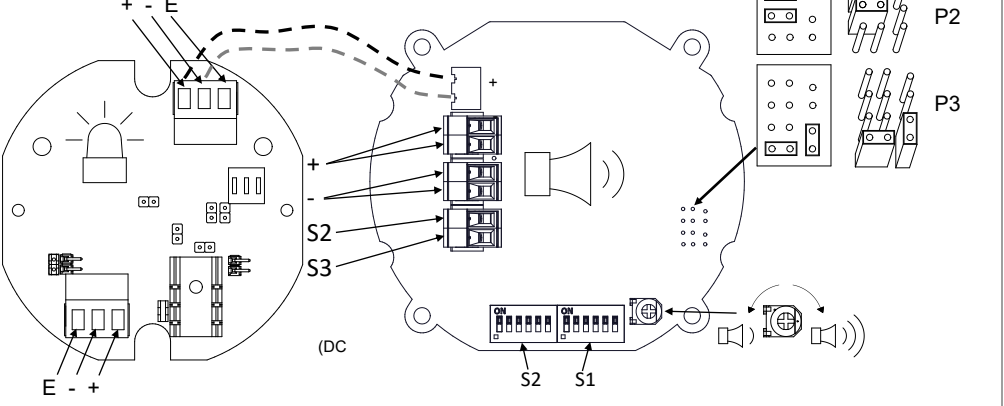
AC

See D221-06-305



DC

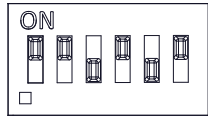
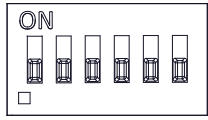
See D221-06-301



(AC & DC, See D221-95-001)

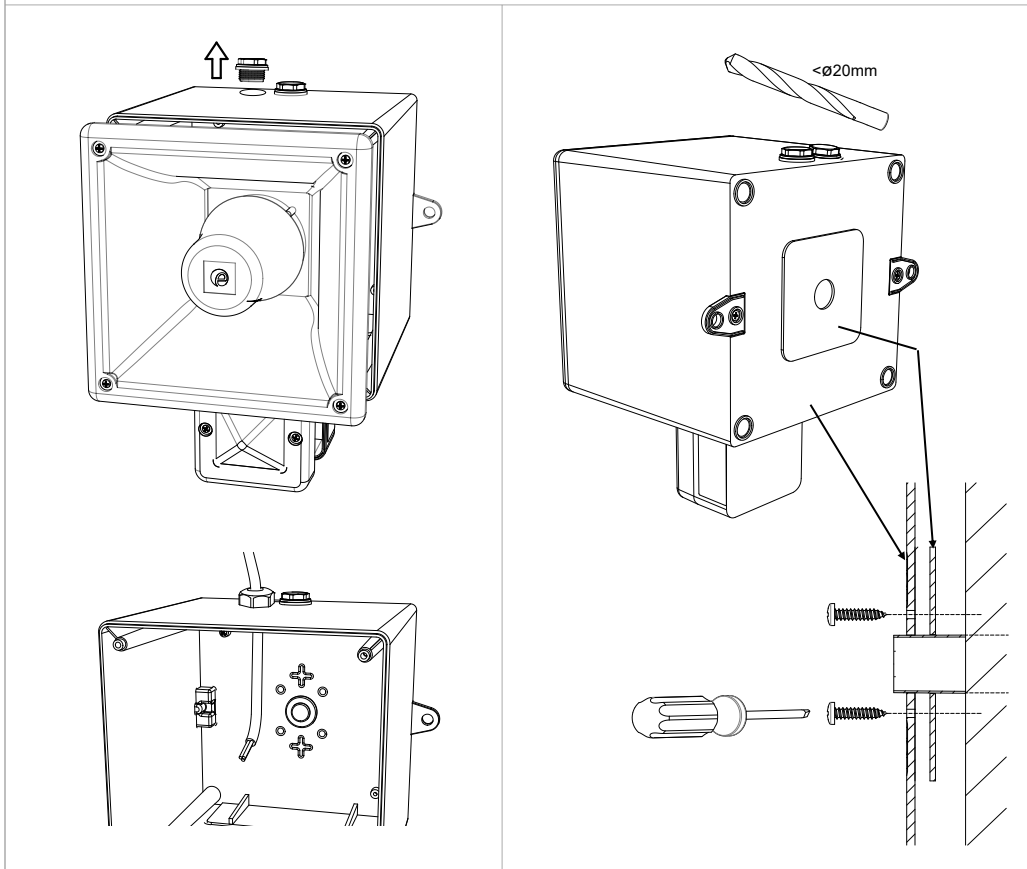
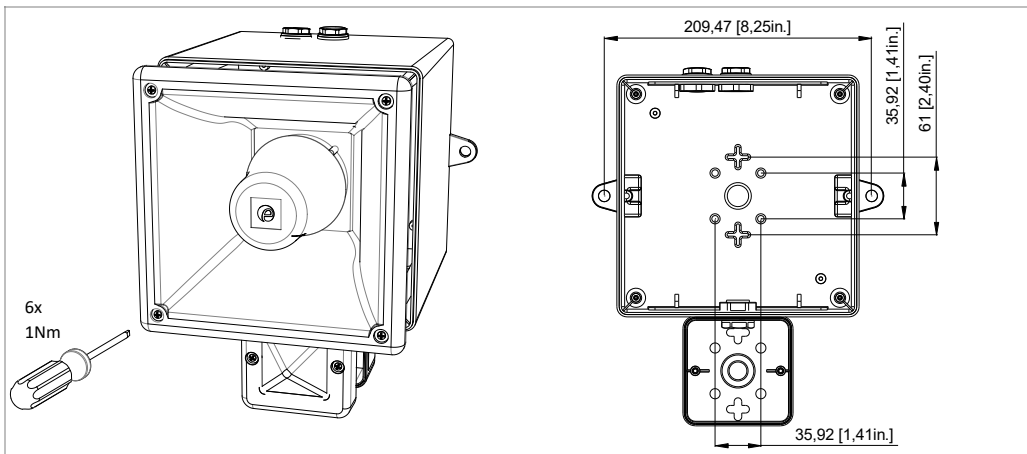
Default = S2 - Tone 1

Default = S1 - Tone 44



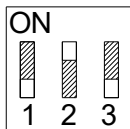
(ON = 1, OFF = 0)

INSTRUCTION & SERVICE MANUAL  
AL121H AlertAlight Combined Sounder LED



### S1 - LED Flash Mode Settings (AC & DC)

The Flash Mode Dip Switch can be changed to set the desired flash pattern



Flash Mode DIP Switch – Shown with 1-OFF, 2-ON, 3-OFF (0 1 0). This denotes Flash mode 1Hz. For further flash modes refer to table:

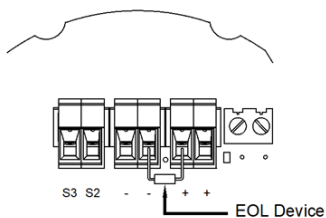
Switch Setting	Flash Mode
0 0 0	Steady on
1 0 0	Blinking
0 1 0	Flashing 1Hz*
1 1 0	Flashing 1.5Hz*
0 0 1	Flashing - Double Strike
1 0 1	Flashing - Triple Strike
0 1 1	Flashing 2Hz*
1 1 1	Flashing - Temporal

- All models are approved for use as Audible Signal and Visual Appliance for use as General Signaling: UL464A & CSA C22.2 No 205-17
- Type 4 / 4X / 3R / 13, IP66
- 40°C to +66°C / -40°C to +151°F

General Signaling Canada:

AL121NHDC: -40°C to +55°C / -40°F to +131°F  
 AL121NHAC: -40°C to +40°C / -40°F to +104°F

- To maintain Ingress Protection, cable entries must be fitted with suitably rated cable glands or stopping plugs
- EOL Monitoring (DC Only): End of Line Devices may be fitted between the +ve & -ve terminals of the PCBA (See diagram below). Please ensure that the device legs meet the wire size range stated for the connection terminals and are fitted correctly in order to avoid a short. Refer to the compatible control panel specification for EOL device values and ratings
- All DC Units have a blocked diode fitted in their supply input lines which allows reverse polarity monitoring.
- Note that the maximum forward polarity monitoring voltage is 6V. A monitoring voltage greater than 6V may activate the alarm horn sounder and the 2nd, 3rd or 4th stages.



