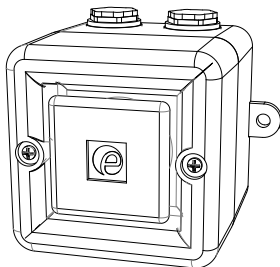


INSTRUCTION & SERVICE MANUAL

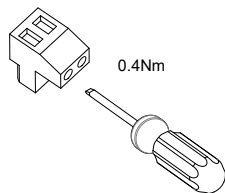
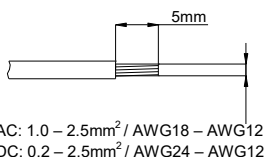
A100 AlertAlarm Sounder

- -40°C to +66C (-40°F to 151°F)
- Type 3R / 13, (IP66, Independently tested to EN60529:1991)
- 0.26Kg (0.57lb)
- CE, A100DC024 CPR compliant, All units UL Listed.



Unit Type Code	Nominal Voltage	Voltage Range	Nominal Current*	Nominal SPL	Max SPL	Average SPL
A100DC024	12 V dc	10-60Vdc	17mA	101.6dB(A) Tone 44 @ 1m	110dB(A) Tone 4 @ 1m	102.3dB(A) All tones @1m
	24V dc		33.5mA			
	48V dc		113mA			
A100AC230	48V ac	24 - 260Vac / 60-260Vdc	42mA	101.6dB(A) Tone 44 @ 1m	110dB(A) Tone 4 @ 1m	102.3dB(A) All tones @1m
	115V ac		25mA			
	230V ac		17mA			

*Nominal current at nominal voltage, Tone 1



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.

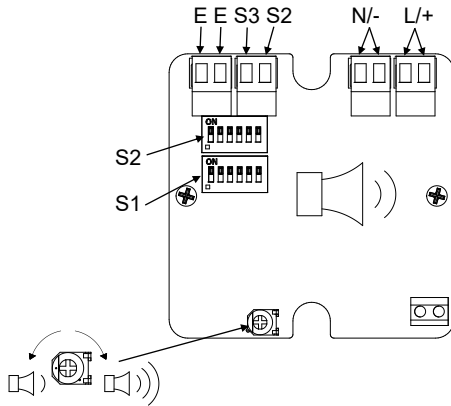
Atenção: Desconecte da fonte de alimentação antes da instalação ou serviço para evitar choque elétrico

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



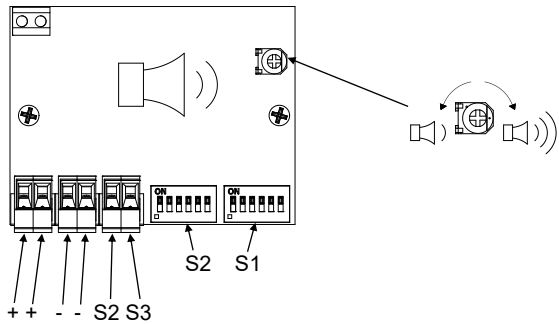
AC

(See D218-06-005)



DC

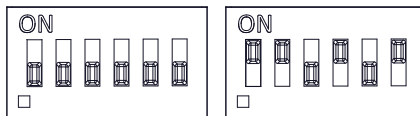
(See D218-06-001)



