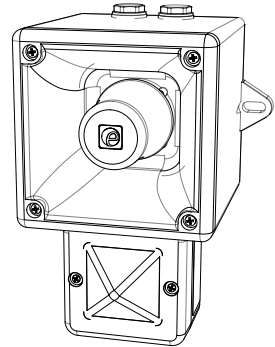


# INSTRUCTION & SERVICE MANUAL

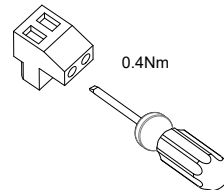
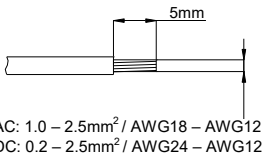
## AL105NH AlertAlight Combined Sounder LED Beacons

- -40°C to +66C (-40°F to 151°F)
- Type 4 / 4X / 3R / 13, IP66
- 1.8Kg (3.96lb)
- CE, All units UL Listed.



Unit Type Code	Nominal Voltage	Voltage Range	Nominal Sounder Current*	Nominal Beacon Current*	Nominal SPL	Max SPL	Average SPL
AL105NHDC024	#12 V dc	10-14Vdc	17mA	79.5mA	105.3dB(A) Tone 44 @ 1m	110.9dB(A) Tone 4 @ 1m	105.2dB(A) All tones @1m
	24V dc	16-33Vdc (Regulated)	33.5mA	87mA			
AL105NHDC048	48V dc	48-60Vdc	113mA	60mA			
AL105NHAC230	48V ac	48 - 260Vac 50/60Hz	42.5mA	60mA			
	115V ac		25mA	34mA			
	230V ac		17mA	19mA			

\*Nominal current at nominal voltage, Tone 12 / 1Hz Flash Pattern; #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 eletricista 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.

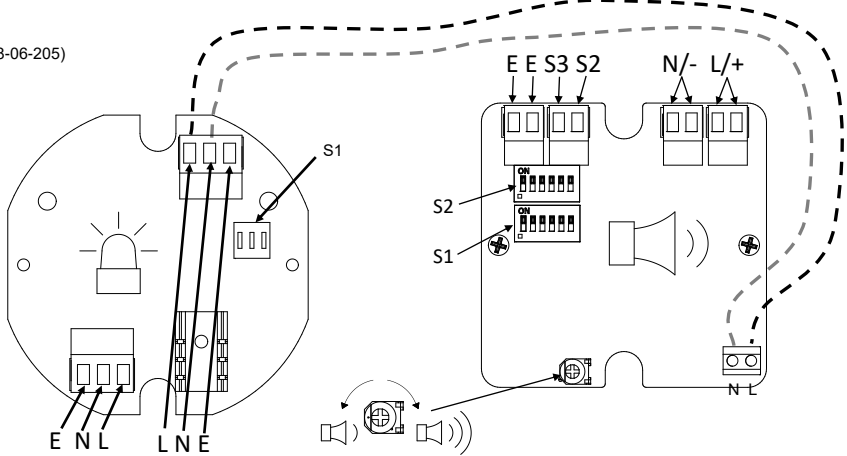
Atenção: Desconecte da fonte de alimentação antes da instalação ou serviço para evitar choque elétrico

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



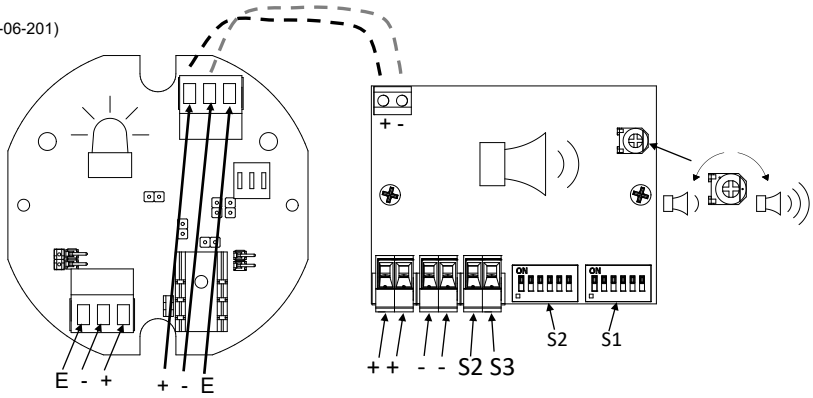
## AC

(See D218-06-205)