Model	Nominal Voltage	Voltage Range	Nominal Operating Current*		Max Operating RMS#	
			Beacon	Sounder P2 / P3	Beacon	Sounder P2 / P3
AL121HDC024	12V dc	11.5-14Vdc	79.5mA	376mA / 440mA	168mA	430mA / 930mA
	24V dc	16-33 Vdc (Regulated)	87mA	430mA / 930mA	183mA	
AL121HDC048	48V dc	48-54 Vdc	60mA	223mA / 453mA	115mA	
AL121HAC230	115 Vac	100-240 Vac 50/60Hz	34mA	173mA / 340mA	166mA	181mA / 383mA
	230 Vac		19mA	105mA / 212mA		

\*Nominal Voltage, 1Hz Flash Pattern / Tone 12; #Worst-case input voltage and worst case flash pattern

Stage 1 Set DIP SW 1 Tone No.	Tone Description	Tone Visual	Stage 1 & 2 DIP SW 1/2 Settings 1 2 3 4 5 6	Stage 3 Set DIP SW 1 (S3)	Stage 4 Set DIP SW 1 (S2 + S3)
1	1000Hz PFEER Toxic Gas		0 0 0 0 0	2	44
2	1200/500Hz @ 1Hz DIN /PFEER P.T.A.P.		1 0 0 0 0	3	44
3	1000Hz @ 0.5Hz(1s on, 1soff) PFEER Gen. Alarm		0 1 0 0 0 0	2	44
4	1.4KHz-1.6KHz 1s, 1.6KHz-1.4KHz 0.5s NF C 48-265		1 1 0 0 0 0	24	1
5	544Hz(100mS)/440Hz (400mS) NF S 32-001		0 0 1 0 0 0	19	1
6	1500/500Hz - (0.5s on , 0.5s off) x3 + 1s gap AS4428		1 0 1 0 0 0	44	1
7	500-1500Hz Sweeping 2 sec on 1 sec off AS4428		0 1 1 0 0 0	44	1
8	500/1200Hz @ 0.26Hz (3.3son, 0.5s off) Netherlands - NEN 2575		1 1 1 0 0 0	24	35
9	1000Hz (1s on, 1s off)x7 + (7s on, 1s off) IMO Code 1a		0 0 0 1 0 0	34	1
10	1000Hz (1s on, 1s off)x7 + (7s on, 1s off) IMO Code 1a		1 0 0 1 0 0	34	1
11	420Hz(0.5s on, 0.5s off)x3 + 1s gap ISO 8201 Temporal Pattern		0 1 0 1 0 0	1	8
12	1000Hz(0.5s on, 0.5s off)x3 + 1s gap ISO 8201 Temporal Pattern		1 1 0 1 0 0	1	8
13	422/775Hz - (0.85 on, 0.5 off) x3 + 1s gap NFPA - Temporal Coded		0 0 1 1 0 0	1	8
14	1000/2000Hz @ 1Hz Singapore		1 0 1 1 0 0	3	35
15	300Hz Continuous (f=300)		0 1 1 1 0 0	24	1
16	440Hz Continuous (f=440)		1 1 1 1 0 0	24	1
17	470Hz Continuous (f=470)		0 0 0 0 1 0	24	8
18	500Hz Continuous IMO code 2 (Low) (f=500)		1 0 0 0 1 0	24	8
19	554Hz Continuous (f=554)		0 1 0 0 1 0	24	8
20	660Hz Continuous (f=660)		1 1 0 0 1 0	24	35
21	800Hz IMO code 2 (High) (f=800)		0 0 1 0 1 0	24	35
22	1200Hz Continuous (f=1200)		1 0 1 0 1 0	24	35
23	2000Hz Continuous (f=2000)		0 1 1 0 1 0	3	35
24	2400Hz Continuous (f=2400)		1 1 1 0 1 0	20	35
25	440Hz @0.83Hz (50 cycles/minute) Intermittent (f=440, a=0.6, b=0.6)		0 0 0 1 1 0	44	8
26	470Hz @0.9Hz - 1.1s Intermittent (f=470, a=0.55, b=0.55)		1 0 0 1 1 0	44	8
27	470Hz @5Hz - (5 cycles/second) Intermittent (f=470, a=0.1, b=0.1)		0 1 0 1 1 0	44	8
28	544Hz @ 1.14Hz - 0.875s Intermittent (f=470, a=0.43, b=0.44)		1 1 0 1 1 0	24	8
29	655Hz @ 0.875Hz Intermittent (f=655, a=0.57, b=0.57)		0 0 1 1 1 0	24	8
30	660Hz @0.28Hz - 1.8sec on, 1.8sec off Intermittent (f=660, a=1.8, b=1.8)		1 0 1 1 1 0	24	8
31	660Hz @3.34Hz - 150mS on, 150mS off Intermittent (f=660, a=0.15, b=0.15)		0 1 1 1 1 0	24	8
32	745Hz @ 1Hz Intermittent (f=745, a=0.5, b=0.5)		1 1 1 1 1 0	24	8
33	800Hz - 0.25sec on, 1 sec off Intermittent (f=800, a=0.25, b=1)		0 0 0 0 0 1	24	8
34	800Hz @ 2Hz IMO code 3.a (High) Intermittent (f=800, a=0.25, b=0.25)		1 0 0 0 0 1	24	19
35	1000Hz @ 1Hz Intermittent (f=1000, a=0.5, b=0.5)		0 1 0 0 0 1	24	19
36	2400Hz @ 1Hz Intermittent (f=2400, a=0.5, b=0.5)		1 1 0 0 0 1	24	19
37	2900Hz @ 5Hz Intermittent (f=2900, a=0.1, b=0.1)		0 0 1 0 0 1	24	19
38	363/518Hz @ 1Hz Alternating (f=363, f1=518, a=0.1)		1 0 1 0 0 1	8	19
39	450/500Hz @ 2Hz Alternating (f=450, f1=500, a=0.25)		0 1 1 0 0 1	8	19
40	554/440Hz @ 1Hz Alternating (f=440, f1=554, a=0.5)		1 1 1 0 0 1	24	19
41	554/440Hz @ 0.625Hz Alternating (f=440, f1=554, a=0.8)		0 0 0 1 0 1	8	19
42	561/760Hz @0.83Hz (50 cycles/minute) Alternating (f=561, f1=760, a=0.6)		1 0 0 1 0 1	8	19
43	780/600Hz @ 0.96Hz Alternating (f=600, f1=780, a=0.52)		0 1 0 1 0 1	8	19
44	800/1000Hz @ 2Hz Alternating (f=800, f1=1000, a=0.25)		1 1 0 1 0 1	24	19
45	970/800Hz @ 2Hz Alternating (f=800, f1=970, a=0.25)		0 0 1 1 0 1	8	19
46	800/1000Hz @ 0.875Hz Alternating (f=800, f1=1000, a=0.57)		1 0 1 1 0 1	24	19
47	2400/2900Hz @ 2Hz Alternating (f=2400, f1=2900, a=0.25)		0 1 1 1 0 1	24	19
48	500/1200Hz @ 0.3Hz Sweeping (f=500, f1=1200, a=3.34)		1 1 1 1 0 1	24	12
49	560/1055Hz @ 0.18Hz Sweeping (f=560, f1=1055, a=5.47)		0 0 0 0 1 1	24	12
50	560/1055Hz @ 3.3Hz Sweeping (f=560, f1=1055, a=0.3)		1 0 0 0 1 1	24	12
51	600/1250Hz @ 0.125Hz Sweeping (f=600, f1=1250, a=8)		0 1 0 0 1 1	24	12
52	660/1200Hz @ 1Hz Sweeping (f=660, f1=1200, a=1)		1 1 0 0 1 1	24	12
53	800/1000Hz @ 1Hz Sweeping (f=800, f1=1000, a=1)		0 0 1 0 1 1	24	12
54	800/1000Hz @ 7Hz Sweeping (f=800, f1=1000, a=0.14)		1 0 1 0 1 1	24	12
55	800/1000Hz @ 50Hz Sweeping (f=800, f1=1000, a=0.02)		0 1 1 0 1 1	24	12
56	2400/2900Hz @ 7Hz Sweeping (f=2400, f1=2900, a=0.14)		1 1 1 0 1 1	24	12
57	2400/2900Hz @ 1Hz Sweeping (f=2400, f1=2900, a=1)		0 0 0 1 1 1	24	12
58	2400/2900Hz @ 50Hz Sweeping (f=2400, f1=2900, a=0.02)		1 0 0 1 1 1	24	12
59	2500/3000Hz @ 2Hz Sweeping (f=2500, f1=3000, a=0.5)		0 1 0 1 1 1	24	12
60	2500/3000Hz @ 7.7Hz Sweeping (f=2500, f1=3000, a=0.13)		1 1 0 1 1 1	24	12
61	800Hz Motor Siren (f=800, a=1.6)		0 0 1 1 1 1	24	12
62	1200Hz Motor Siren (f=1200, a=2)		1 0 1 1 1 1	24	12
63	2400Hz Motor Siren (f=2400, a=1.7)		0 1 1 1 1 1	24	12
64	Simulated Bell		1 1 1 1 1 1	21	12

