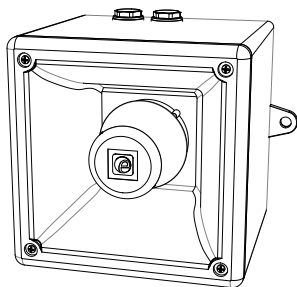


INSTRUCTION & SERVICE MANUAL

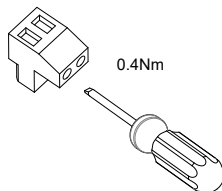
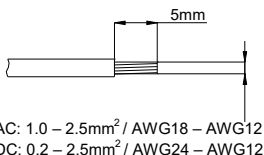
A112N AlertAlarm Sounder

- -40°C to +66°C (-40°F to 151°F)
- Type 4 / 4X / 3R / 13, IP66
- 1.8Kg (3.96lb)
- CE, UKCA, DNV, MED, MER, A112NXDC024 & A112NXDC048 CPR compliant
- All units UL Listed



Unit Type Code	Nominal Voltage	Voltage Range	Nominal Current* P1	Nominal Current* P2	Nominal SPL P1 / P2	Max SPL P1 / P2	Average SPL P1 / P2
A112NDC024	12 Vdc	11.5-54Vdc	280mA	376mA	113.7dB(A) / 116.6dB(A) Tone 44 @ 1m	115dB(A) / 118.4dB(A) Tone 4 @ 1m	110.8dB(A) / 114.8dB(A) All Tones @ 1m
	24 Vdc		225mA	430mA			
	48 Vdc		122mA	223mA			
A112NAC230	115 Vac	100-240Vac 50/60Hz	100mA	173mA			
	230 Vac		65mA	105mA			

*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 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.

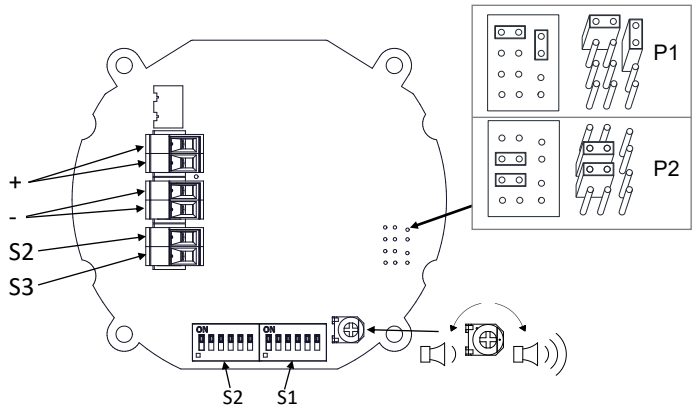
Atenção: Desconecte da fonte de alimentação antes da instalação ou serviço para evitar choque elétrico