## DC

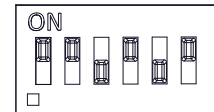
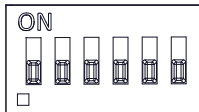
(See D218-06-201)



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

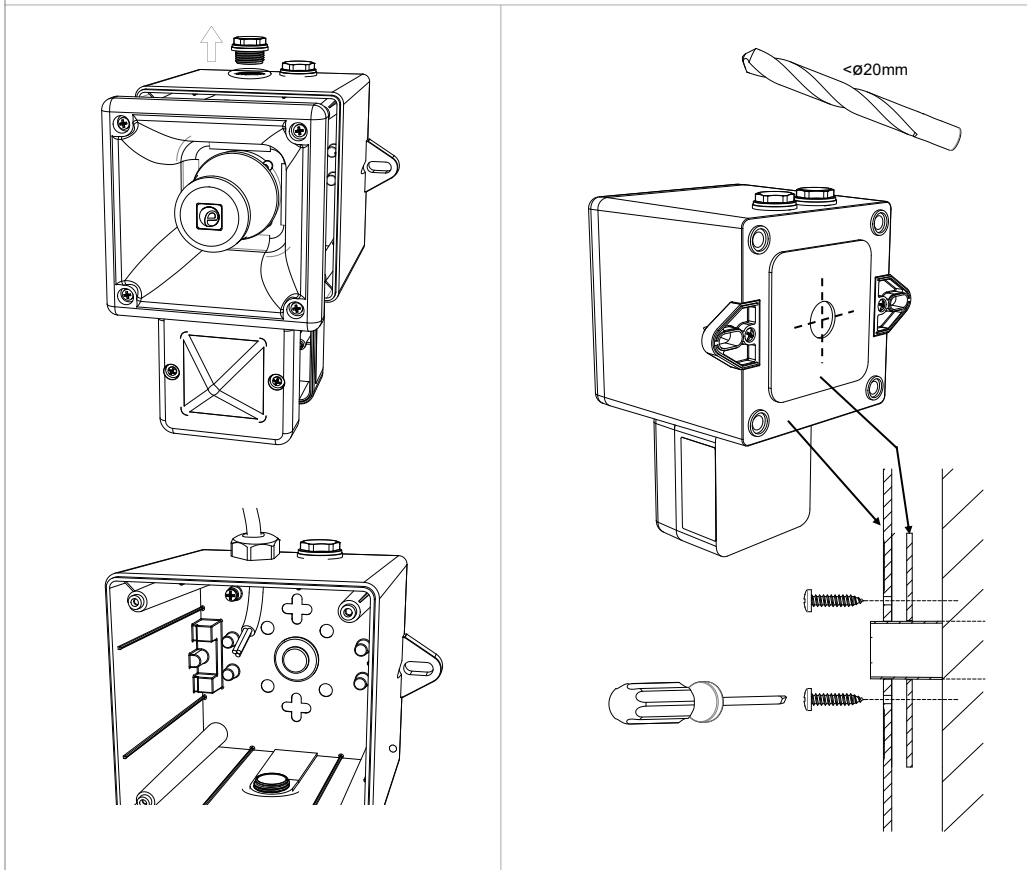
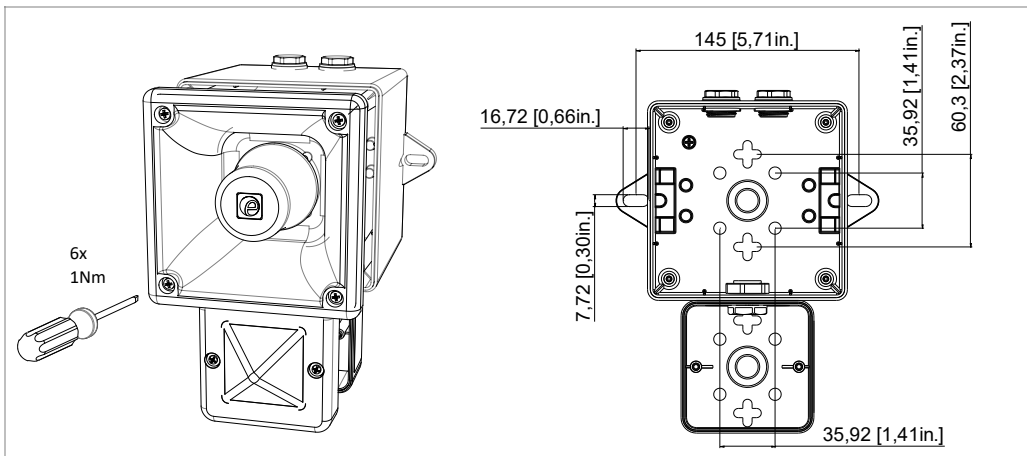
Default = S2 - Tone 1