# FIRE INSTRUCTION & SERVICE MANUAL

## AL121H Range AlertAight Combined Sounder LED Beacons

### UL464 / CAN/ULC-S525 & UL1638 / CAN/ULC-S526

#### Model: AL121HDC



Attention: Installation must be carried out by an electrician in compliance with the National Electrical Code, NFPA 70, and the National Fire Alarm Signaling Code, NFPA 72 or CSA 22.1 Canadian Electrical Code, Part I, Safety Standard for Electrical Installations, Section 32. / L'installation doit exclusivement être réalisée par du personnel qualifié, conformément au code national d'électricité américain, NFPA 70, et le code national d'alarme incendie et de signalisation NFPA 72 ou CSA 22.1 Code canadien de l'électricité, première partie, norme de sécurité relative aux installations électriques, Section 32



Attention: Disconnect from power source before installation or service to prevent electric shock / Débranchez-le de la source d'alimentation avant l'installation ou l'entretien pour éviter tout choc électrique.



Attention: Do not paint / Ne pas Peinturer

- -40°C to +66°C / -40°F to +151°F
- Units can be mounted using the 2-off ø9mm holes in the mounting lugs or through the back of the housing using the supplied gasket seal.
- AL121HDC024 is approved for use as an Audible & Visual signal appliance for fire alarm use – Private Mode. (UL464 & CAN/ULC-S525 & UL1638 & CAN/ULC-S526).
- AL121HDC024 produces a minimum sound pressure level of P2: US: 93.67dB(A); CA: 101.2dB(A) / P3: US: 94.33dB(A); CA: 102.4dB(A) at 10 feet (figures @ worst case 11.5Vdc).
- AL121HDC024 produces a minimum sound pressure level of P2: US: 97.59dB(A); CA: 105.4dB(A) / P3: US: 100.63dB(A); CA: 107.5dB(A) at 10 feet (@24Vdc)
- For Fire Alarm applications, the Sounder Volume must be at the highest setting, (see volume control section). For fire alarm use, Tone 12 as shown below must be selected:

Stage 1 Set DIP SW 1 Tone No.	Tone Description	Tone Visual	Stage 1 & 2 DIP SW 1/2 Settings 1 2 3 4 5 6	Stage 3 Set DIP SW 1 (S3)	Stage 4 Set DIP SW 1 (S2 + S3)
12	1000Hz(0.5s on, 0.5s off)x3 + 1s gap ISO 8201 Temporal Pattern		1 1 0 1 0 0	1	8

- For private mode fire alarm use, the beacons must only be fitted with clear plastic lens covers and must be set to one of the certified flash patterns of 1Hz, 1.5Hz or 2Hz. Flash Pulse 196ms.
- For light output ratings see below:

#### On-axis light output rating per UL1638

Model	Intensity (cd) at 1Hz flash rate	Intensity (cd) at 1.5Hz flash rate	Intensity (cd) at 2Hz flash rate
AL121HDC024 (12Vdc Mode)	5.9	5.97	6.35
AL121HDC024 (24Vdc Mode)	11.65	12.32	12.38

- Connection Terminals: Pluggable  
AC: 1.0 - 2.5mm<sup>2</sup> / AWG18 - AWG12  
DC: 0.2 - 2.5mm<sup>2</sup> / AWG24 - AWG12
- Terminal Tightening torque 0.4Nm
- To maintain Ingress Protection, cable entries must be fitted with suitably rated cable glands or stopping plugs
- Units can be located indoor or outdoor wet use, wall or ceiling mounted and there are no limitations on orientation
- Factory finishes are not intended to be modified

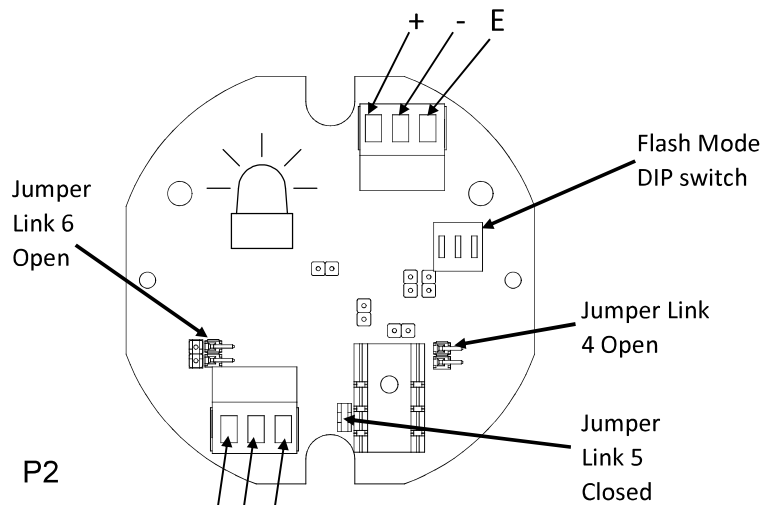
#### Surge current ratings for use in fire alarm systems

Model	Nominal Voltage	Voltage Range	Flash Rate	Initial Peak (mA)		Initial RMS (mA)	
				Beacon	Sounder	Beacon	Sounder
AL121HDC024	12Vdc	10 to 14Vdc	1 Hz	202	P2: 1164mA 1164mA / P3: 1829mA	172	P2: 286mA / P3: 554mA
			1.5Hz	216		172	
			2Hz	224		172	
	24Vdc	16 to 33Vdc (Regulated)	1 Hz	950		204.3	
			1.5Hz	968.5		206.7	
			2Hz	969		205.2	