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



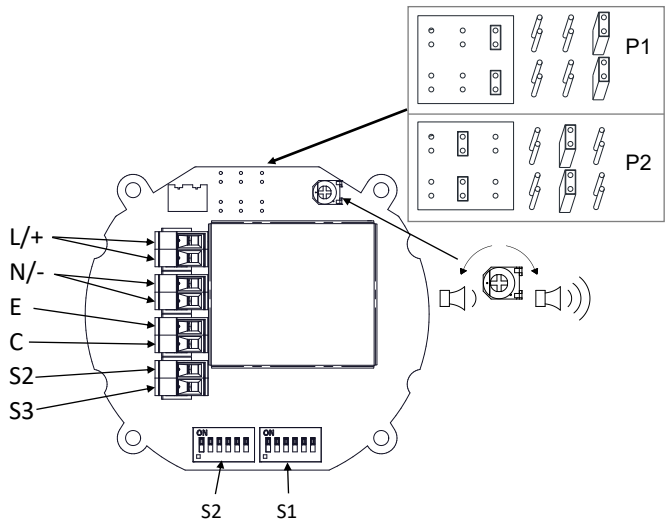
DC

See D221-06-001

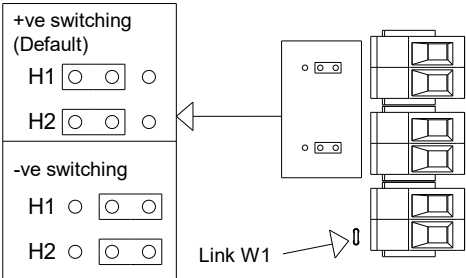


AC

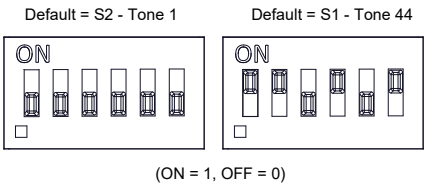
See D221-06-005



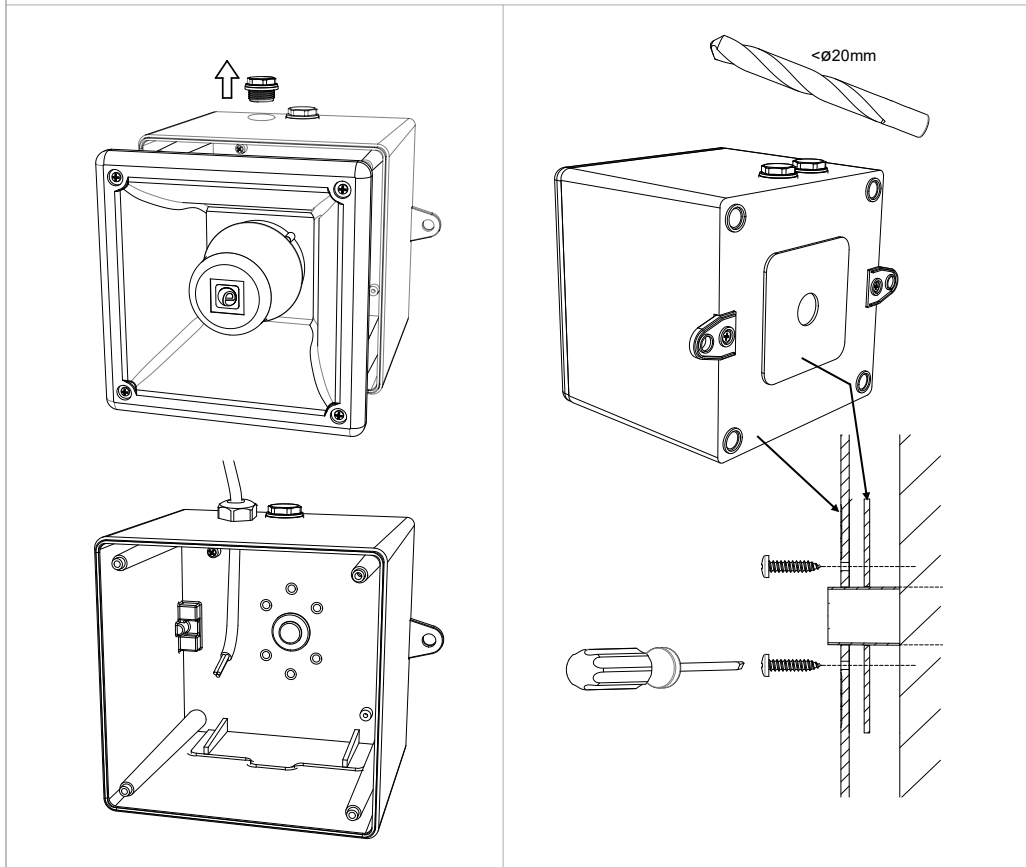
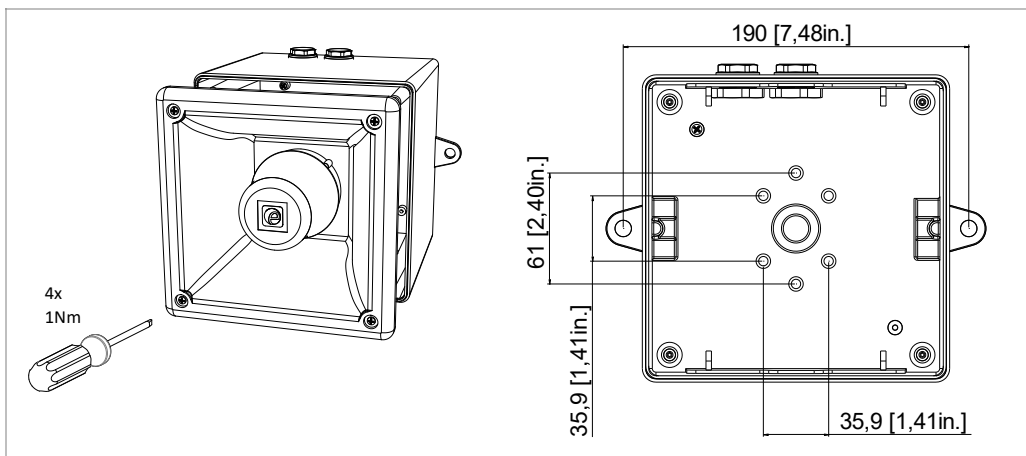
(DC Only, see D221-06-001)