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

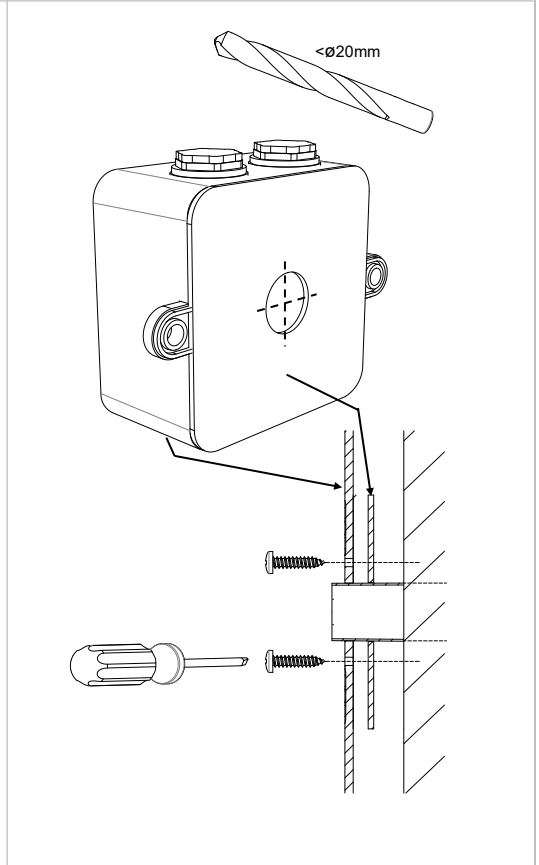
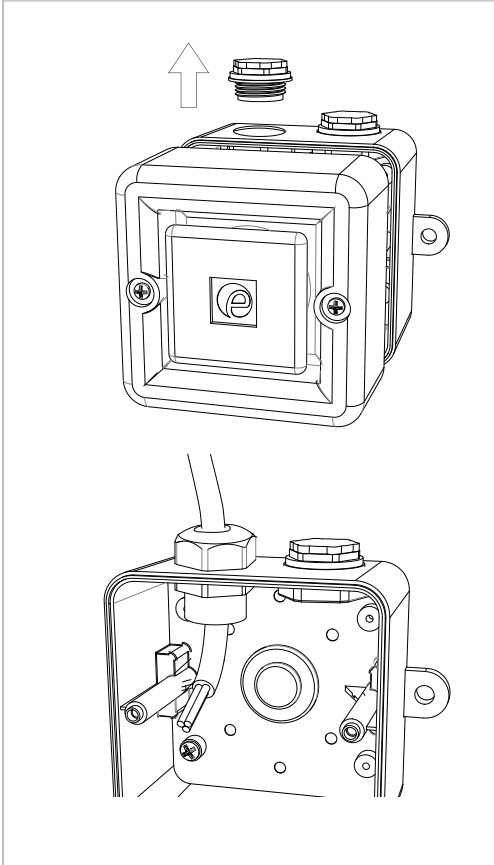
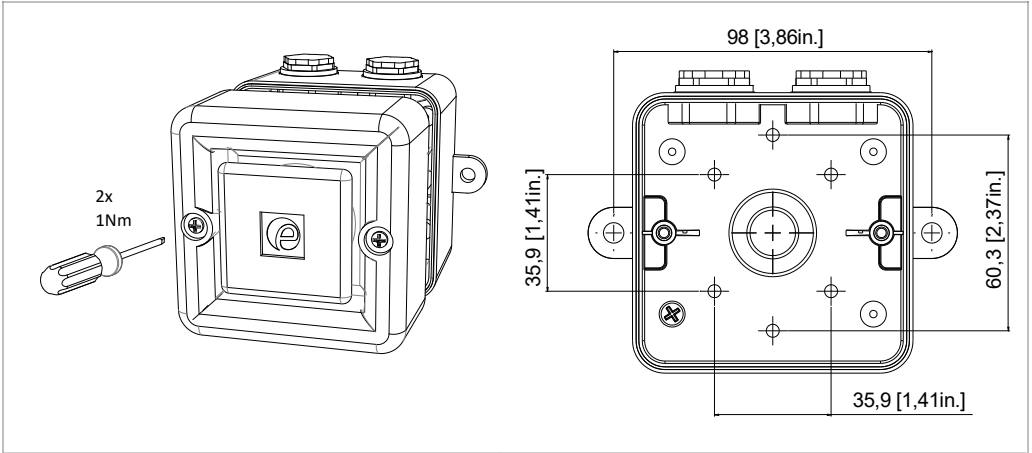
Default = S2 - Tone 1

Default = S1 - Tone 44



(ON = 1, OFF = 0)

INSTRUCTION & SERVICE MANUAL
A100 AlertAlarm Sounder



Construction Product Regulation

- A100DC024 is compliant to EN54-3:2001+A1+A2
- Alarm devices – Sounder for use in fire detection and fire alarm systems installed in and around buildings
- Type 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 ø6mm holes in the mounting lugs or through the back of the housing using the supplied gasket seal.

