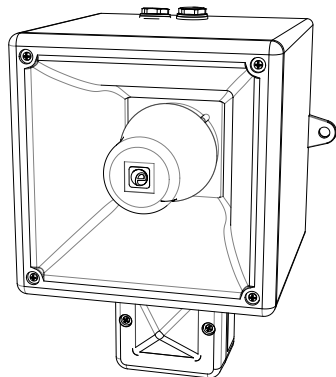


# INSTRUCTION & SERVICE MANUAL

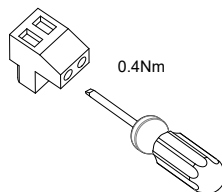
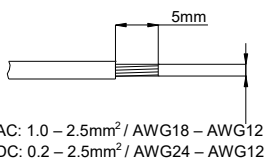
## AL121X AlertAlarm Combined Sounder Xenon

- -40°C to +66°C (-40°F to 151°F)
- Type 4 / 4X / 3R / 13, IP66
- 2Kg (4.4lb)
- CE, UKCA, AL121XDC024 & AL121XDC048 CPR compliant
- 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
AL121XDC012	12 Vdc	11.5-14Vdc	341mA	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
AL121XDC024	24 Vdc	20-28 Vdc	250mA	430mA / 930mA			
AL121XDC048	48 Vdc	42-52 Vdc	170mA	223mA / 453mA			
AL121XAC115	115 Vac	103.5-126.5 Vac 50/60Hz	70mA	173mA / 340mA			
AL121XAC230	230 Vac	207-240 Vac 50/60Hz	35mA	105mA / 212mA			

\*Nominal current at nominal voltage



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.

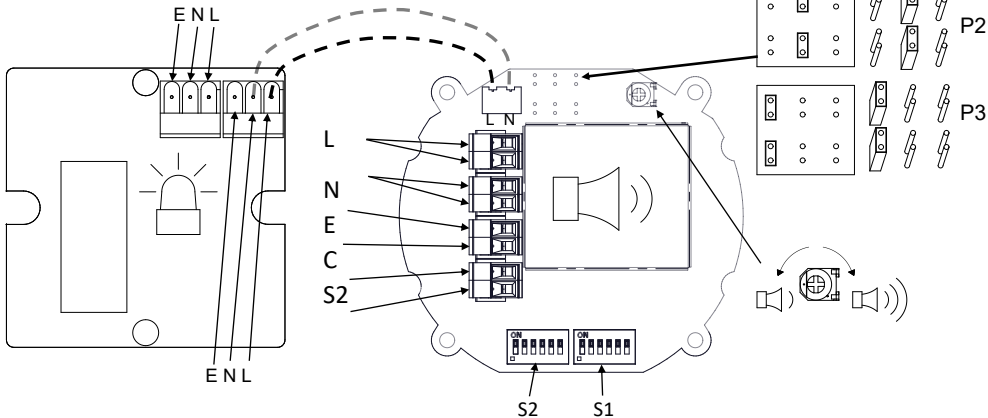
Atenção: Desconecte da fonte de alimentação antes da instalação ou serviço para evitar choque elétrico

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



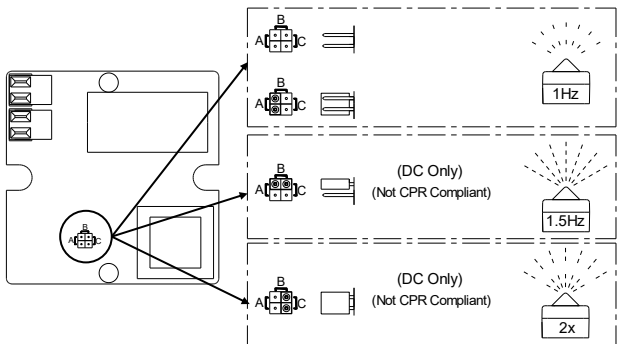
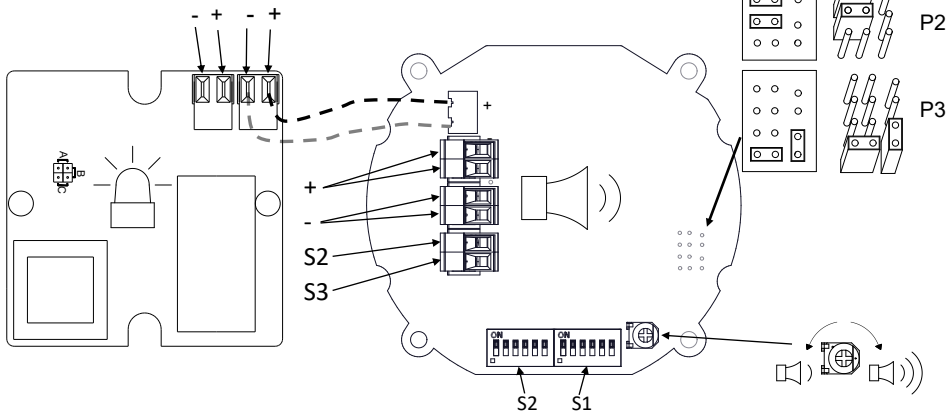
**AC**

(See D221-06-205)



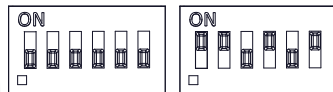
**DC**

(See D221-06-201)