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



(ON = 1, OFF = 0)



Construction Product Regulation

- A112NDC024 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 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: A112NDC024
Voltage Range: 11.5-54Vdc
Nominal Voltage: 24Vdc
Max Current: P1: 280mA @12Vdc;
P2: 430mA @24Vdc
DOP: DP-2821-CPR-0108
UKCA Cert: 0843-CPR-1006
EU Cert: 2821-CPR-0108



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

A112NDC024 (P2) @ 1m

	Horizontal Sound Output Max Voltage (54 Vdc) LAFmax,T dB(A)						Horizontal Sound Output Min Voltage (11.5 Vdc) LAFmax,T dB(A)					
Angle	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
	Vertical Sound Output Max Voltage (54 Vdc) LAFmax,T dB(A)						Vertical Sound Output Min Voltage (11.5 Vdc) LAFmax,T dB(A)					
Angle	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

A112XDC024 (P1) @ 1m

	Horizontal Sound Output Max Voltage (54 Vdc) LAFmax,T dB(A)						Horizontal Sound Output Min Voltage (11.5 Vdc) LAFmax,T dB(A)					
Angle	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°	103.3	103.7	103.1	103.3	103.2	91.5	101	101.5	100.9	101	100.3	89.4
45°	103.4	104.8	104.2	101.6	96.3	99.4	101.5	102.7	101.8	99.6	94.3	97.4
75°	109.1	110.4	109.7	109.6	108.3	103.2	107.1	108.2	107.4	107.7	105.9	101.4
105°	109.9	110.2	109.6	109.7	108.6	103	107.7	108.1	107.4	107.6	105.9	101.6
135°	103.4	104.8	104	101.8	96.5	99.4	101.1	102.8	101.7	99.6	94.5	97.4
165°	103.4	103.5	103	103.3	103	91.6	101	101.4	100.8	101.1	100.2	89.4
	Vertical Sound Output Max Voltage (54 Vdc) LAFmax,T dB(A)						Vertical Sound Output Min Voltage (11.5 Vdc) LAFmax,T dB(A)					
Angle	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°	104.1	104.1	103.2	104.1	102.3	92.3	101.8	101.8	100.8	101.8	100	90.4
45°	103.4	106.4	105.2	101.9	96.3	100.2	101.3	104.3	103.1	99.7	94.1	98.2
75°	109.8	110.1	109.8	110.4	108.3	103.2	107.7	107.8	107.7	108.4	106.2	101.4
105°	109.1	109.9	109.5	110	108.3	102.9	106.9	107.7	107.1	107.6	105.7	101.3
135°	101.1	106.4	104.7	101.8	96.6	101	100.6	104.1	102.3	99.6	94.5	99.1
165°	103.6	103.1	102.8	103.6	102.8	91.8	101.2	100.9	100.7	101.4	99.8	89.8

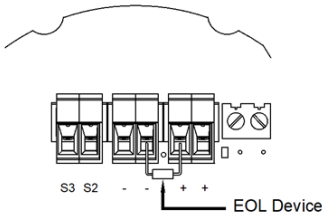
INSTRUCTION & SERVICE MANUAL

A112N 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 4 / 4X / 3R / 13, IP66
 - -40°C to +66°C / -40°C to +151°F
- General Signaling Canada:
- A112NDC024: -40°C to +55°C / -40°F to +131°F
- A112NAC230: -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	P1 Nominal Operating Current [#]	P2 Nominal Operating Current [#]	P1 Max Operating RMS [*]	P2 Max Operating RMS [*]
A112NDC024	12V dc	11.5 - 54V Dc	280mA	376mA	280mA	430mA
	24V dc		225mA	430mA		
	48V dc		122mA	223mA		
A112NAC230	115V ac	100- 240V ac 50/60Hz	100mA	173mA	101mA	181mA
	230V ac		65mA	105mA		