Order Code: A100DC024
 Voltage Range: 18-60Vdc
 Nominal Voltage: 24Vdc / 48Vdc
 Max Current: 125mA @ 60Vdc
 DP-2821-CPR-0107



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

A100DC024 @ 1m

Angle	Horizontal Sound Output Max Voltage (60 Vdc) LAFmax,T dB(A)						Horizontal Sound Output Min Voltage (18 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°	98	99.9	99	95.7	94.8	95.4	94.7	96.8	95.9	93	91.9	92.7
45°	97.8	100.1	99	97.6	94.7	96.6	95	97	96	94.8	92.1	94
75°	101.5	102.9	102.4	101.4	98.3	100.4	98.7	100.2	99.5	98.8	94.9	97.9
105°	101.4	102.8	102.5	101.4	98.1	100.4	98.6	100.2	99.5	98.8	94.9	97.9
135°	97.4	100	98.9	97.2	94.9	96.4	94.6	96.9	95.9	94.5	92.2	93.8
165°	97.5	99.6	98.9	95.8	94.7	95.4	94.3	96.4	95.8	93	91.8	92.8

Angle	Vertical Sound Output Max Voltage (60 Vdc) LAFmax,T dB(A)						Vertical Sound Output Min Voltage (18 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°	96.3	99.8	99	95.5	94.1	95.3	93.1	96.7	96	92.8	91.2	92.6
45°	97.6	99.9	98.8	97.4	94.5	96.3	94.8	96.8	95.7	94.6	91.9	93.8
75°	101.3	103	102.5	101.4	98.1	100.5	98.5	100.1	99.5	98.7	95	97.8
105°	101.3	102.8	102.4	101.3	98.2	100.5	98.5	100.1	99.5	98.7	95	97.7
135°	97.4	99.9	98.8	97.6	94.5	96.3	94.6	96.8	95.8	94.8	91.9	93.7
165°	96.7	100	99	95.5	93.9	95.4	93.6	96.9	96	92.7	91.1	92.7

INSTRUCTION & SERVICE MANUAL

A100 AlertAlarm Sounder

- All models are approved for use as Audible Signal Appliance for use as General Signaling: UL464A & CSA C22.2 No 205-17
- Type 3R / 13, (IP66 independently tested to EN60529:1991)
- -40°C to +66°C / -40°C to +151°F
 General Signaling Canada:
 A100DC024: -40°C to +55°C / -40°F to +131°F
 A100AC230: -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*
A100DC024	12V dc	10 - 60V ac	17mA	125mA
	24V dc		33.5mA	
	48V dc		113mA	
A100AC230	48V ac	24 - 260V ac 50/60Hz / 60-260V dc	42mA	42.5mA
	115V ac		25mA	
	230V ac		17mA	

*Max Operating current for worst-case input voltage; [#]Nominal current at nominal voltage and Tone 12

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

FIRE INSTRUCTION & SERVICE MANUAL
A100 Range AlertAlarm Sounder UL464 / CAN/ULC-S525
Model: A100DC



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 1, 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 ø6mm holes in the mounting lugs or through the back of the housing using the supplied gasket seal.
- A100DC024 is approved for use as an audible signal appliance for fire alarm use – Public Mode (UL464 & CAN/ULC-S525) and produces a minimum sound pressure level of US: 79.55dB(A); CA: 85.2dB(A) at 10 feet, (figures @ worst case 10Vdc).
- At 24Vdc the A100DC024 produces a minimum sound pressure level of US: 88.52dB(A); CA: 93.7dB(A) at 10 feet
- 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