Default = S1 - Tone 44



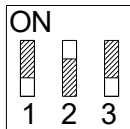
(ON = 1, OFF = 0)

INSTRUCTION & SERVICE MANUAL  
AL105NH AlertAlight Combined Sounder LED Beacons



### 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	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:

AL105NHDC: -40°C to +55°C / -40°F to +131°F

AL105NHAC: -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. 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



Model	Nominal Voltage	Voltage Range	Nominal Operating Current*		Max Operating RMS#	
			Beacon	Sounder	Beacon	Sounder
AL105NHDC024	12V dc	10-14Vdc	79.5mA	17mA	168mA	125mA
	24V dc	16-33Vdc (Regulated)	87mA	33.5mA	183mA	
AL105NHDC048	48V dc	48-60Vdc	60mA	113mA	115mA	
AL105NHAC230	48V ac	48 - 260Vac 50/60Hz	60mA	42.5mA	166mA	42.5mA
	115V ac		34mA	25mA		
	230V ac		19mA	17mA		

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

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# FIRE INSTRUCTION & SERVICE MANUAL

## AL105NH Range AlertAight Combined Sounder LED Beacons

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

#### Model: AL105NHDC



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

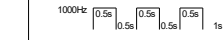


Attention: Disconnect from power source before installation or service to prevent electric shock / Débranchez-le de la source d'alimentation avant l'installation ou l'entretien pour éviter tout choc électrique.



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 ø7mm holes in the mounting lugs or through the back of the housing using the supplied gasket seal.
- AL105NHDC024 is approved for use as an Audible & Visual signal appliance for fire alarm use – Private Mode. (UL464 & CAN/ULC-S525 & UL1638).
- AL105NHDC024 produces a minimum sound pressure level of US: 79.97dB(A); CA: 91.2dB(A) at 10 feet, (figures @ worst case 10Vdc).
- AL105NHDC024 produces a minimum sound pressure level of US: 88.8dB(A); CA: 99.8dB(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
AL105NHDC024 (12Vdc Mode)	5.9	5.97	6.35
AL105NDC024 (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

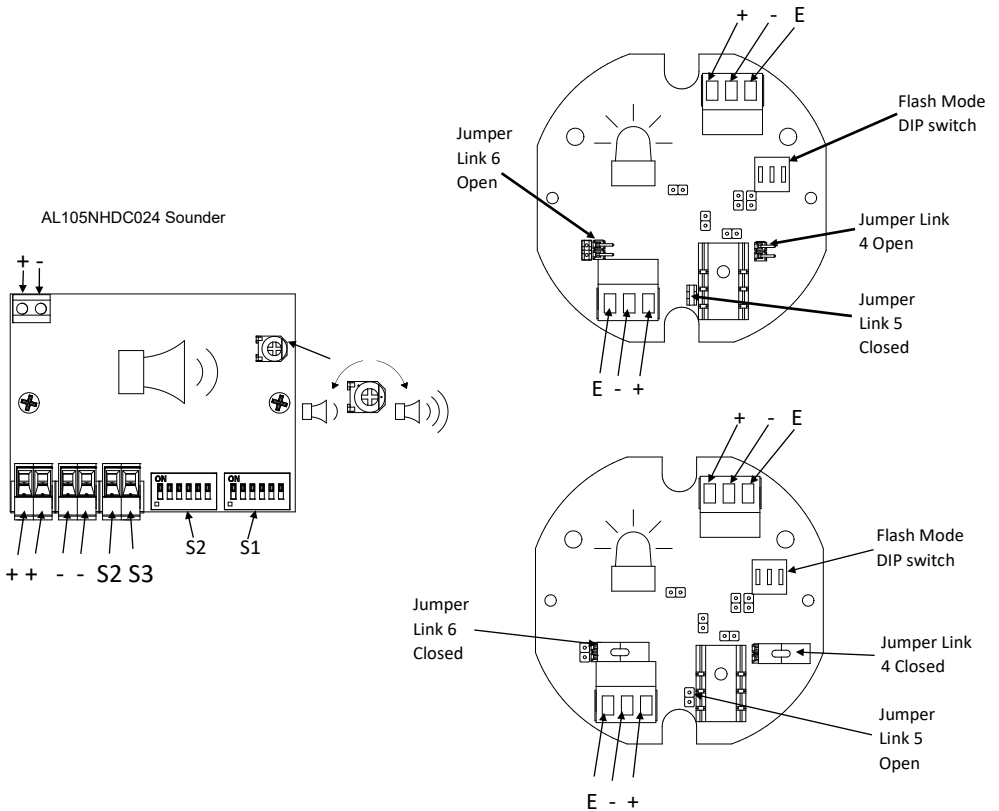
#### Surge current ratings for use in fire alarm systems