^{*}Max Operating current for worst-case input voltage; Nominal current at nominal voltage and Tone 44

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



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SIL 2 Reliability Data

Reliability and Functional safety IEC/EN61508 which has been assessed and is considered suitable for use in low demand safety function:

1. Random Hardware Failures and Systematic Failures and (route 2_H).
2. As an unvoted item (i.e. hardware fault tolerance of 0) at SIL 2.
The product was assessed against failure modes:
 - Failure sound or annunciate
3. When employing the device in a SIL2 compliant system the user should ensure frequent or continuous automatic monitoring of continuity and current draw, refer to specific model nominal current draw data.

Integrity in respect of failure to function	SIL2 & SIL1
Total Failure rate	0.55 pmh
"Hazardous" failure rate (revealed)	0 pmh
"Hazardous" failure rate (unrevealed)	0.55 pmh
"Safe" failure rate (revealed)	0 pmh
"Safe" failure rate (unrevealed)	0 pmh
System type	B
Hardware Fault Tolerance	0
Diagnostic Coverage	>80%
PFD (hazardous failure)	2.4×10^{-3}
Proof Test Interval	Up to 1 year

FIRE INSTRUCTION & SERVICE MANUAL

A112N Range AlertAlarm Sounder UL464 / CAN/ULC-S525

Model: A112NDC



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.
- A112NDC024 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 P1: US: 93.37dB(A); CA: 101.6dB(A) / P2: US: 94.64dB(A); CA: 103.9dB(A) at 10 feet, (figures @ worst case 11.5Vdc).
- A112NDC024 produces a minimum sound pressure level of P1: US: 95.6dB(A); CA: 104.3dB(A) / P2: US: 98.55dB(A); CA: 107.6dB(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

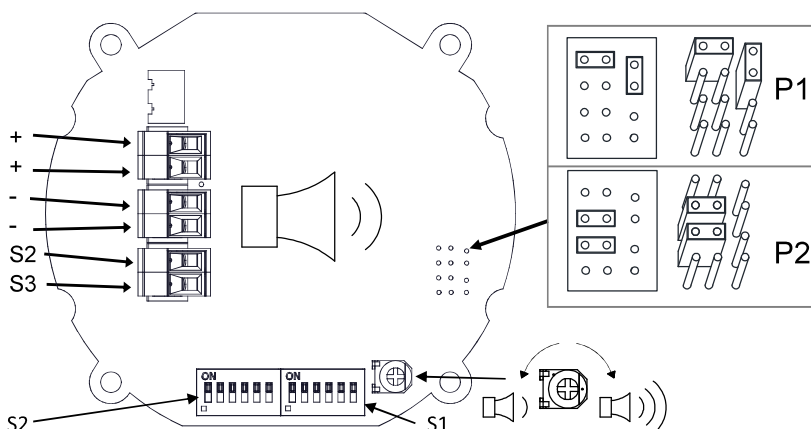
- Connection Terminals: Pluggable
AC: 1.0 - 2.5mm² / AWG18 - AWG12
DC: 0.2 - 2.5mm² / AWG24 - AWG12
- Terminal Tightening torque 0.4Nm
- To maintain Ingress Protection, cable entries must be fitted with suitably rated cable glands or stopping plugs
- Units can be located indoor or outdoor wet use, wall or ceiling mounted and there are no limitations on orientation
- Factory finishes are not intended to be modified

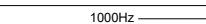
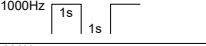
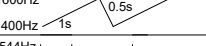
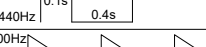
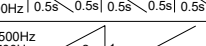
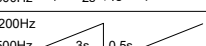
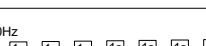
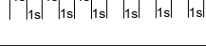
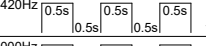
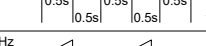
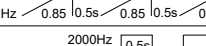
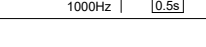
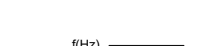
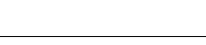
Surge Current Ratings for use in fire alarm systems