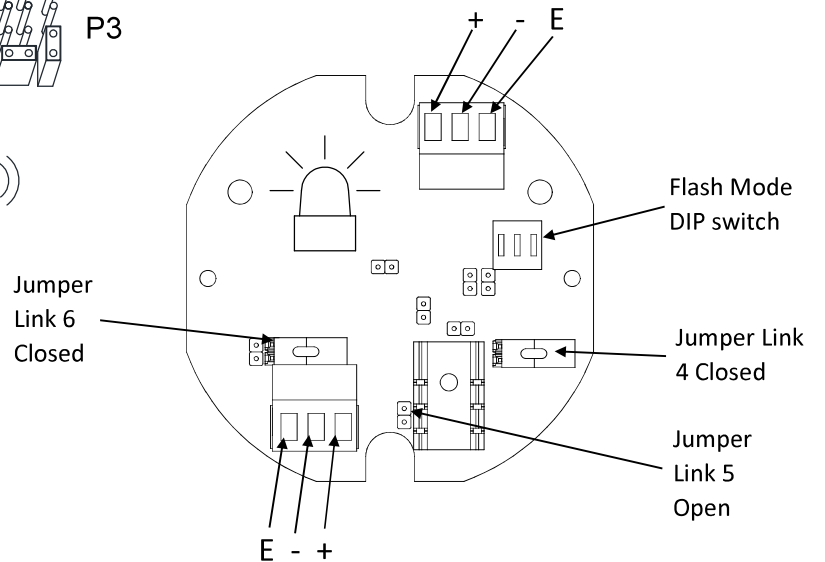
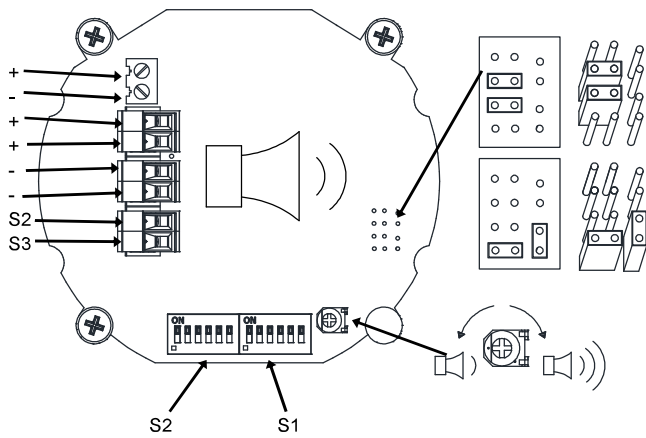
AL121HDC024 Sounder Directional Characteristics for Canadian Fire CAN/ULC-S525 at 10 feet

Horizontal Axis				Vertical Axis			
Angle	OSPL	Angle	OSPL	Angle	OSPL	Angle	OSPL
Ref. 90°	107.8 dB(A)	Ref. 90°	107.8 dB(A)	Ref. 90°	107.6 dB(A)	Ref. 90°	107.6 dB(A)
143°	-3 dB(A)	35°	-3 dB(A)	144.5°	-3 dB(A)	36.5°	-3 dB(A)
152°	-6 dB(A)	25°	-6 dB(A)	151°	-6 dB(A)	27°	-6 dB(A)
180°	97.8 dB(A)	0°	95.8 dB(A)	180°	96.8 dB(A)	0°	95.9 dB(A)

AL121HDC024 Beacon PCBA (24VDC Mode – Default Setting)



AL121HDC024 Sounder PCBA



AL121HDC024 Beacon PCBA (12VDC Mode – Customer to Set)

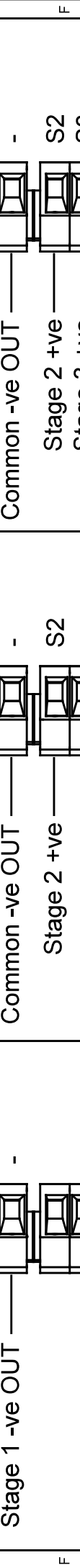
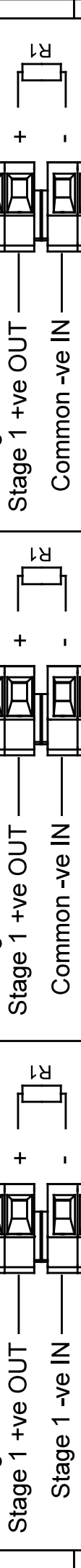
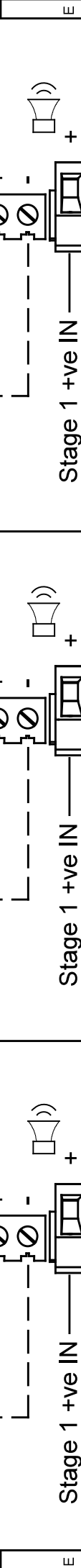
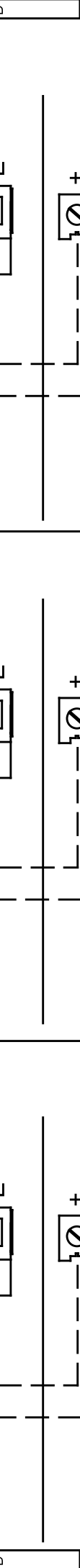
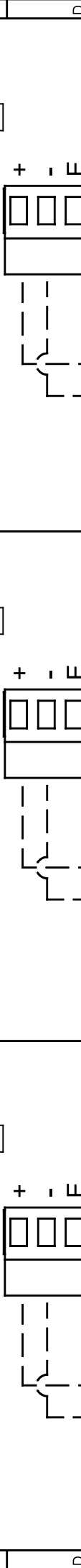
Jumper Setting	Jumper Link 4	Jumper Link 5	Jumper Link 6
24VDC Mode (Default)	Open	Closed	Open
12VDC Mode (Customer Set)	Closed	Open	Closed

1	2	3	4	5	6	7	8	9	10
<b>WIRING LINKING BEACON &amp; SOUNDER</b> FACTORY FITTED		<b>OPTIONAL LINE MONITORING RESISTOR, CUSTOMER SUPPLIED.</b> RECOMMENDED MINIMUM VALUES: 14V MAX SYSTEM = 120Ω MIN, 2W MIN OR 1KΩ MIN, 0.5W MIN 28V MAX SYSTEM = 470Ω MIN, 2W MIN OR 2.4KΩ MIN, 0.5W MIN		<b>ISSUE MOD No. REASON - INITIAL - DATE</b> A		<b>INTRODUCTION</b> RSR - 16/03/2021			

**Linked Sounder & Beacon Activation (Default)**

<b>Single Stage Configuration</b>	<b>Config.: 1a</b>	<b>Two Stage Configuration</b>	<b>Config.: 1b</b>	<b>Three/Four Stage Configuration</b>	<b>Config.: 1c</b>
Line Monitoring Set to positive switching (default)	Common Negative Set to positive switching (default)	Common Negative Set to positive switching (default)	Common Negative Set to positive switching (default)	Common Negative Set to positive switching (default)	Common Negative Set to positive switching (default)

Stage 1: Apply Power to Stage 1 +ve & Stage 1 -ve  
 Stage 1: Apply Power to Stage 1 +ve & Common -ve  
 Stage 2: Apply Power to Stage 2 +ve & Common -ve  
 Stage 3: Apply Power to Stage 3 +ve & Common -ve  
 Stage 4: Apply Power to Stage 2 +ve, Stage 3 +ve & Common -ve



<b>DRAWING TO BS8888:2000</b> GEOMETRIC TOLERANCES TO ISO1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS	<b>DRAWN</b> R.S.RAIT	<b>DATE</b> 16/03/2021	<b>SURFACE FINISH</b> MATERIAL	<b>WEIGHT (kg)</b>
<b>CHECKED</b> B.ISARD	<b>DATE</b> 16/03/2021	<b>ALTERNATIVE MATERIAL</b>		
<b>APPROVED</b> R.N.POTTS	<b>DATE</b> 16/03/2021			

<b>STANDARDS</b> ALERTALARM RANGE	EUROPEAN SAFETY SYSTEMS LTD WARRING SIGNALS MANSELL ROAD LONDON W3 7QH WWW.E2S.COM	<b>ALL DIMENSIONS IN MM</b> IF IN DOUBT, ASK - DO NOT SCALE	
		<b>TITLE AL112NH &amp; AL121H DC COMBINED</b> <b>SOUNDER &amp; LED WIRING DIAGRAMS</b>	
<b>SCALE</b> NTS 1 OF 6		<b>SHEET</b> 1 OF 6	<b>DRAWING NUMBER</b> D221-06-251