Model	Nominal Voltage	Voltage Range	Flash Rate	Initial Peak (mA)		Initial RMS (mA)	
				Beacon	Sounder	Beacon	Sounder
AL105NHDC024	12Vdc	10 to 14Vdc	1 Hz	202	298	172	56.4
			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		

AL105NHDC024 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°	101 dB(A)	Ref. 90°	101 dB(A)	Ref. 90°	100.9 dB(A)	Ref. 90°	100.9 dB(A)
113°	-3 dB(A)	67°	-3 dB(A)	113.5°	-3 dB(A)	64°	-3 dB(A)
125°/147°	-6 dB(A)	52°	-6 dB(A)	130°/148°	-6 dB(A)	47°	-6 dB(A)
180°	86.1 dB(A)	0°	86.1 dB(A)	180°	86.5 dB(A)	0°	86.1 dB(A)

AL105NHDC024 Beacon PCBA (24VDC Mode – Default Setting)



AL105NHDC024 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

A	ISSUE	MOD No	REASON	INITIAL	DATE
	A		INTRODUCTION	RSK	11/03/2021

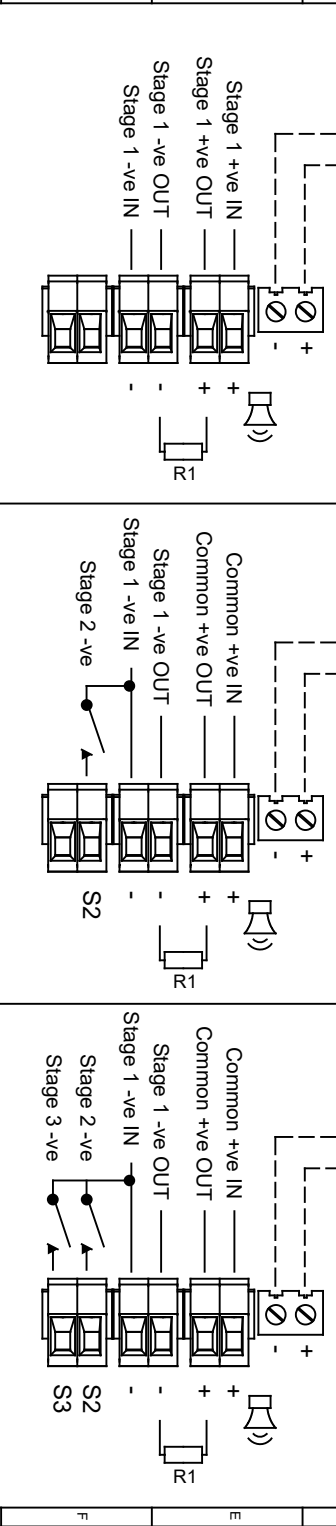
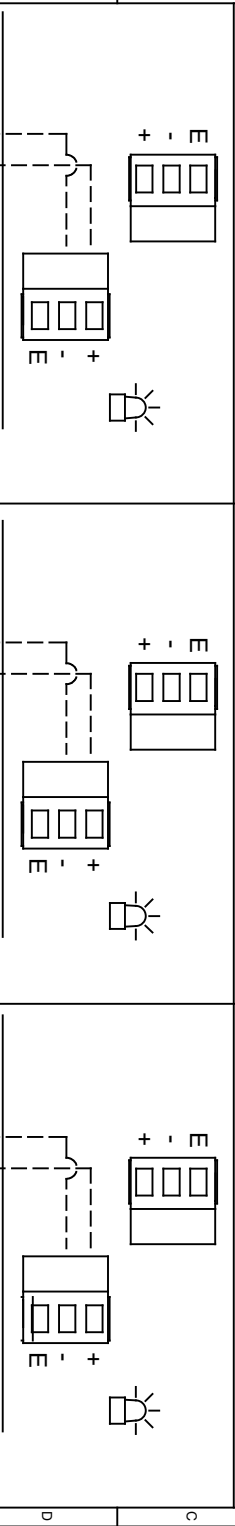
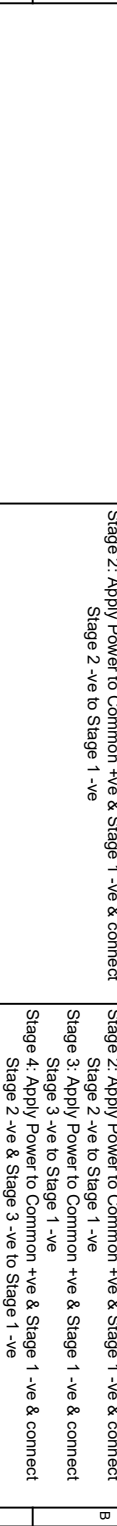
Linked Sounder & Beacon Activation (Default)



OPTIONAL LINE MONITORING RESISTOR. CUSTOMER SUPPLIED.  
RECOMMENDED MINIMUM VALUES:  
1.5V DC OR 1.5V MIN. 0.5W MIN.  
25V MAX SYSTEM = 4700 MIN. 2W MIN OR 24K OHM, 0.5W MIN

Single Stage Configuration	Config.: 1a	Two Stage Configuration	Config.: 1b	Three/Four Stage Configuration	Config.: 1c
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Line Monitoring  