Model	Nominal Voltage	Voltage Range	Initial Peak	Initial RMS
A112NDC024	24V dc	11.5 - 54V dc	P1: 1455mA / P2: 1164mA	P1: 140mA / P2: 286mA

A112NDC024 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°	103.7 dB(A)	Ref. 90°	103.7 dB(A)	Ref. 90°	103.8 dB(A)	Ref. 90°	103.78dB(A)
129°	-3 dB(A)	49°	-3 dB(A)	126°	-3 dB(A)	49°	-3 dB(A)
131°	-6 dB(A)	39°	-6 dB(A)	140°	-6 dB(A)	40°	-6 dB(A)
180°	92.6 dB(A)	0°	91.2 dB(A)	180°	92.5 dB(A)	0°	90.8 dB(A)



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, 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	35
16	440Hz Continuous (f=440)		1 1 1 1 0 0	24	35
17	470Hz Continuous (f=470)		0 0 0 0 1 0	24	35
18	500Hz Continuous IMO code 2 (Low) (f=500)		1 0 0 0 1 0	24	35
19	554Hz Continuous (f=554)		0 1 0 0 1 0	24	35
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	44	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	8
35	1000Hz @ 1Hz Intermittent (f=1000, a=0.5, b=0.5)		0 1 0 0 0 1	24	8
36	2400Hz @ 1Hz Intermittent (f=2400, a=0.5, b=0.5)		1 1 0 0 0 1	24	8
37	2900Hz @ 5Hz Intermittent (f=2900, a=0.1, b=0.1)		0 0 1 0 0 1	24	8
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

A	1	2	3	4	5	6	7	8	9	10	A	
	R1 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							ISSUE	MOD No.	REASON - INITIAL - DATE		
								A		INTRODUCTION RSR - 11/05/2021		
								B		PRODUCT OPTIONS K & Y NAMED RSR - 07/07/2022		
								C	ACN0151	PRODUCT OPTION K DETAILS ADDED		
B	Single Stage Configuration			Config.: 1a	Two Stage Configuration			Config.: 1b	Three/Four Stage Configuration		Config.: 1c	
	Line Monitoring 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 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					
C	Stage 1 +ve IN Stage 1 +ve OUT Stage 1 -ve IN Stage 1 -ve OUT + + - - R1			Stage 1 +ve IN Stage 1 +ve OUT Common -ve IN Common -ve OUT Stage 2 +ve + + - - R1 S2			Stage 1 +ve IN Stage 1 +ve OUT Common -ve IN Common -ve OUT Stage 2 +ve Stage 3 +ve + + - - R1 S2 S3					C
D												D
E												E
F												F
G	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)	</					

A	1	2	3	4	5	6	7	8	9	10	A												
	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		INTRODUCTION RSR - 11/05/2021													
								B		PRODUCT OPTIONS K & Y NAMED RSR - 07/07/2022													
								C	ACN0151	PRODUCT OPTION K DETAILS ADDED RSR - 10/06/2024													
B	Three/Four Stages. Voltage Free 2nd, 3rd & 4th Stage Activation Configuration					Config.: 2		Two Stage Configuration				Config.: 3											
	Common Positive Customer Set H1 & H2 to Negative Switching (See Below)					Independent Stage Input Reverse Polarity Stage Monitoring																	
	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					Stage 1: Apply Power to Stage 1 +ve & Stage 1 -ve Stage 2: Apply Power to Stage 1 +ve & Stage 1 -ve & connect Stage 2 -ve to Stage 1 -ve																	
C	Common +ve IN Common +ve OUT Stage 1 -ve OUT Stage 1 -ve IN Stage 2 -ve Stage 3 -ve											C											
D	Stage 1 +ve Stage 1 -ve Stage 2 -ve Stage 2 +ve											D											
E	Set H1 & H2 to -ve switching											E											
F	Set H1 & H2 to -ve switching											F											
G	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)		THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER THEREIN IS COMMUNICATED IN CONFIDENCE AND 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 TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT.		 EUROPEAN SAFETY SYSTEMS LTD IMPRESS HOUSE MANSELL ROAD ACTON LONDON W3 7QH WWW.E2S.COM		ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE				A3		G		
			CHECKED B.ISARD		DATE 16/03/2021		MATERIAL								TITLE A112N & A121 DC SOUNDER WIRING DIAGRAMS								
	STANDARDS ALERTALARM RANGE		APPROVED R.N.POTTS		DATE 16/03/2021		ALTERNATIVE MATERIAL								SCALE NTS	SHEET 2 OF 3	DRAWING NUMBER D221-06-001						