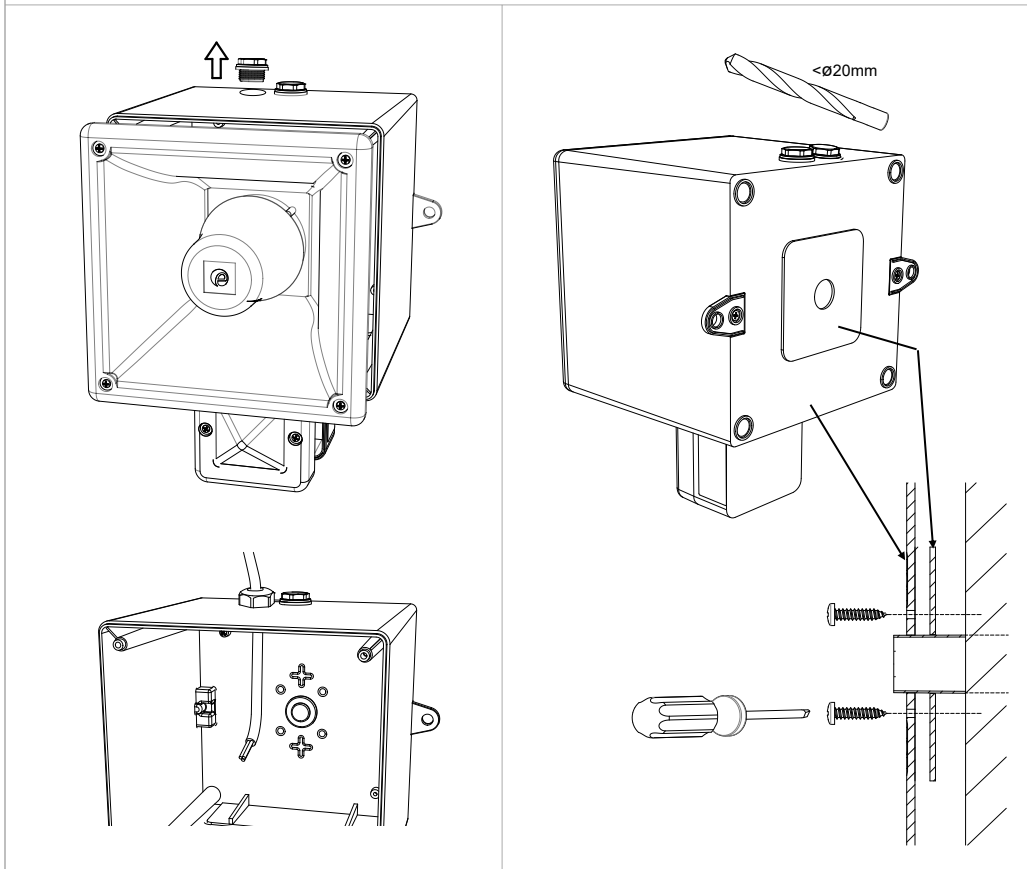
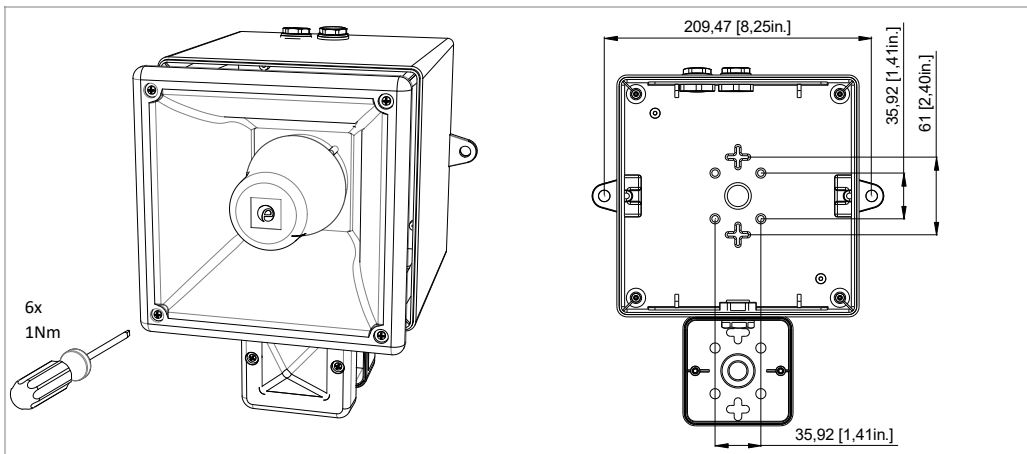
(AC & DC, See D221-95-001)

Default = S2 - Tone 1      Default = S1 - Tone 44



(ON = 1, OFF = 0)

INSTRUCTION & SERVICE MANUAL  
AL121X AlertAlarm Combined Sounder Xenon



### Construction Product Regulation

- AL121XDC024 & AL121XDC048 are compliant to EN54-3:2001+A1+A2 & EN54-23:2010
- VAD for use in fire detection and fire alarm systems installed in and around buildings
- Type 4 / 4X / 3R / 13, IP66, Independently tested to EN60529:1991, (IP33C Compliant to EN54-3)
- Type B Product, For Indoor & Outdoor use
- Observe Precautions for handling electrostatic devices
- -25°C to +55°C compliant to EN54-3
- Cable Glands must be suitably sealed and meet minimum IP33 for EN54-3 applications
- Storage Temperature: -40°C to +70°C
- Maintenance – None
- Mounting - 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.

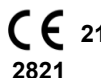
Order Code: AL121XDC024  
 Voltage Range: 20-28Vdc  
 Nominal Voltage: 24Vdc  
 Max Sounder Current: P2: 430mA  
 Max Beacon Current: 271mA @ 20Vdc

Order Code: AL121XDC048  
 Voltage Range: 42-52Vdc  
 Nominal Voltage: 48Vdc  
 Max Sounder Current: P2: 430mA  
 Max Beacon Current: 160mA @ 42Vdc

DOP: DP-2821-CPR-0110  
 UKCA Cert: 0843-CPR-1008  
 EU Cert: 2821-CPR-0110

### Approved Tones for EN54-3 Applications:

- (Alternating Tone) 800/1000Hz @ 2Hz Alternating Tone 44
- (Rising Tone) 500/1200Hz @ 0.26Hz (3.3s on, 0.5s off) Tone 8
- (Fainting Tone) 1200/500Hz @ 1Hz Tone 2
- (Continuous Tone) 800Hz Tone 21
- (Pulsed Tone) 660Hz (150mS on, 150mS off) Tone 31
- (Alternating Tone) 544Hz(100mS)/440Hz (400mS) Tone 5



AL121XDC024 / AL121XDC048 (P2) @ 1m

Angle	Horizontal Sound Output Max Voltage (54 Vdc) LAFmax,T dB(A)						Horizontal Sound Output Min Voltage (11.5 Vdc) LAFmax,T dB(A)					
	Tone 44	Tone 8	Tone 2	Tone 21	Tone 31	Tone 5	Tone 44	Tone 8	Tone 2	Tone 21	Tone 31	Tone 5
15°	106.1	105.8	105.1	105.4	105.2	93.9	101.2	101.6	101.1	101	101.2	91
45°	105.2	107.2	106.3	104.1	98.7	101.6	101.3	102.9	102.1	100.2	94.7	99
75°	112.1	112.6	111.9	111.7	110.1	104.8	108.1	108.5	107.7	108.1	106.5	103
105°	111.9	112.5	111.7	111.7	110.2	104.8	107.9	108.4	107.6	108.1	106.4	103
135°	104.8	107.4	106.4	103.8	99.2	101.6	101.1	103.2	102.1	99.8	95.5	99
165°	105.2	105.8	105.2	105.3	105.1	93.8	100.8	101.5	100.8	100.9	102	90.8