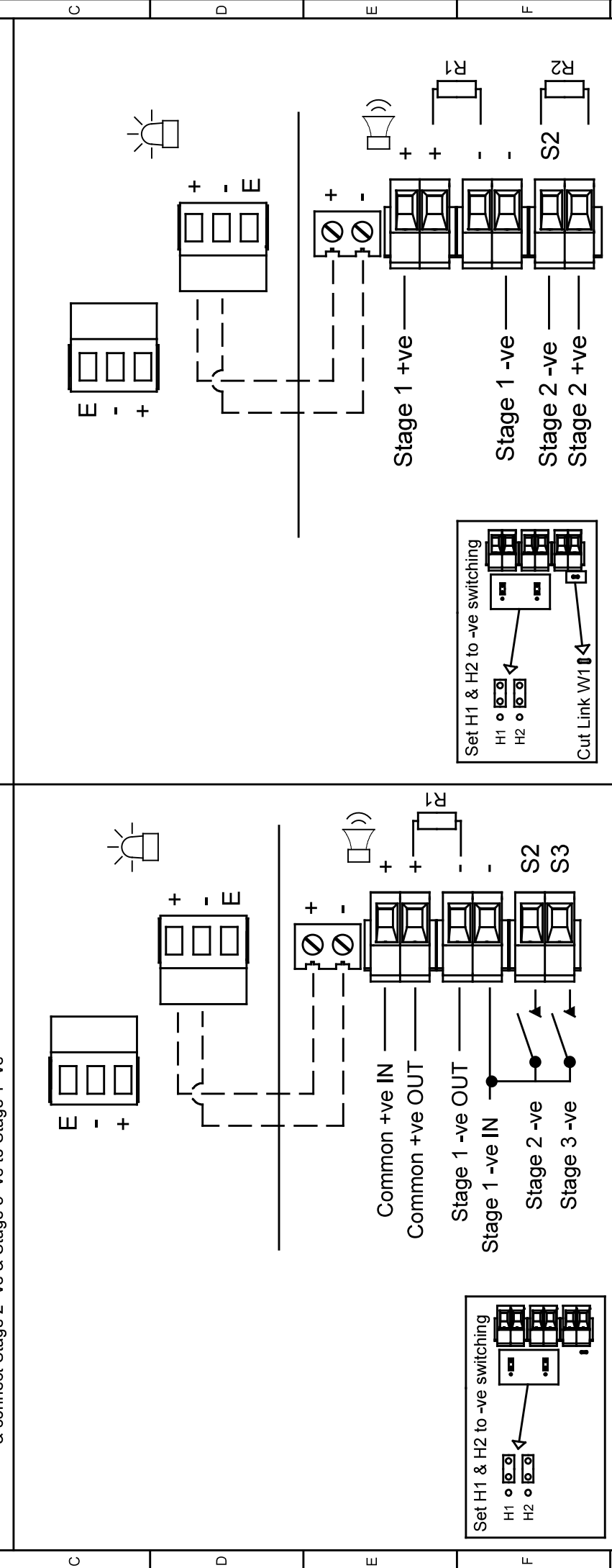
**Linked Sounder & Beacon Activation (Default)**

**Three/Four Stages. Voltage Free 2nd, 3rd & 4th Stage Activation Configuration** Config.: 2

Common Positive

Customer Set H1 & H2 to Negative Switching (See Below)

Stage 1: Apply Power to Common +ve & Stage 1 -ve  
 Stage 2: Apply Power to Common +ve & Stage 1 -ve & connect Stage 2 -ve to Stage 1 -ve  
 Stage 3: Apply Power to Common +ve & Stage 1 -ve & connect Stage 3 -ve to Stage 1 -ve  
 Stage 4: Apply Power to Common +ve & Stage 1 -ve & connect Stage 2 -ve & Stage 3 -ve to Stage 1 -ve

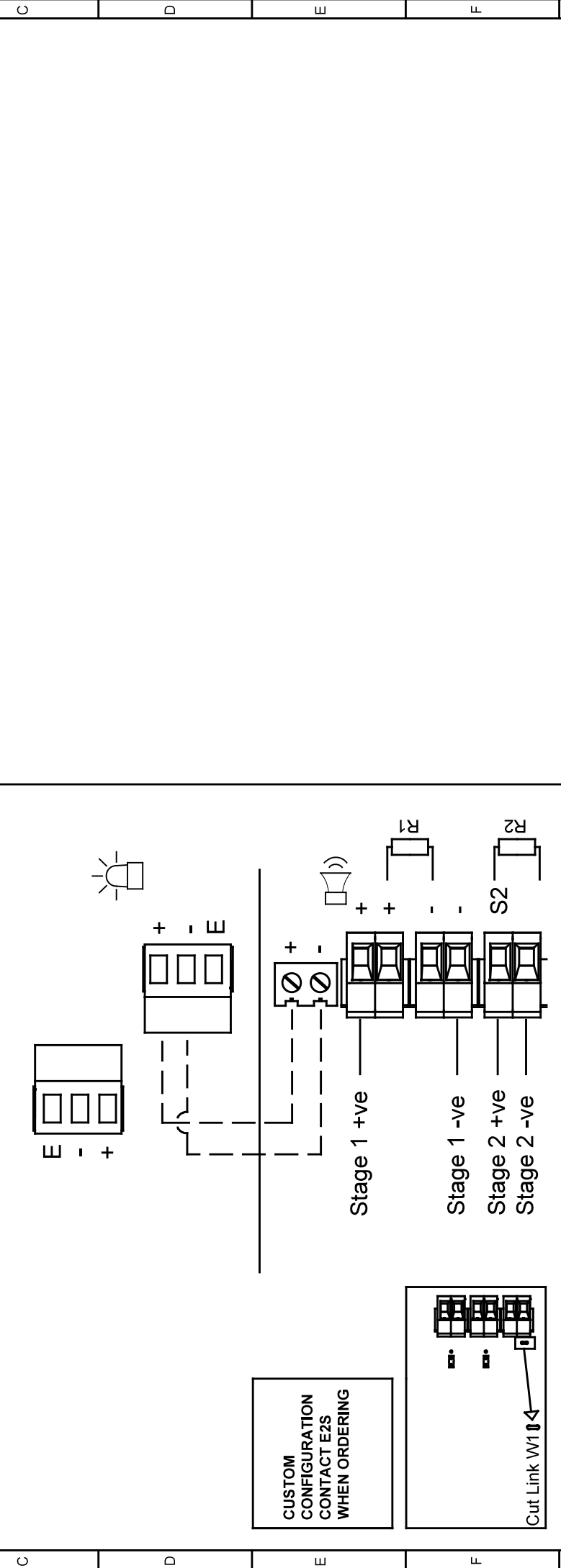


DRAWING TO BS8888:2000 GEOMETRIC TOLERANCES TO ISO1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS	DRAWN	DATE	SURFACE FINISH	WEIGHT (kg)	A3
	R.S. RAIT	16/03/2021	MATERIAL		
STANDARDS ALERTALARM RANGE	CHECKED	DATE	THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE INFO IS THE COPYRIGHT PROPERTY OF EUROPEAN SAFETY SYSTEMS LTD. NEITHER THE WHOLE OR ANY EXTRACT MAY BE DISCLOSED, LOANED, COPIED OR USED FOR MANUFACTURING OR OTHER PURPOSES WITHOUT THEIR WRITTEN CONSENT. EUROPEAN SAFETY SYSTEMS LTD. 1000 ACTON ROAD MANSELL ROAD LONDON W3 7QH WWW.ES.COM		
	B. ISARD	16/03/2021			
	APPROVED	DATE	ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE		
	R.N. POTTS	16/03/2021			
TITLE		SCALE		DRAWING NUMBER	
AL112NH & AL121H DC COMBINED SOUNDER & LED WIRING DIAGRAMS		NTS 2 OF 6		D221-06-251	