Stage 1: Apply Power to Stage 1 +ve & Stage 1 -ve  
Common Positive  
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  
Common Positive  
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



G	DRAWING TO BE ISSUED TO ENHANCE TO ISO 1011:1983 GEOMETRIC TOLERANCES TO ISO 1011:1983 AND SURFACE FINISH TO ISO 1011:1983		DATE	16/03/2021	DESIGNED BY	R.S. RAIT	DATE	16/03/2021	CHECKED BY	B. ISARD	DATE	16/03/2021	APPROVED BY	R.N. POTTS	DATE	16/03/2021
	STANDARDS		ALTERNATIVE MATERIAL		MATERIAL		WEIGHT (KG)		THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER THEREIN IS UNLIMITED IN SCOPE AND EXTENT AND IS NOT TO BE LIMITED BY THE MANUFACTURING OR FINISHING PROCESSES WITHOUT THEIR MANUFACTURER'S OR FINISHER'S CONSENT. © ASPERLAW/ST DATE OF ISSUE SHOWN ABOVE						ALL DIMENSIONS IN MM IF IN QUOTE, RSK- DO NOT SCALE TITLE: AL100H, AL105NH & DL105H DC COMBINED SOUNDER & LED WIRING DIAGRAMS SCALE: 1 OF 2 SHEET: DRAWING NUMBER: D218-06-251	



1	2	3	4	5	6	7	8	9	10
							ISSUE	MOD No	REASON -INITIAL- DATE
							A	INTRODUCTION	RSR - 11/09/2021

OPTIONAL LINE MONITORING RESISTOR, CUSTOMER SUPPLIER, RECOMMENDED MINIMUM VALUES: 0R 10.0IN, 0.5V 10W, 28V MAX SYSTEM = 4700, MIN, 2W MIN OR 2.4KQ MIN, 0.5W 10W

Independent Sounder & Beacon Activation (Remove Link Wires)