Angle	Vertical Sound Output Max Voltage (54 Vdc) LAFmax,T dB(A)						Vertical Sound Output Min Voltage (11.5 Vdc) LAFmax,T dB(A)					
	Tone 44	Tone 8	Tone 2	Tone 21	Tone 31	Tone 5	Tone 44	Tone 8	Tone 2	Tone 21	Tone 31	Tone 5
15°	107.2	107.1	105.9	107.4	105.5	95.5	103.1	102.8	101.5	103.1	101.5	91.8
45°	106	109.3	107.9	104.6	100.5	103.7	102.2	105.4	103.8	100.4	96.6	99.9
75°	113.2	113.3	112.9	113	110.8	106.1	109.2	109.3	108.7	109.1	107.1	103
105°	112.9	113.1	112.7	112.8	111.4	106.1	109	108.9	108.5	108.9	107.7	103.1
135°	105.5	109.3	107.7	104.7	100.3	104.3	101.4	105.3	103.5	100.7	96.5	100.7
165°	107	106.5	105.9	106.4	105.3	95	102.6	102.1	101.5	102.2	101.1	91.2

AL121XDC024 (P3) @ 1m

Angle	Horizontal Sound Output Max Voltage (54 Vdc) LAFmax,T dB(A)						Horizontal Sound Output Min Voltage (11.5 Vdc) LAFmax,T dB(A)					
	Tone 44	Tone 8	Tone 2	Tone 21	Tone 31	Tone 5	Tone 44	Tone 8	Tone 2	Tone 21	Tone 31	Tone 5
15°	107.5	108.4	107.1	106.8	106.5	105.1	104.2	105.3	104.6	103.5	104.7	102.6
45°	112.8	114.8	113.7	111.9	102.5	104.5	109.7	111.2	110.7	108.9	100.4	101.7
75°	115.2	116.7	115.4	115.5	112.5	113	112.2	113.2	112.7	112.5	110.1	110.3
105°	115.6	116.5	115.7	116	113.7	113	112.6	113.4	113.1	112.9	111.1	110.1
135°	112.8	114.7	113.7	111.7	102.3	104.6	109.7	111.2	110.7	108.9	100.1	101.7
165°	107.5	108.4	106.9	107	106.5	104.9	104.3	104.9	104.2	103.5	104.5	102.3

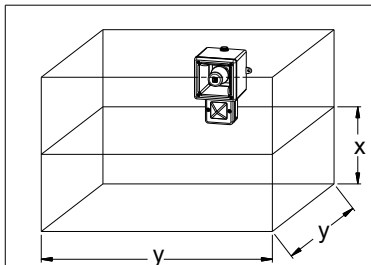
  

Angle	Vertical Sound Output Max Voltage (54 Vdc) LAFmax,T dB(A)						Vertical Sound Output Min Voltage (11.5 Vdc) LAFmax,T dB(A)					
	Tone 44	Tone 8	Tone 2	Tone 21	Tone 31	Tone 5	Tone 44	Tone 8	Tone 2	Tone 21	Tone 31	Tone 5
15°	107.4	108.2	107.3	105.9	106.3	105.3	104.2	105.3	104.7	103.3	104.6	102.7
45°	112.7	114.7	113.5	111.8	102.4	104.6	109.8	111.2	110.8	109	100.3	101.7
75°	115.3	116.4	115.6	115.4	113.3	112.5	112.4	112.8	112.8	112.5	110.7	110.1
105°	115.3	116.4	115.6	115.6	113.5	113	112.3	112.9	113	112.7	111	110
135°	112.6	114.7	113.5	112.3	102.5	104.8	109.7	111.3	110.9	109.2	100.3	101.9
165°	107.6	108.1	106.9	105.8	106.3	104.9	104.4	105.1	104.4	103.3	104.4	102.3

# INSTRUCTION & SERVICE MANUAL

## AL121X AlertAlarm Combined Sounder Xenon

### AL121XDC024 & AL121XDC048 LIGHT OUTPUT



Category W-x-y (Wall mounted):  
Wall mounted, where x is the maximum mounting height from the floor and y is the maximum length of the sides of the square floor area covered by the VAD.

Note: CPR approved units must be positioned sounder on top, beacon below.

Coverage Area According to EN54-23  
(Only units in the following table are VdS Approved)

Unit	Category W	Power
AL121XDC024	W-2.4-4.8	11W
	V=55.3m	
AL121XDC048	W-2.5-5	14W
	V=62.5m	

Approved Beacon for EN54-23 Applications:  
Clear lenses are compliant with EN54-23

- All models are approved for use as Audible Signal 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

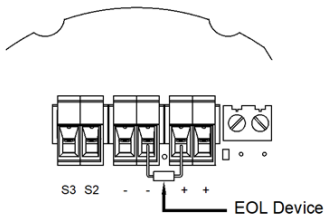
General Signaling Canada:

AL121XDC024: -40°C to +55°C / -40°F to +131°F

AL121XAC230: -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
- Mounting - Units can be mounted using 2-off Ø9mm holes in the mounting lugs or through the back of the housing using the supplied gasket.
- 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 <sup>#</sup>	
			Beacon	Sounder P2 / P3	Beacon	Sounder P2 / P3
AL121XDC012	12V dc	11.5-14Vdc	341mA	376mA / 440mA	531mA	430mA / 930mA
AL121XDC024	24V dc	20-28Vdc	250mA	430mA / 930mA	271mA	
AL121XDC048	48V dc	42-52Vdc	170mA	223mA / 453mA	170mA	
AL112XAC115	115 Vac	103.5-126.5 Vac 50/60Hz	70mA	173mA / 340mA	58mA	181mA / 383mA
AL121XAC230	230 Vac	207-240 Vac 50/60Hz	35mA	105mA / 212mA		

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



Attention: Installation must be carried out by an electrician in compliance with the National Electrical Code, NFPA 70 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 ou CSA 22.1 Code canadien de l'électricité, première partie, norme de sécurité relative aux installations électriques, Section 32

The units have been tested and approved to DNVGL-CG-0339 & EN54-3:2014 incl. A1:2019 for the installation on ships in the following locations:

Temperature: A, B, C & D (Machinery spaces, control rooms, accommodation, bridge, inside cubicles, desks, etc..., pump rooms, holds, rooms with no heating, Open deck, masts)

Humidity: A & B (All locations)

Vibration: A (Bulkheads, Beams, Deck, Bridge)

EMC: A & B (All locations Including Bridge & open deck)

Enclosure: A, B & C (Control rooms, accommodation, bridge, engine room, open deck masts, below floor plates in engine room)

The units comply with Solas 74 Chapter II-2, Regulation 7 & Chapter X, Regulation 3 for installation on ships in the following locations:

Temperature: D (Location -25° to +70°C)

Vibration: A (General Applications)

EMC: B (Bridge & Open Deck Zone)

Enclosure: IP56, Salt mist

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

## AL121X Range AlertAlight Combined Sounder Xenon Beacons

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

#### Model: AL121XDC



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.
- AL121XDC024 is approved for use as an Audible & Visual signal appliance for fire alarm use – Private Mode & Emergency Warning. (UL464 & CAN/ULC-S525 & UL1638 & CAN/ULC-S526).
- AL121XDC024 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).
- AL121XDC024 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 and Emergency Warning use, the beacons must be set to the certified flash patterns of 1Hz.
- For light output ratings see below:

#### On-axis light output rating per UL1638 & Emergency Warning

Model	Lens Colour	UL1638 Intensity (cd) at 1Hz flash rate	Emergency Warning Intensity (cd) at 1Hz flash rate
AL121XDC024	Clear	86.5	69.2
	Amber	38.12	30.5
	Blue	11.75	-
	Green	32.62	26.1
	Magenta	11.75	-
	Red	8.62	-
	Yellow	77.0	61.6

- 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

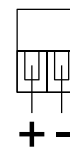
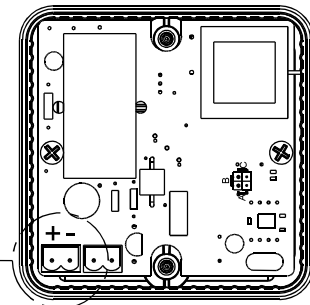
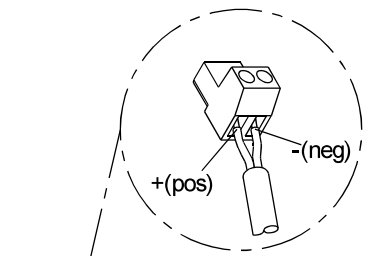
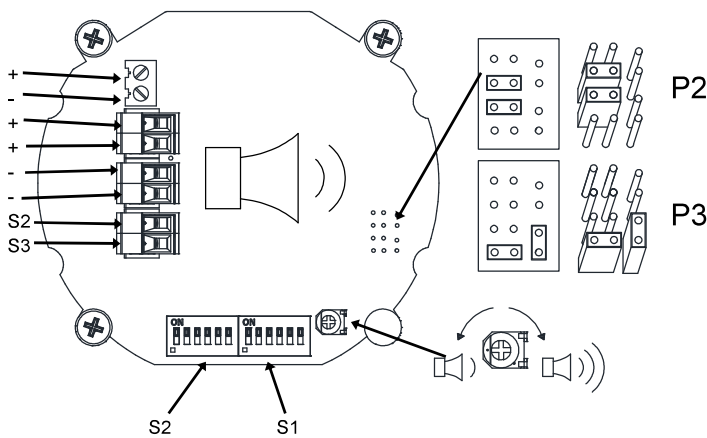
Model	Nominal Voltage	Voltage Range	Flash Rate	Initial Peak (mA)		Initial RMS (mA)	
				Beacon	Sounder	Beacon	Sounder
AL121XDC024	24Vdc	20 to 28Vdc	1 Hz	271	P2: 1164mA / P3: 1829mA	250	P2: 286mA / P3: 554mA



AL121XDC024 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)

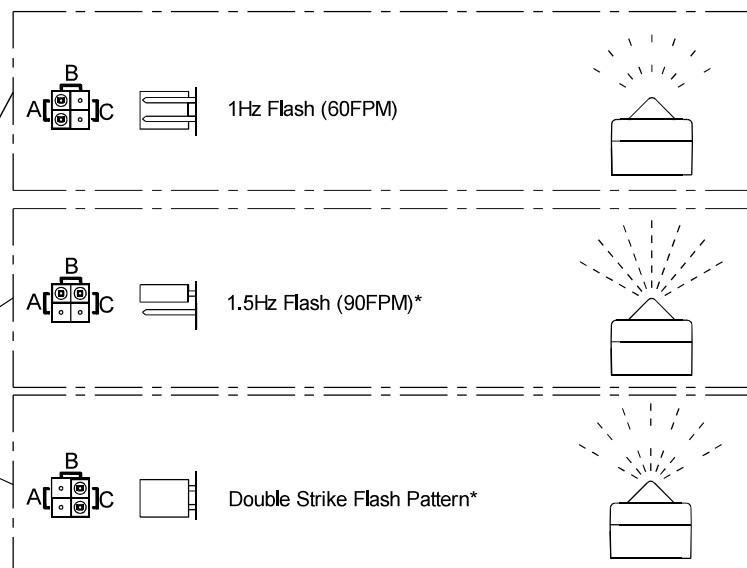
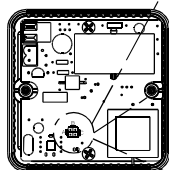
AL121XDC024 Sounder PCBA



AL121XDC024 Beacon PCBA

20-28 VDC

Header Pin Settings for Flashing modes



\*Flash Modes not tested to UL1638 / CAN/ULC-S526

Linked Sounder & Beacon Activation (Default)	
Single Stage Configuration	Three/Four Stage Configuration
Config.: 1a	Config.: 1b
<p><b>Line Monitoring</b> Set to positive switching (default)</p> <p>Stage 1: Apply Power to Stage 1 +ve &amp; Stage 1 -ve</p>	<p><b>Common Negative</b> Set to positive switching (default)</p> <p>Stage 1: Apply Power to Stage 1 +ve &amp; Common -ve Stage 2: Apply Power to Stage 2 +ve &amp; Common -ve Stage 3: Apply Power to Stage 3 +ve &amp; Common -ve Stage 4: Apply Power to Stage 2 +ve, Stage 3 +ve &amp; Common -ve</p>