1	2	3	4	5	6	7	8	9	10	
<b>WIRING LINKING BEACON &amp; SOUNDER FACTORY FITTED</b> 		<b>OPTIONAL LINE MONITORING RESISTOR, CUSTOMER SUPPLIED, RECOMMENDED MINIMUM VALUES:</b> 14V MAX SYSTEM = 120Ω MIN, 2W MIN OR 1KΩ MIN, 0.5W MIN 28V MAX SYSTEM = 470Ω MIN, 2W MIN OR 2.4KΩ MIN, 0.5W MIN 		<b>SWITCHES FOR STAGE OPERATION CUSTOMER SUPPLIED</b> 		<b>ISSUE MOD No. INTRODUCTION</b> A RSR - 16/03/2021		<b>REASON - INITIAL - DATE</b> 16/03/2021		

**Linked Sounder & Beacon Activation (Default)**

**Two Stage Configuration**  
 independent Stage Input  
 Line Stage Monitoring (Use suitable monitoring relays/modules)  
 Not to be used for reverse polarity monitoring  
 Stage 1: Apply Power to Stage 1 +ve & Stage 1 -ve  
 Stage 2: Apply Power to Stage 2 +ve & Stage 2 -ve



DRAWING TO BS6888:2000 GEOMETRIC TOLERANCES TO ISO 1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS	<b>DRAWN</b> R.S.RAIT	<b>DATE</b> 16/03/2021	<b>SURFACE FINISH</b> MATERIAL	<b>WEIGHT (kg)</b>
	<b>CHECKED</b> B.ISARD	<b>DATE</b> 16/03/2021	<b>ALTERNATIVE MATERIAL</b>	
<b>STANDARDS</b> ALERTALARM RANGE	<b>APPROVED</b> R.N.POTTS	<b>DATE</b> 16/03/2021	© EUROPEAN SAFETY SYSTEMS LTD. AS PER LATEST DATE OF ISSUE SHOWN ABOVE	
<b>ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE</b>			<b>SCALE</b> NTS	<b>SHEET</b> 3 OF 6
<b>TITLE</b> AL112NH & AL121H DC COMBINED SOUNDER & LED WIRING DIAGRAMS			<b>DRAWING NUMBER</b> D221-06-251	<b>ISSUE</b> A

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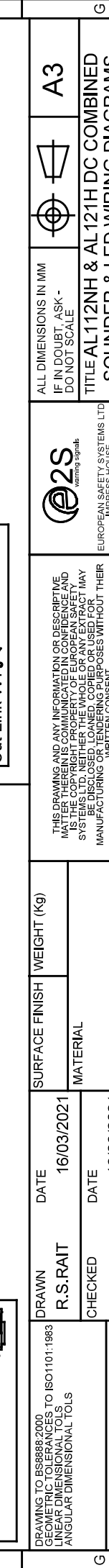
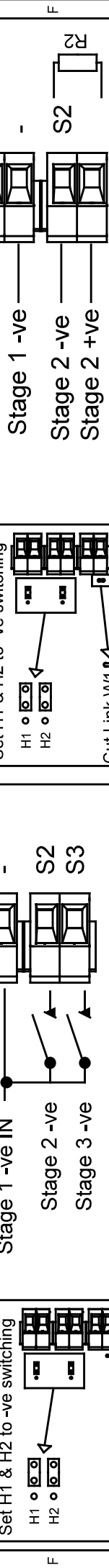
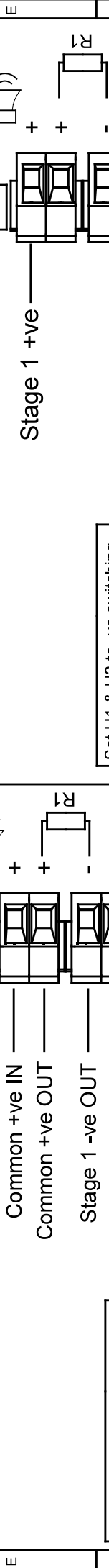
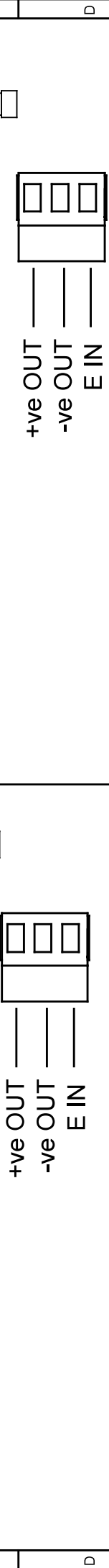
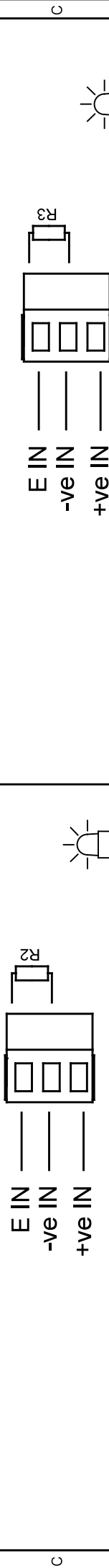
**Independent Sounder & Beacon Activation (Remove Link Wire)**

**Three/Four Stages. Voltage Free 2nd, 3rd & 4th Stage Activation Configuration**      Config.: 6

**Common Positive**

Customer Set H1 & H2 to Negative Switching (See Below)

Stage 1: Apply Power to Common +ve & Stage 1 -ve  
 Stage 2: Apply Power to Common +ve & Stage 1 -ve & connect Stage 2 -ve to Stage 1 -ve  
 Stage 3: Apply Power to Common +ve & Stage 1 -ve & connect Stage 3 -ve to Stage 1 -ve  
 Stage 4: Apply Power to Common +ve & Stage 1 -ve & connect Stage 2 -ve & Stage 3 -ve to Stage 1 -ve



DRAWING TO BS8888:2000 GEOMETRIC TOLERANCES TO ISO1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS	DRAWN	DATE	SURFACE FINISH	WEIGHT (kg)	A3
	R.S. RAIT	16/03/2021	MATERIAL		
STANDARDS ALERTALARM RANGE	CHECKED	DATE	ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE		
	B. ISARD	16/03/2021			
ALERTALARM RANGE	APPROVED	DATE	TITLE AL112NH & AL121H DC COMBINED SOUNDER & LED WIRING DIAGRAMS		
	R.N. POTTS	16/03/2021			
		SCALE	SHEET	DRAWING NUMBER	
		NTS	5 OF 6	D221-06-251	