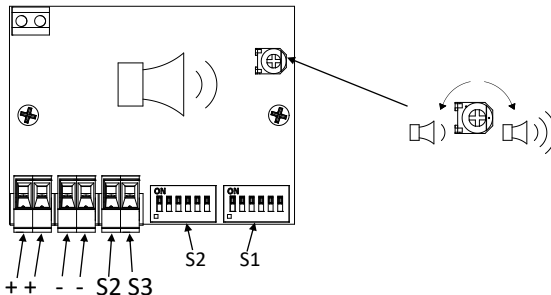
- Connection Terminals: Pluggable
 AC: 1.0 - 2.5mm² / AWG18 - AWG12
 DC: 0.2 - 2.5mm² / AWG24 - AWG12
- Terminal Tightening torque 0.4Nm
- To maintain Ingress Protection, cable entries must be fitted with suitably rated cable glands or stopping plugs
- Units can be located indoor or outdoor wet use, 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	Initial Peak	Initial RMS
A100DC024	24V dc	10 - 60V dc	298mA	56.4mA

A100DC024 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°	92.6 dB(A)	Ref. 90°	92.6 dB(A)	Ref. 90°	93 dB(A)	Ref. 90°	93 dB(A)
149°	-3 dB(A)	32°	-3 dB(A)	148°	-3 dB(A)	33°	-3 dB(A)
153°	-6 dB(A)	28°	-6 dB(A)	151.5°	-6 dB(A)	29°	-6 dB(A)
180°	87.2 dB(A)	0°	87 dB(A)	180°	87.2 dB(A)	0°	86.4 dB(A)



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

OPTIONAL LINE MONITORING RESISTOR, CUSTOMER SUPPLIED.
 RECOMMENDED MINIMUM VALUES:
 12V MAX SYSTEM = 470Ω MIN. 24V MIN. OR 4.6KΩ MIN. 0.5W MIN.
 28V MAX SYSTEM = 470Ω MIN. 24V MIN. OR 2.4KΩ MIN. 0.5W MIN.

Single Stage Configuration Config.: 1a

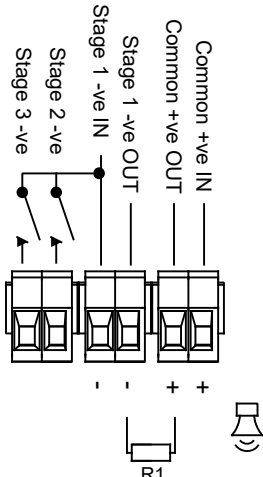
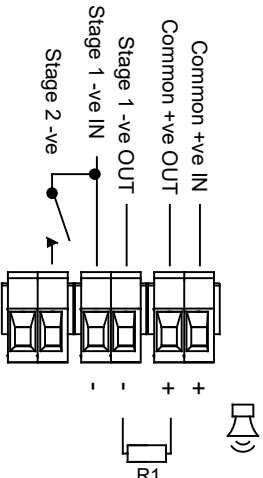
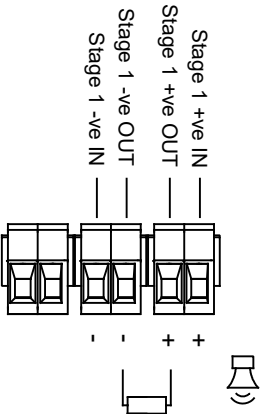
Line Monitoring Stage 1: Apply Power to Stage 1 +ve & Stage 1 -ve

Two Stage Configuration Config.: 1b

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

Three/Four Stage Configuration Config.: 1c

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



D	Stage 1 +ve IN	+	Common +ve IN	+	Common +ve IN	+
D	Stage 1 +ve OUT	+	Common +ve OUT	+	Common +ve OUT	+
D	Stage 1 -ve OUT	-	Stage 1 -ve OUT	-	Stage 1 -ve OUT	-
E	Stage 1 -ve IN	-	Stage 1 -ve IN	-	Stage 1 -ve IN	-