<p>DRAWN TO BS8888:2000 GEOMETRIC TOLERANCES TO ISO 1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS</p>	<p>DRAWN R.S. RAIT</p>	<p>DATE 16/03/2021</p>	<p>SURFACE FINISH MATERIAL</p>	<p>WEIGHT (kg)</p>	<p>ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE</p>	<p>A3</p>
<p>STANDARDS ALERTALARM RANGE</p>	<p>CHECKED B. ISARD</p>	<p>DATE 16/03/2021</p>	<p>ALTERNATIVE MATERIAL</p>	<p>EUROPEAN SAFETY SYSTEMS LTD. MANSFIELD ROAD LONDON W3 7QH WWW.ESS.COM</p>	<p>TITLE AL112NX &amp; AL121X DC COMBINED SOUNDER &amp; XENON WIRING DIAGRAMS</p>	<p>Scale NTS</p>
	<p>APPROVED R.N. POTTS</p>	<p>DATE 16/03/2021</p>			<p>Scale 1 OF 6</p>	<p>DRAWING NUMBER D221-06-201</p>

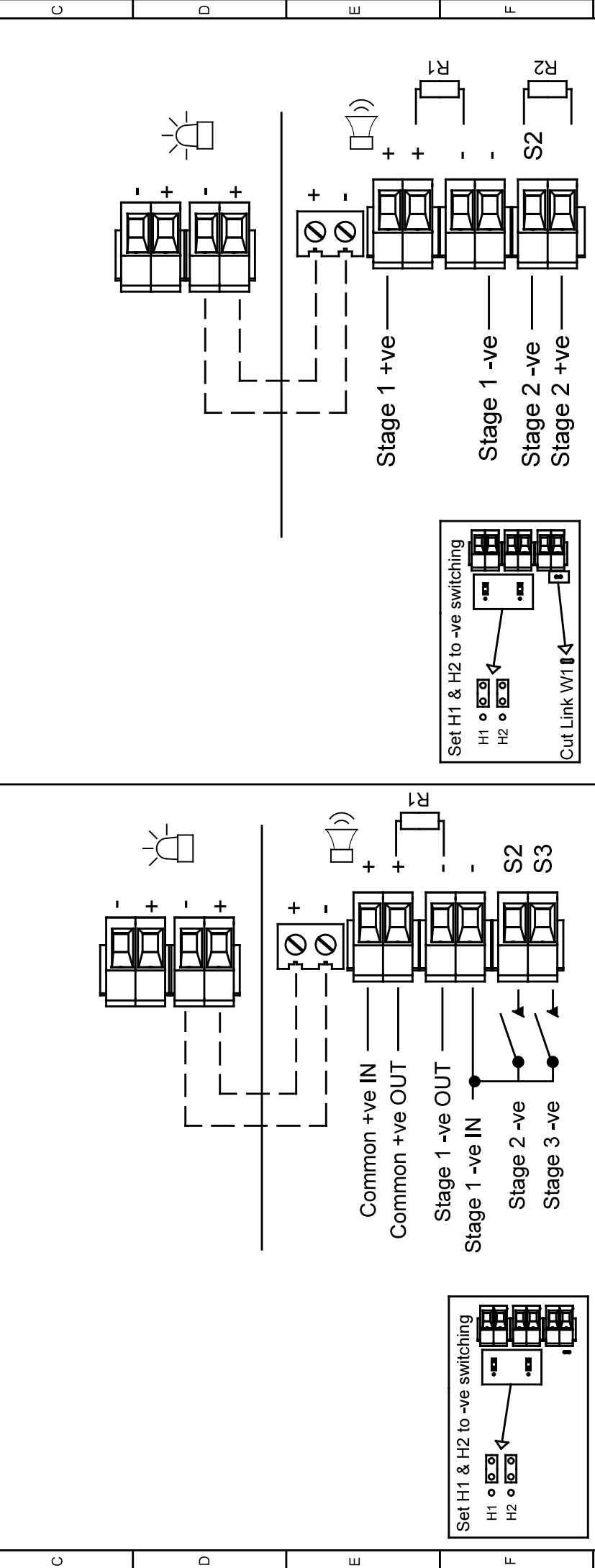
1	2	3	4	5	6	7	8	9	10	
<b>WIRING LINKING BEACON &amp; SOUNDER</b> FACTORY FITTED		 OPTIONAL LINE MONITORING RESISTOR, CUSTOMER SUPPLIED, RECOMMENDED MINIMUM VALUES: 14V MAX SYSTEM = 120Ω MIN, 2W MIN OR 1KΩ MIN, 0.5W MIN 28V MAX SYSTEM = 470Ω MIN, 2W MIN OR 2.4KΩ MIN, 0.5W MIN		 SWITCHES FOR STAGE OPERATION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