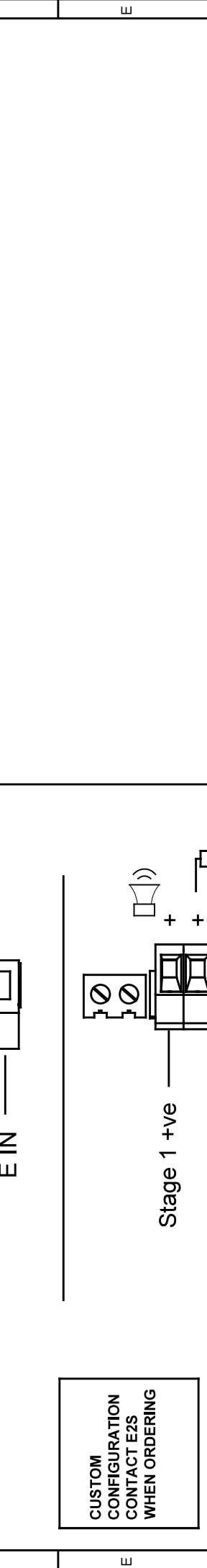
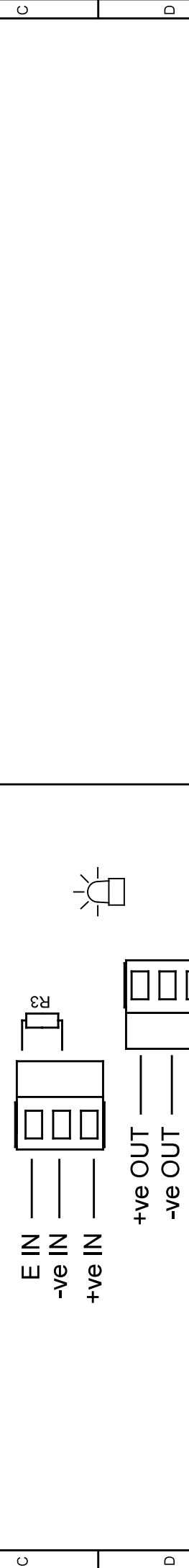
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1	2	3	4	5	6	7	8	9	10						
<table border="1"> <tr> <td>ISSUE</td> <td>MOD No.</td> <td>REASON - INITIAL - DATE</td> </tr> <tr> <td>A</td> <td></td> <td>INTRODUCTION RSR - 16/03/2021</td> </tr> </table>										ISSUE	MOD No.	REASON - INITIAL - DATE	A		INTRODUCTION RSR - 16/03/2021
ISSUE	MOD No.	REASON - INITIAL - DATE													
A		INTRODUCTION RSR - 16/03/2021													
<table border="1"> <tr> <td>OPTIONAL LINE MONITORING RESISTOR, CUSTOMER SUPPLIED, RECOMMENDED MINIMUM VALUES: 14V MAX SYSTEM = 120Ω MIN, 2W MIN OR 1KΩ MIN, 0.5W MIN 28V MAX SYSTEM = 470Ω MIN, 2W MIN OR 2.4KΩ MIN, 0.5W MIN</td> </tr> </table>										OPTIONAL LINE MONITORING RESISTOR, CUSTOMER SUPPLIED, RECOMMENDED MINIMUM VALUES: 14V MAX SYSTEM = 120Ω MIN, 2W MIN OR 1KΩ MIN, 0.5W MIN 28V MAX SYSTEM = 470Ω MIN, 2W MIN OR 2.4KΩ MIN, 0.5W MIN					
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<table border="1"> <tr> <td>SWITCHES FOR STAGE OPERATION CUSTOMER SUPPLIED</td> </tr> </table>										SWITCHES FOR STAGE OPERATION CUSTOMER SUPPLIED					
SWITCHES FOR STAGE OPERATION CUSTOMER SUPPLIED															

**Independent Sounder & Beacon Activation (Remove Link Wires)**

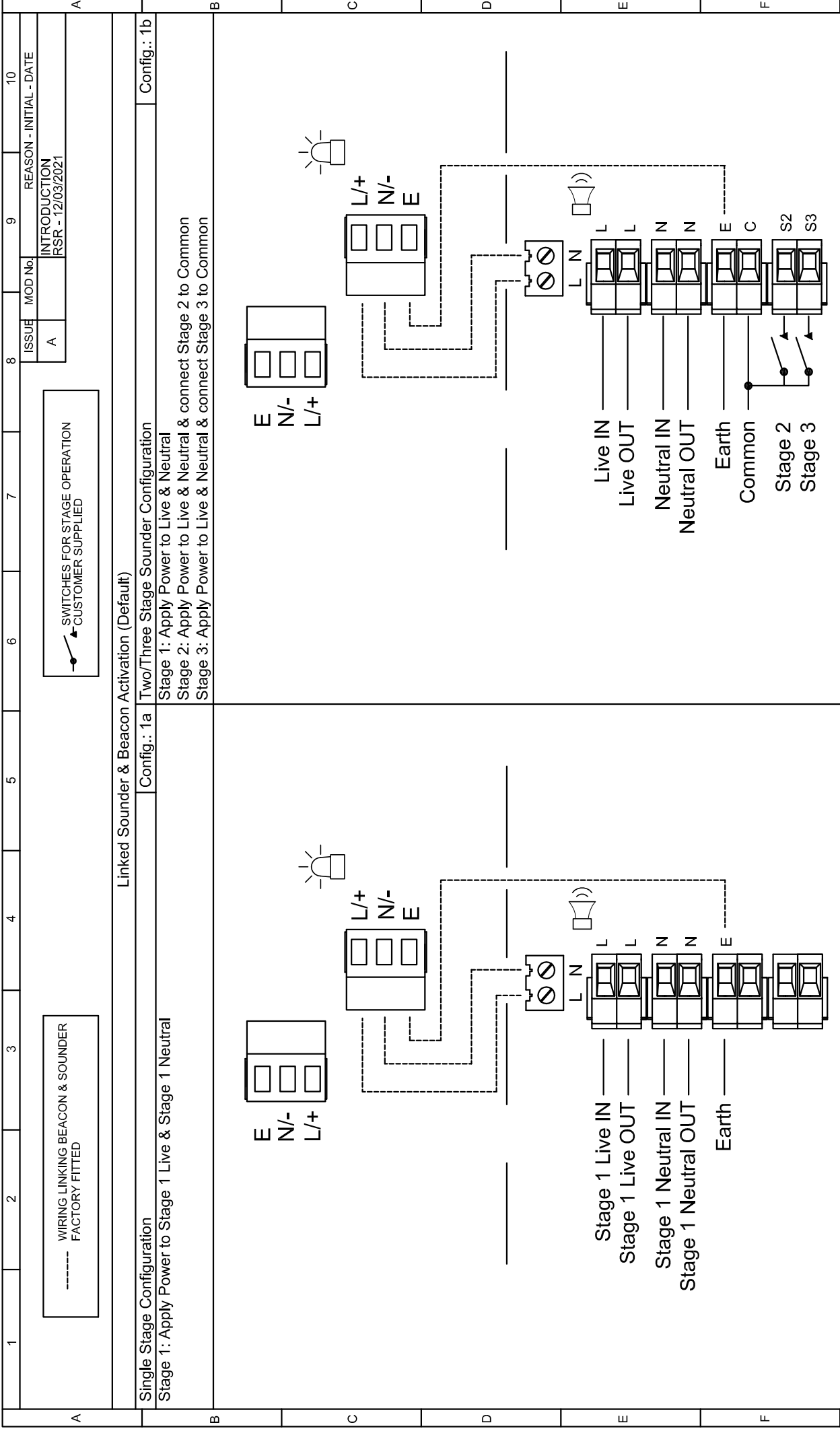
Two Stage Configuration  
 Independent Stage Input  
 Line Stage Monitoring (Use suitable monitoring relays/modules)  
 Not to be used for reverse polarity monitoring  
 Stage 1: Apply Power to Stage 1 +ve & Stage 1 -ve  
 Stage 2: Apply Power to Stage 2 +ve & Stage 2 -ve



**CUSTOM CONFIGURATION CONTACT E2S WHEN ORDERING**

Cut Link W1

DRAWING TO BS8888:2000 GEOMETRIC TOLERANCES TO ISO1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS	DRAWN	DATE	SURFACE FINISH	WEIGHT (kg)												
	R.S.RAIT	16/03/2021	MATERIAL													
	CHECKED	DATE	ALTERNATIVE MATERIAL													
STANDARDS ALERTALARM RANGE	B.ISARD	16/03/2021														
	APPROVED	DATE														
	R.N.POTTS	16/03/2021														
<table border="1"> <tr> <td>ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE</td> <td></td> <td>A3</td> </tr> <tr> <td colspan="3">TITLE AL112NH &amp; AL121H DC COMBINED SOUNDER &amp; LED WIRING DIAGRAMS</td> </tr> <tr> <td>SCALE</td> <td>SHEET</td> <td>DRAWING NUMBER</td> </tr> <tr> <td>NTS</td> <td>6 OF 6</td> <td>D221-06-251</td> </tr> </table>					ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE		A3	TITLE AL112NH & AL121H DC COMBINED SOUNDER & LED WIRING DIAGRAMS			SCALE	SHEET	DRAWING NUMBER	NTS	6 OF 6	D221-06-251
ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE		A3														
TITLE AL112NH & AL121H DC COMBINED SOUNDER & LED WIRING DIAGRAMS																
SCALE	SHEET	DRAWING NUMBER														
NTS	6 OF 6	D221-06-251														
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----- WIRING LINKING BEACON & SOUNDER  
FACTORY FITTED