<p><b>Single Stage Configuration</b> Line Monitoring Stage 1: Apply Power to Stage 1 -ve &amp; Stage 1 +ve</p>	<p><b>Two Stage Configuration</b> Common Positive Stage 1: Apply Power to Common +ve &amp; Stage 1 -ve Stage 2: Apply Power to Common +ve &amp; Stage 1 +ve &amp; connect Stage 2 -ve to Stage 1 -ve</p>	<p><b>Three/Four Stage Configuration</b> Common Positive Stage 1: Apply Power to Common +ve &amp; Stage 1 -ve Stage 2: Apply Power to Common +ve &amp; Stage 1 -ve &amp; connect Stage 2 -ve to Stage 1 -ve Stage 3: Apply Power to Common +ve &amp; Stage 1 -ve &amp; connect Stage 3 -ve to Stage 1 -ve Stage 4: Apply Power to Common +ve &amp; Stage 1 -ve &amp; connect Stage 2 -ve &amp; Stage 3 -ve to Stage 1 -ve</p>
<p><b>Config.: 5a</b></p>	<p><b>Config.: 5b</b></p>	<p><b>Config.: 5c</b></p>
<p><b>Config.: 5d</b></p>	<p><b>Config.: 5e</b></p>	<p><b>Config.: 5f</b></p>
<p><b>Config.: 5e</b></p>	<p><b>Config.: 5f</b></p>	<p><b>Config.: 5g</b></p>

<p>DRAWING TO BE ISSUED TO ENHANCE TO ISO 1011:1983 GEOMETRIC TOLERANCES TO ISO 11:1983 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>THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER THEREIN IS COMMUNICATED IN CONFIDENCE AND SYSTEMS DESIGNER'S PROPERTY. IT IS TO BE KEPT SECRET AND NOT TO BE REPRODUCED OR TRANSMITTED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF THE SYSTEMS DESIGNER. BY SIGNING THIS DRAWING YOU AGREE TO THESE TERMS AND CONDITIONS. APPROVED DATE 16/03/2021</p>
<p>STANDARDS ALERT/ALARM RANGE</p>	<p>CHECKED B. ISARD</p>	<p>DATE 16/03/2021</p>	<p>ALTERNATIVE MATERIAL</p>	<p>EUROPEAN SAFETY SYSTEMS LTD MANDEL ROAD LONDON W3 7QH WWW.ESS.CO.UK</p>	<p>ALL DIMENSIONS IN MM IF IN DOUBT ASK - DON'T SCALE</p> <p>TITLE AL100H AL105NH &amp; DL105H DC COMBINED SOUNDER &amp; LED WIRING DIAGRAMS</p> <p>SCALE SHEET NTS 2 OF 2</p> <p>DRAWING NUMBER D218-06-251</p>