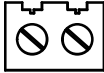
										8		9		10	
										ISSUE	MOD No.	REASON - INITIAL - DATE			
										A		INTRODUCTION RSR - 11/05/2021			
										B		PRODUCT OPTIONS K & Y NAMED RSR - 07/07/2022			
										C	ACN0151	PRODUCT OPTION K DETAILS ADDED RSR - 10/06/2024			
Two Stage Configuration				Config.: 4		Two/Three Stage Voltage Free Activation Configuration				Config.: 5					
Independent power input for alarm stage activation. Line monitoring available for Stage 1 & 2 alarm stage. Line monitoring requires common negative between each power input. Line monitoring maximum voltage: 4Vdc.						Customer Set H1 & H2 to Negative Switching (See Below)									
Not to be used for reverse polarity line monitoring. Stage 1: Apply Power to Stage 1 +ve & Stage 1 -ve Stage 2: Apply Power to Stage 2 +ve & Stage 2 -ve						Power: +ve & -ve Stage 1: Connect Stage 1 -ve to Common -ve Stage 2: Connect Stage 2 -ve to Common -ve Stage 3: Connect both Stage 1 -ve & Stage 2 -ve to Common -ve									
Stage 1 +ve Stage 1 -ve Stage 2 +ve Stage 2 -ve <															

										ISSUE		MOD No.		REASON - INITIAL - DATE	
										A				INTRODUCTION RSR - 16/03/2021	
										B				PRODUCT OPTION K NAMED RSR - 07/07/2022	



SWITCHES FOR STAGE OPERATION
CUSTOMER SUPPLIED

Single Stage Configuration		Config.: 1a	Three/Four Stage Configuration		Config.: 1b	Two Stage Voltage Free Activation Configuration		Config.: 2
Stage 1: Apply Power to Stage 1 Live & Stage 1 Neutral			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 Stage 4: Apply Power to Live & Neutral & connect both Stage 2 & Stage 3 to Common			Power: Live & Neutral Stage 1: Connect Stage 1 to Common Stage 2: Connect Stage 2 to Common Stage 3: Connect both Stage 1 & Stage 2 to Common		



Stage 1 Live IN

Stage 1 Live OUT

Stage 1 Neutral IN

Stage 1 Neutral OUT

Earth

L

L

N

N

E





Live IN

Live OUT

Neutral IN

Neutral OUT

Earth

Common

Stage 2

Stage 3

L

L

N

N

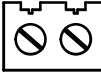
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C

S2

S3





Live IN

Live OUT

Neutral IN

Neutral OUT

Earth

Common

Stage 1

Stage 2

L

L

N

N

E

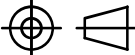
C

S1

S2



CUSTOM
CONFIGURATION
PRODUCT
OPTION 'K'

DRAWING TO BS8888:2000 GEOMETRIC TOLERANCES TO ISO1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS	DRAWN	DATE	SURFACE FINISH	WEIGHT (Kg)	THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER THEREIN IS COMMUNICATED IN CONFIDENCE AND 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 TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT. © EUROPEAN SAFETY SYSTEMS LTD. AS PER LATEST DATE OF ISSUE SHOWN ABOVE	 EUROPEAN SAFETY SYSTEMS LTD IMPRESS HOUSE MANSELL ROAD ACTON LONDON W3 7QH WWW.E2S.COM	ALL DIMENSIONS IN MM			A3
	R.S.RAIT	16/03/2021					IF IN DOUBT, ASK - DO NOT SCALE			
	CHECKED	DATE	MATERIAL				TITLE A112N & A121 AC WIRING DIAGRAMS			
	B.ISARD	16/03/2021								
STANDARDS	APPROVED	DATE	ALTERNATIVE MATERIAL		SCALE	SHEET	DRAWING NUMBER			
ALERTALARM RANGE	R.N.POTTS	16/03/2021			NTS	1 OF 1	D221-06-005			