SWITCHES FOR STAGE OPERATION  
CUSTOMER SUPPLIED

1	2	3	4	5	6	7	8	9	10
ISSUE		MOD No.		REASON - INITIAL - DATE		INTRODUCTION		RSR - 12/03/2021	
A									

Linked Sounder & Beacon Activation (Default)

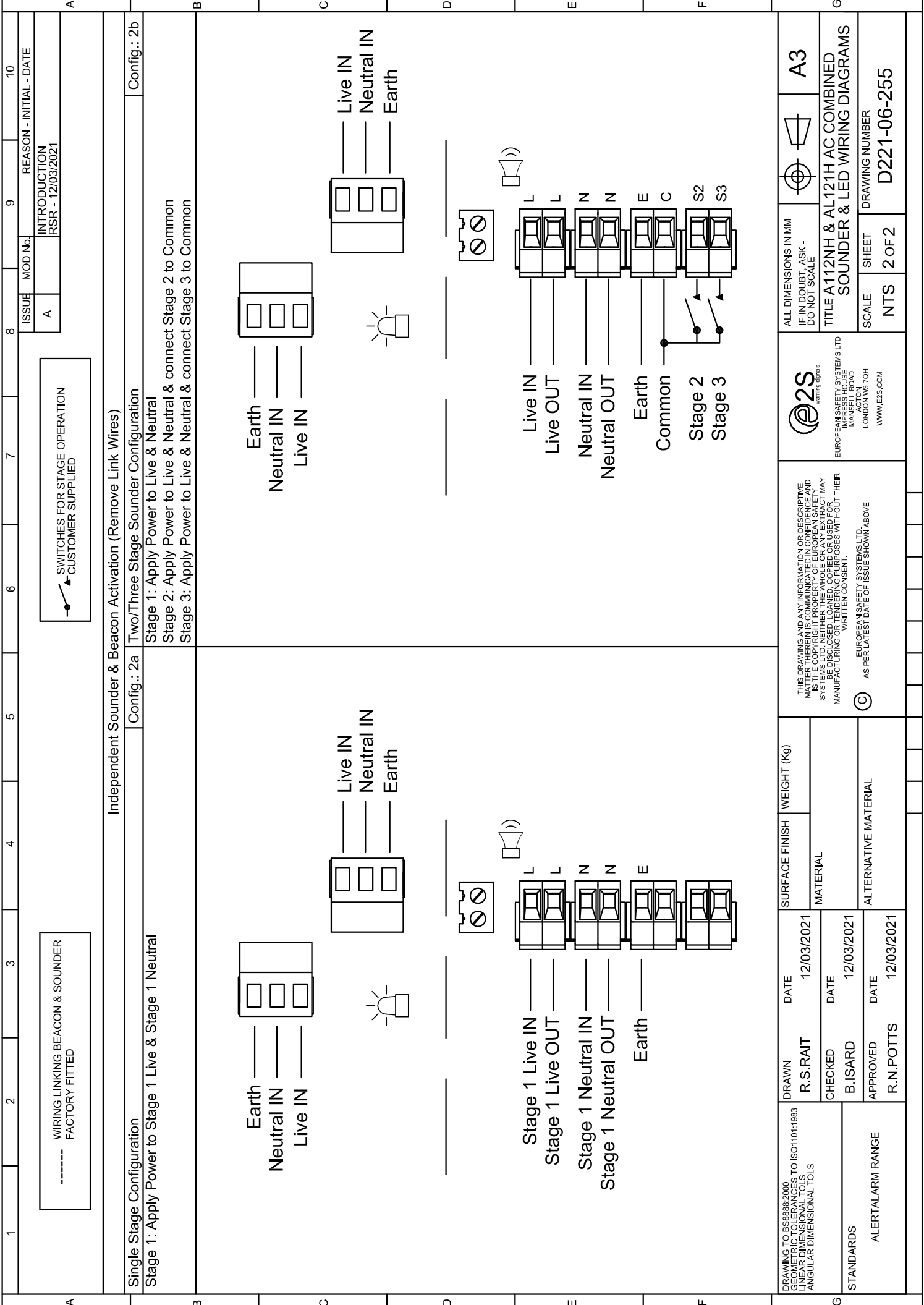
Single Stage Configuration  
Stage 1: Apply Power to Stage 1 Live & Stage 1 Neutral

Two/Three Stage Sounder Configuration  
Stage 1: Apply Power to Live & Neutral  
Stage 2: Apply Power to Live & Neutral & connect Stage 2 to Common  
Stage 3: Apply Power to Live & Neutral & connect Stage 3 to Common

Config.: 1a

Config.: 1b

DRAWING TO BS6888:2000 GEOMETRIC TOLERANCES TO ISO1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS	DRAWN	DATE	SURFACE FINISH	WEIGHT (kg)
	R.S.RAIT	12/03/2021	MATERIAL	
STANDARDS ALERTALARM RANGE	CHECKED	DATE	ALTERNATIVE MATERIAL	
	B.ISARD	12/03/2021		
APPROVED		DATE		
R.N.POTTS		12/03/2021		
EUROPEAN SAFETY SYSTEMS LTD. WIRING SIGNALS A33 LONDON W3 7QH MANSFIELD ROAD WWW.E2S.COM		ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE		A3
TITLE A112NH & AL121H AC COMBINED SOUNDER & LED WIRING DIAGRAMS		SCALE	SHEET	DRAWING NUMBER
		NTS	1 OF 2	D221-06-255



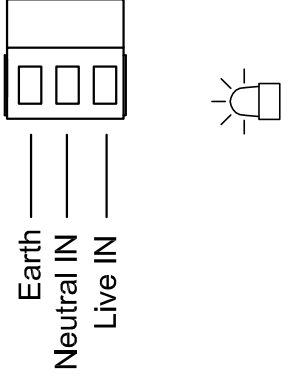
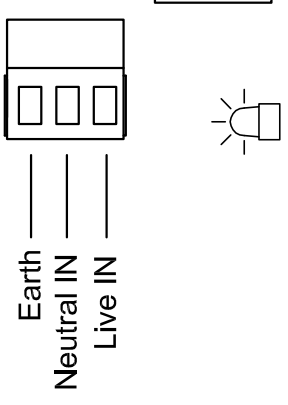
----- WIRING LINKING BEACON & SOUNDER  
FACTORY FITTED

SWITCHES FOR STAGE OPERATION  
CUSTOMER SUPPLIED

Independent Sounder & Beacon Activation (Remove Link Wires)

**Single Stage Configuration** Config.: 2a  
 Stage 1: Apply Power to Stage 1 Live & Stage 1 Neutral

**Two/Three Stage Sounder Configuration** Config.: 2b  
 Stage 1: Apply Power to Live & Neutral  
 Stage 2: Apply Power to Live & Neutral & connect Stage 2 to Common  
 Stage 3: Apply Power to Live & Neutral & connect Stage 3 to Common



DRAWING TO BS6888:2000 GEOMETRIC TOLERANCES TO ISO1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS	DRAWN R.S.RAIT	DATE 12/03/2021	SURFACE FINISH	WEIGHT (kg)
	CHECKED B.ISARD	DATE 12/03/2021	MATERIAL	
STANDARDS ALERTALARM RANGE	APPROVED R.N.POTTS	DATE 12/03/2021	ALTERNATIVE MATERIAL	
EUROPEAN SAFETY SYSTEMS LTD. ACTION LONDON W3 7QH MANSELL ROAD WWW.ESS2S.COM		ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE		A3
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SCALE NTS		SHEET 2 OF 2		

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