ISSUE	MOD No	REASON - INITIAL - DATE
A		
INTRODUCTION		
RSK - 16/04/2021		

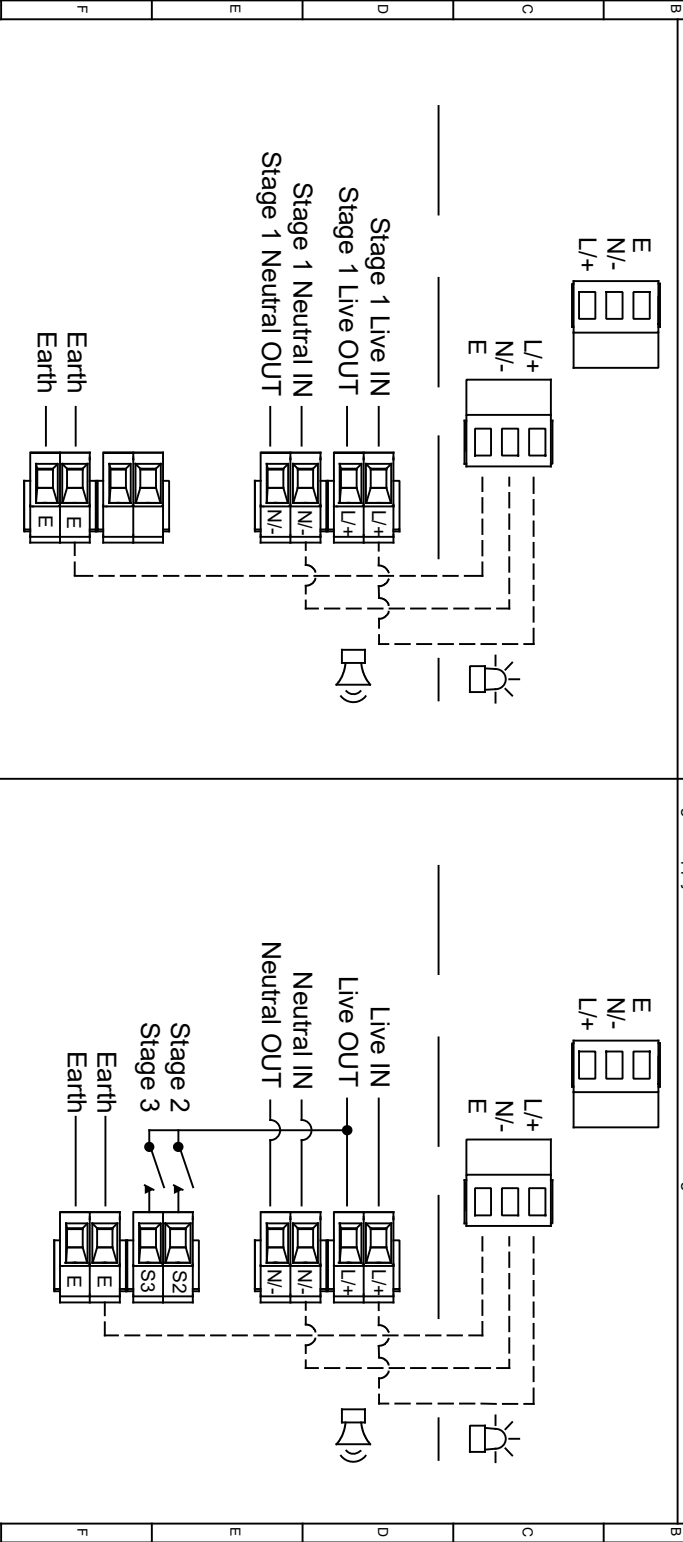


Linked Sounder & Beacon Activation (Default)

Single Stage Configuration Config.: 1a

Stage 1: Apply Power to Stage 1 Live & Stage 1 Neutral Config.: 1b

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



DRAWING TO BS8886:2000 GEOMETRIC TOLERANCES TO ISO1101:1983 ANGULAR DIMENSIONAL TOLS		DRAWN		DATE	SURFACE FINISH		WEIGHT (KG)	THIS DRAWING AND ANY INFORMATION OR DESCRIPTION MATTER THEREIN IS UNMAYNPOWERED IN CONNECTION WITH SYSTEMS ESTABLISHED UNDER THE HOLD OR ANY EXTRACOURT MAY MANUFACTURING OR TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT.		EUROPEAN SAFETY SYSTEMS LTD MANDEL ROAD LONDON W10 7QH WWW.ES5.COM	
STANDARDS		ALERT/ALARM RANGE	R.S. RAIT	16/03/2021	MATERIAL			BRIEF LATEST DATE OF ISSUE SHOWN ABOVE		ALL DIMENSIONS IN MM IF IN QUOTE 'RSK' DO NOT SCALE	
APPROVED		DATE	B.ISARD	16/03/2021	ALTERNATIVE MATERIAL			SCALE		TITLE AL100H, AL105NH & DL105H AC COMBINED SOUNDER & LED WIRING DIAGRAMS	
R.N.POTTS		16/03/2021						SHEET		DRAWING NUMBER	
								1 OF 2		D218-06-255	
								A3			