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

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

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

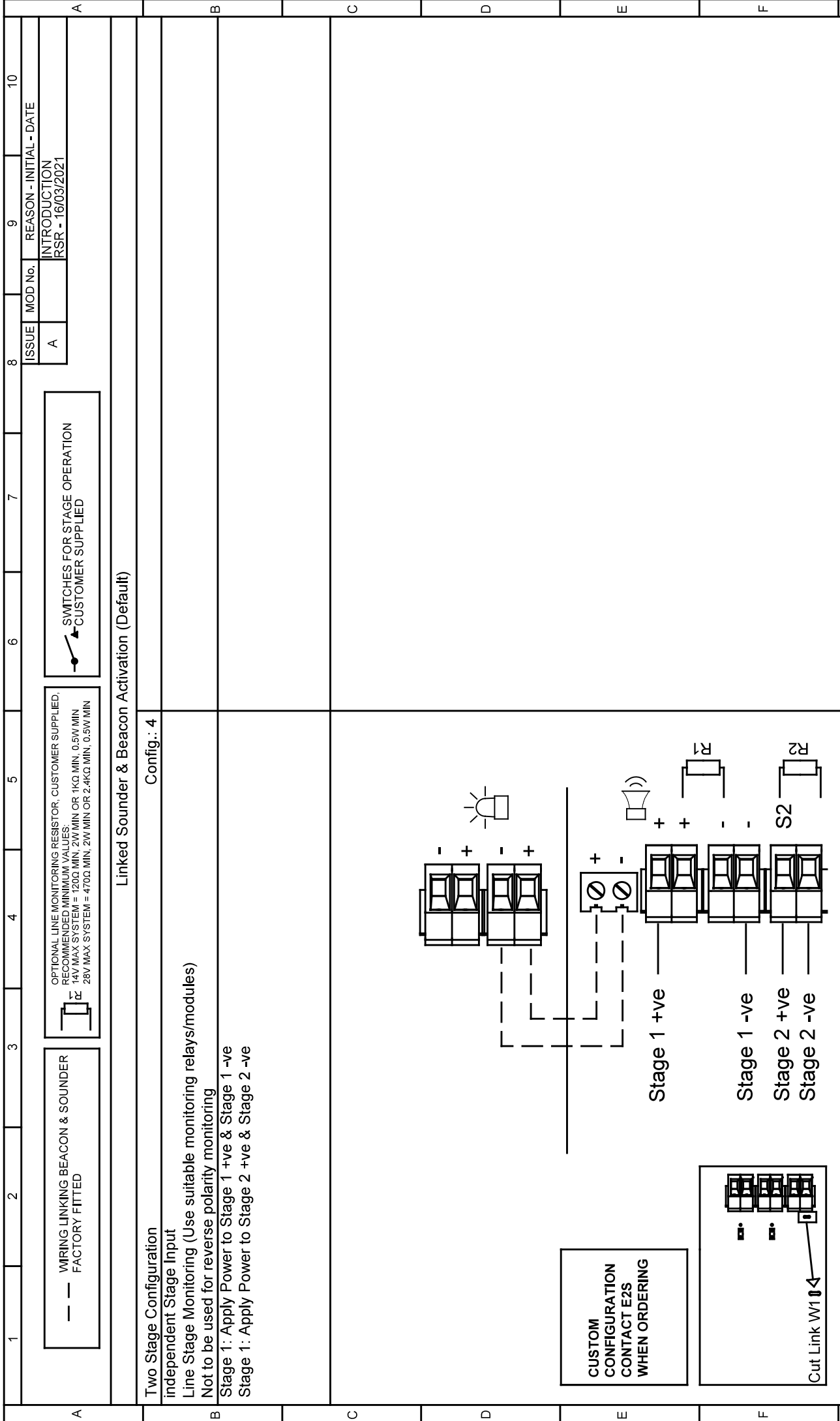
Stage 1: Apply Power to Common +ve & Stage 1 -ve  
 Stage 2: Apply Power to Common +ve & Stage 1 -ve & connect Stage 2 -ve to Stage 1 -ve  
 Stage 3: Apply Power to Common +ve & Stage 1 -ve & connect Stage 3 -ve to Stage 1 -ve  
 Stage 4: Apply Power to Common +ve & Stage 1 -ve & connect Stage 2 -ve & 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)	 ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE	 <b>A3</b>
	R.S. RAIT	16/03/2021	MATERIAL			
STANDARDS ALERTALARM RANGE	CHECKED	DATE	ALTERNATIVE MATERIAL		TITLE AL112NX & AL121X DC COMBINED SOUNDER & XENON WIRING DIAGRAMS	SCALE <b>NTS</b>
	B. ISARD	16/03/2021				
	APPROVED	DATE			 EUROPEAN SAFETY SYSTEMS LTD 11 MANSELL ROAD ACTON LONDON W3 7QH WWW.E2S.COM	DRAWING NUMBER <b>D221-06-201</b>
	R.N. POTTS	16/03/2021				

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AS PER LATEST DATE OF ISSUE SHOWN ABOVE



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

Config.: 4

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

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ISSUE		MOD No.	REASON - INITIAL - DATE		INTRODUCTION		RSR - 16/03/2021		
A									

DRAWING TO BS6888:2000 GEOMETRIC TOLERANCES TO ISO1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS	DRAWN	DATE	SURFACE FINISH	WEIGHT (kg)	MATERIAL	EUROPEAN SAFETY SYSTEMS LTD WARRING SIGNALS MANSELL ROAD LONDON W3 7QH WWW.E2S.COM	ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE	A3
	CHECKED	DATE						
STANDARDS	APPROVED	DATE	ALTERNATIVE MATERIAL		SCALE	SHEET	DRAWING NUMBER	
ALERTALARM RANGE	R.N.POTTS	16/03/2021			NTS	3 OF 6	D221-06-201	

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<p>ISSUE MOD No. REASON - INITIAL - DATE</p> <p>A A INTRODUCTION</p> <p>RSR - 16/03/2021</p>									
<p>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</p>									
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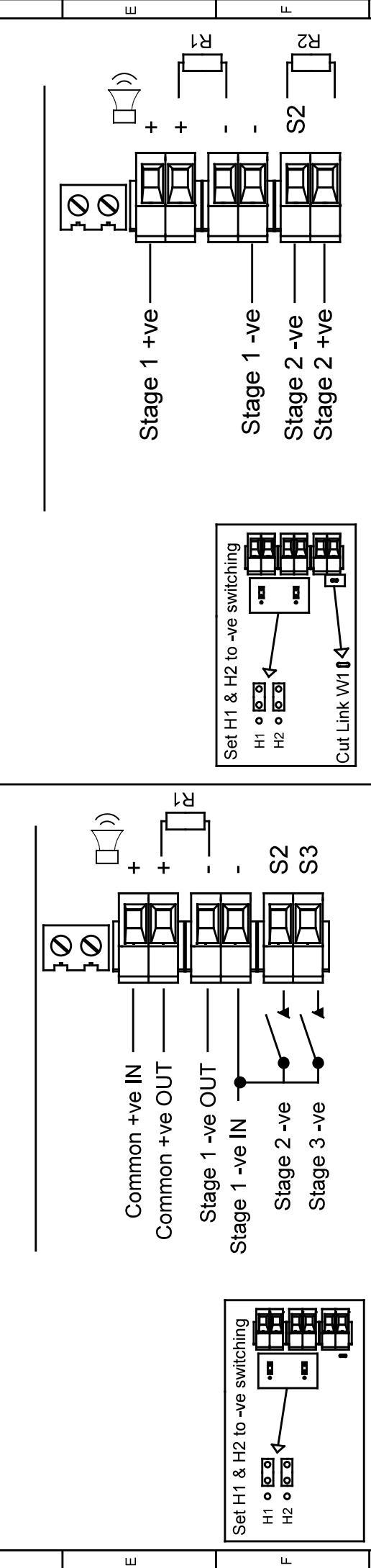
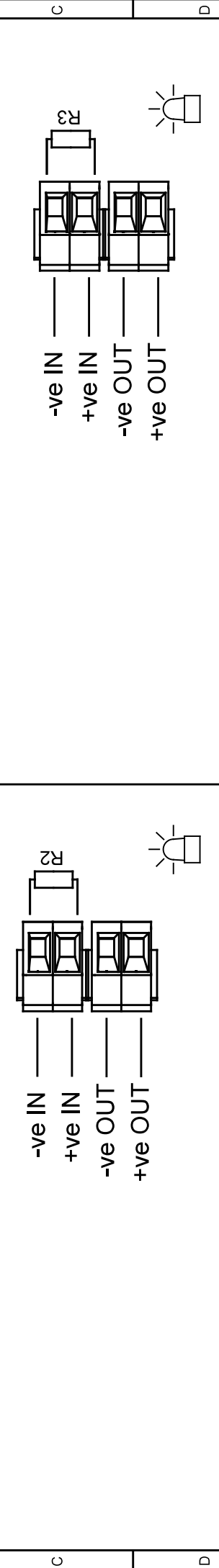
**Independent Sounder & Beacon Activation (Remove Link Wire)**