DRAWING TO BE ENRICHED TO ENHANCE TO ISO 11011:1983 AND IEC 61346 DIMENSIONAL TOLS		DRAWN		DATE		SURFACE FINISH		WEIGHT (KG)		THIS DRAWING AND ANY INFORMATION OR DESCRIPTION MATTER THEREIN IS UNMUTATED IN COMPLIANCE WITH THE EN ISO 15926-1:2013 AND EN ISO 15926-2:2013 SYSTEMS TO MEET THE HOLISTIC AND EXTENSIVE MANUFACTURING OR TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT. © ASPER/ LATEST DATE OF ISSUE SHOWN ABOVE		EUROPEAN SAFETY SYSTEMS LTD MANSFIELD ROAD LONDON W10 7QH WWW.ESS.CO.UK		ALL DIMENSIONS IN MM IF IN QUOTE ASK - DON'T SCALE		TITLE A100, A105N & D105 DC SOUNDER WIRING DIAGRAMS		DRAWING NUMBER D218-06-001	
STANDARDS		CHECKED		DATE		MATERIAL				BISARD		DATE		SCALE		SHEET			
ALERT/LARM RANGE		APPROVED		DATE		ALTERNATIVE MATERIAL				R.N.POTTS		DATE		1 OF 1					

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ISSUE

MOD No

REASON - INITIAL - DATE

A

INTRODUCTION
R/SR - 16/03/2021

SWITCHES FOR STAGE OPERATION
CUSTOMER SUPPLIED

Single Stage Configuration

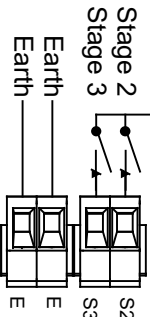
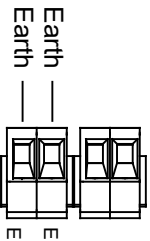
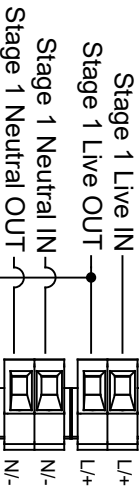
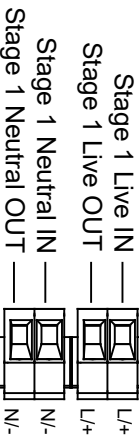
Stage 1: Apply Power to Stage 1 Live & Stage 1 Neutral

Config.: 1a

Three/Four Stage Configuration

Stage 1: Apply Power to Stage 1 Live & Stage 1 Neutral
Stage 2: Apply Power to Stage 1 Live & Stage 1 Neutral
& connect Stage 2 to Live
Stage 3: Apply Power to Stage 1 Live & Stage 1 Neutral
& connect Stage 3 to Live
Stage 4: Apply Power to Stage 1 Live & Stage 1 Neutral
& connect both Stage 2 & Stage 3 to Live

Config.: 1b



DRAWING TO BS8888:2000
GEOMETRIC TOLERANCES TO ISO1101:1983
DIMENSIONS UNLESS OTHERWISE SPECIFIED
ANGULAR DIMENSIONAL T.O.S

DRAWN

DATE

SURFACE FINISH

WEIGHT (Kg)

R.S.RAIF

16/03/2021

CHECKED

DATE

MATERIAL

B.ISARD

16/03/2021

APPROVED

DATE

ALTERNATIVE MATERIAL

R.N.POTTS

16/03/2021



ALL DIMENSIONS IN MM
F IN POINT ASK-
DONOT SCALE



A3

TITLE A100, A105N & D105 AC
WIRING DIAGRAMS

SCALE SHEET DRAWING NUMBER
NTS 1 OF 1 D218-06-005

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