A	ISSUE MOD No	REASON - INITIAL - DATE
	A	INTRODUCTION RSK - 16/04/2021

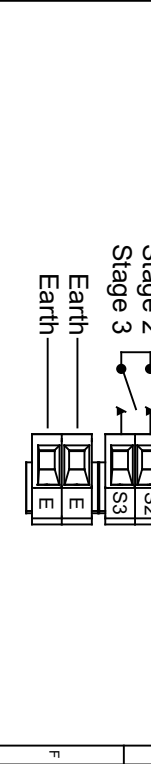
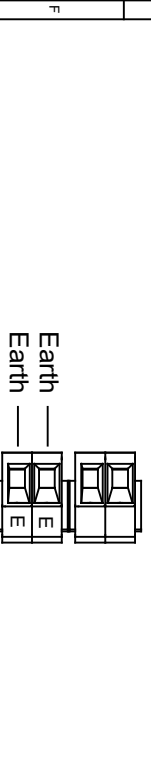
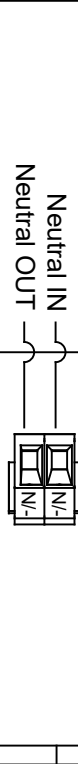
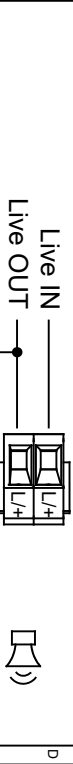
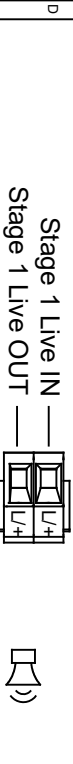
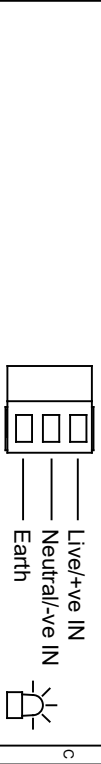
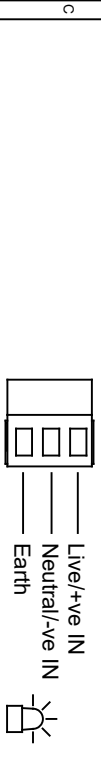
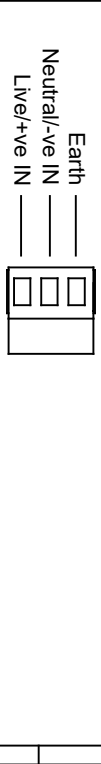
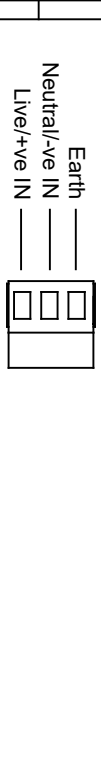


Independent Sounder & Beacon Activation (Remove Link Wires)

Single Stage Configuration Config.: 2a

Stage 1: Apply Power to Stage 1 Live & Stage 1 Neutral Config.: 2b

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



G	DRAWING TO BE ENHANCED TO ISO 11011:1983 GEOMETRIC TOLERANCES TO ISO 11011:1983 ANGULAR DIMENSIONAL TOLS		DATE	16/03/2021	SURFACE FINISH	WEIGHT (KG)	THIS DRAWING AND ANY INFORMATION OR DESCRIPTION MATTER THEREIN IS UNMAYNUTAINED IN COMPLIANCE WITH THE RELEVANT STANDARDS AND REGULATIONS AND SYSTEMS. THE USER ACCEPTS THE WHOLE OR ANY PART OF ANY SYSTEMS, INCLUDING THE DESIGN AND CONSTRUCTION, MAY MANUFACTURING OR TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT. RISK MANAGEMENT LTD ASPHER, LATEST DATE OF ISSUE SHOWN ABOVE	P2S wiring systems EUROPEAN SAFETY SYSTEMS LTD MANWELL ROAD LONDON W10 7QH WWW.P2S.COM	DATE	16/03/2021	APPROVED	DATE	16/03/2021	ALTERNATIVE MATERIAL	ALL DIMENSIONS IN MM IF IN QUOTE 'RSK' DO NOT SCALE		A3
	STANDARDS	ALERT/LARM RANGE	DRAWN	R.S. RAIT	CHECKED	B.ISARD			APPROVED	R.N.POTTS	SCALE	SHEET	DRAWING NUMBER	D218-06-255			

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 0	2	44
2	1200/500Hz @ 1Hz DIN /PFEER P.T.A.P.		1 0 0 0 0 0	3	44
3	1000Hz @ 0.5Hz(1s on, 1s off) 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 1 0 1 0 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 1 0 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 0 1 0 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