**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



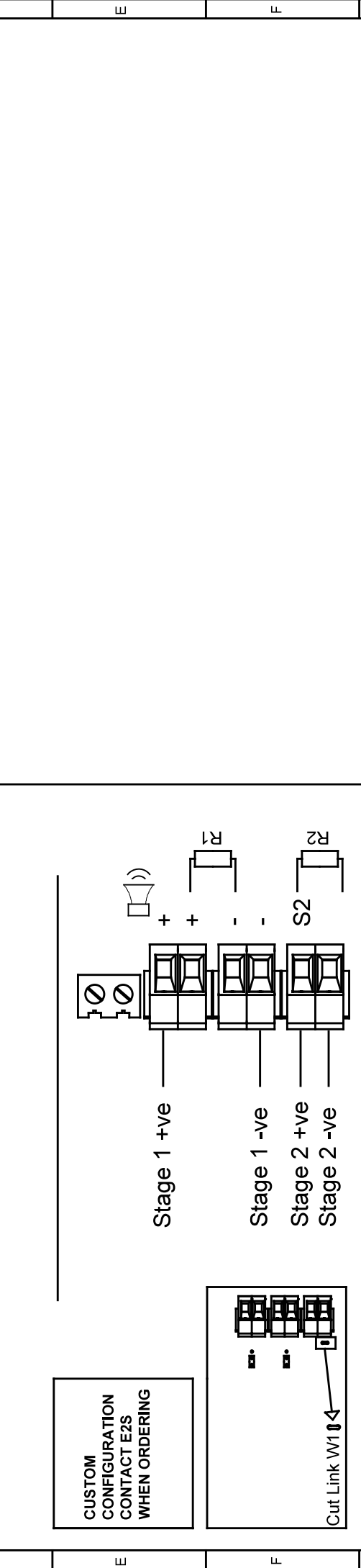
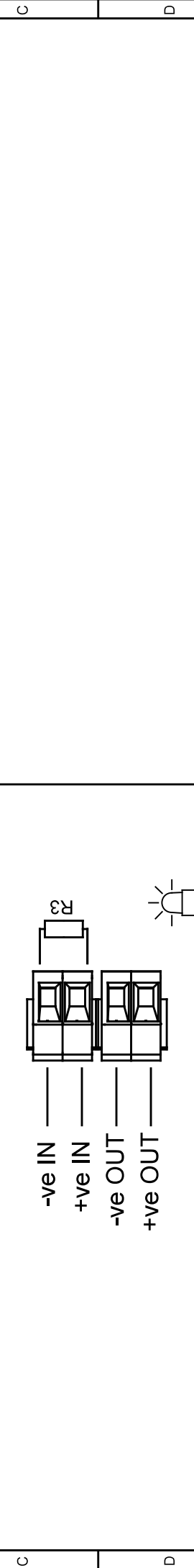
DRAWING TO BS8888:2000 GEOMETRIC TOLERANCES TO ISO1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS	DRAWN	R.S. RAIT	DATE	16/03/2021	SURFACE FINISH WEIGHT (kg)
	CHECKED	B. ISARD	DATE	16/03/2021	
STANDARDS ALERTALARM RANGE	APPROVED	R.N. POTTS	DATE	16/03/2021	ALTERNATIVE MATERIAL
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TITLE AL112NX & AL121X DC COMBINED SOUNDER & XENON WIRING DIAGRAMS					
SCALE NTS			SHEET 5 OF 6		DRAWING NUMBER D221-06-201


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**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

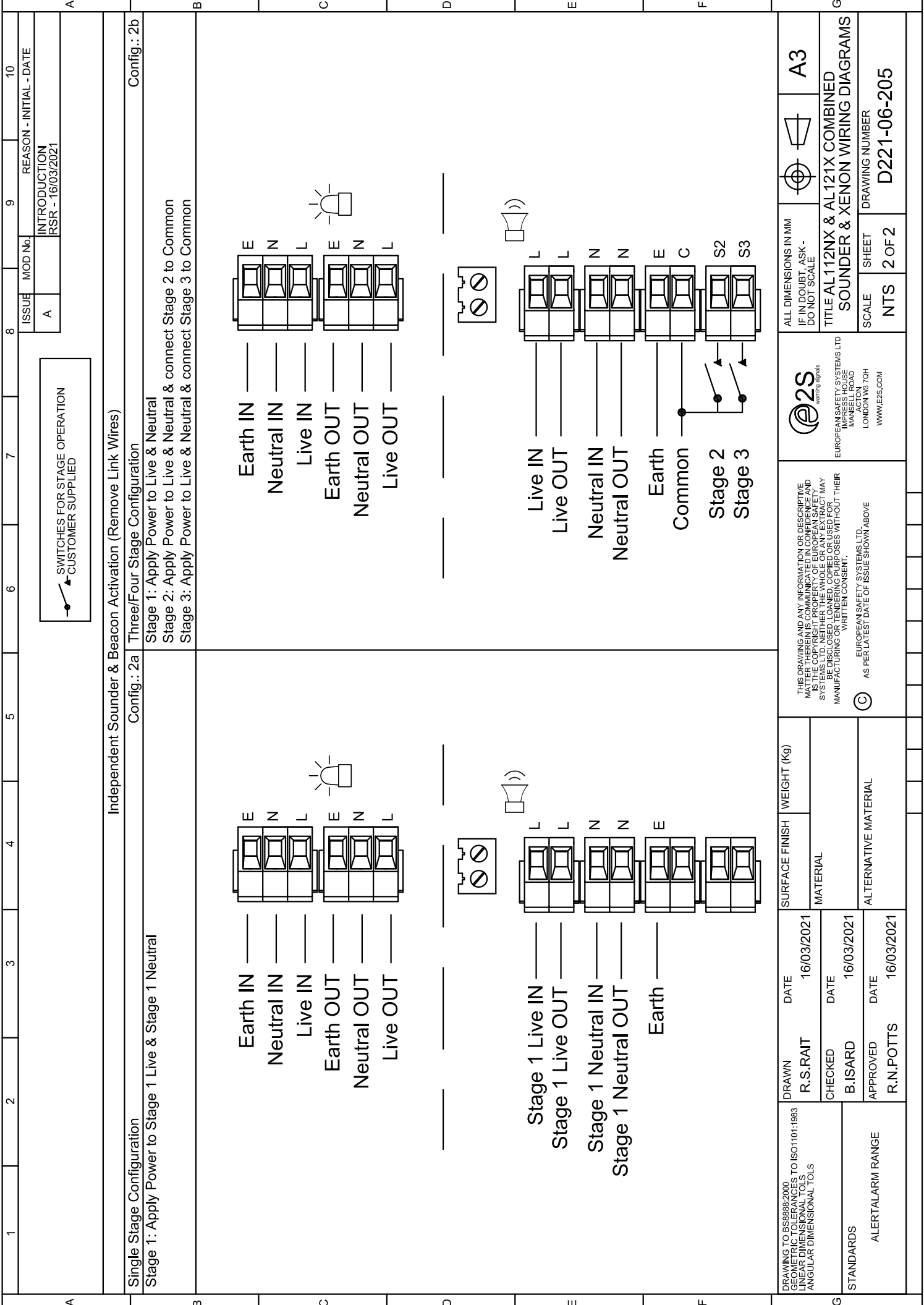
Stage 1: Apply Power to Stage 1 +ve & Stage 1 -ve  
Stage 1: Apply Power to Stage 2 +ve & Stage 2 -ve



DRAWING TO BS6888:2000 GEOMETRIC TOLERANCES TO ISO1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS	DRAWN R.S.RAIT	DATE 16/03/2021	SURFACE FINISH	WEIGHT (kg)
	CHECKED B.ISARD	DATE 16/03/2021	MATERIAL	
STANDARDS ALERTALARM RANGE	APPROVED R.N.POTTS	DATE 16/03/2021	ALTERNATIVE MATERIAL	
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 <p>EUROPEAN SAFETY SYSTEMS LTD. 11 MANSFIELD ROAD LONDON W3 7QH WWW.E2S.COM</p>		<p>ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE</p>		<p>A3</p>
<p>TITLE AL112NX &amp; AL121X DC COMBINED SOUNDER &amp; XENON WIRING DIAGRAMS</p>		<p>SCALE NTS</p>	<p>SHEET 6 OF 6</p>	<p>DRAWING NUMBER D221-06-201</p>

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<p>----- WIRING LINKING BEACON &amp; SOUNDER FACTORY FITTED</p>		<p>SWITCHES FOR STAGE OPERATION CUSTOMER SUPPLIED</p>		<p>ISSUE MOD No. REASON - INITIAL - DATE A</p>		<p>INTRODUCTION RSR - 16/03/2021</p>			
<p>Linked Sounder &amp; Beacon Activation (Default)</p>									
<p>Single Stage Configuration</p>		<p>Config.: 1a</p>		<p>Config.: 1b</p>					
<p>Stage 1: Apply Power to Stage 1 Live &amp; Stage 1 Neutral</p>		<p>Stage 1: Apply Power to Live &amp; Neutral</p>		<p>Stage 2: Apply Power to Live &amp; Neutral &amp; connect Stage 2 to Common</p>		<p>Stage 3: Apply Power to Live &amp; Neutral &amp; connect Stage 3 to Common</p>			
<p>Stage 1 Live IN Stage 1 Live OUT Stage 1 Neutral IN Stage 1 Neutral OUT Earth</p>		<p>Live IN Live OUT Neutral IN Neutral OUT Earth Common Stage 2 Stage 3</p>							
<p>DRAWN R.S. RAIT DATE 16/03/2021</p>		<p>CHECKED B. ISARD DATE 16/03/2021</p>		<p>APPROVED R.N. POTTS DATE 16/03/2021</p>		<p>SURFACE FINISH WEIGHT (kg)</p>		<p>MATERIAL</p>	
<p>DRAWING TO BS6888:2000 GEOMETRIC TOLERANCES TO ISO 1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS</p>		<p>ALERTALARM RANGE</p>		<p>ALTERNATIVE MATERIAL</p>		<p>THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER HEREIN IS COMMUNICATED CONFIDENTIAL AND IS THE PROPERTY OF EUROPEAN SAFETY SYSTEMS LTD. IT SHALL NOT BE DISCLOSED, LOANED, COPIED OR USED FOR MANUFACTURING OR TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT.</p>			
<p>STANDARDS</p>		<p>ALERTALARM RANGE</p>		<p>ALTERNATIVE MATERIAL</p>		<p>EUROPEAN SAFETY SYSTEMS LTD. AS PER LATEST DATE OF ISSUE SHOWN ABOVE</p>		<p>EUROPEAN SAFETY SYSTEMS LTD wiring signals ACTION LONDON W3 7QH MANSELL ROAD WWW.ESS.COM</p>	
<p>ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE</p>		<p>A3</p>		<p>TITLE AL112NX &amp; AL121X COMBINED SOUNDER &amp; XENON WIRING DIAGRAMS</p>		<p>SCALE NTS 1 OF 2</p>		<p>DRAWING NUMBER D221-06-205</p>	





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<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																											
<b>Independent Sounder &amp; Beacon Activation (Remove Link Wires)</b>																													
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STANDARDS ALERTALARM RANGE	CHECKED B.ISARD DATE 16/03/2021	ALTERNATIVE MATERIAL		EUROPEAN SAFETY SYSTEMS LTD ACTON LONDON W3 7QH WANSLEY ROAD WWW.E2S.COM		SCALE NTS	SHEET 2 OF 2	DRAWING NUMBER D221-06-205																					

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