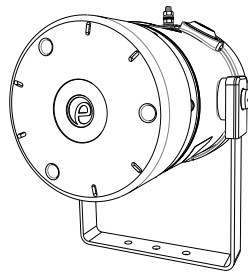


# INSTRUCTION MANUAL

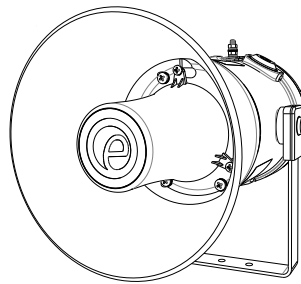
**D1xS1**

**Alarm Horn Sounder**

**Class II/III, Zone 20**



**D1xS1R**



**D1xS1F**

## 1) Product Table

Unit Type Code	Nominal Input Voltage	Nominal Input Current	Voltage Range	Sound Pressure Level dB(A)	
				Max*	Nom <sup>†</sup>
D1xS1RDC024-D	12Vdc	221mA	11.5-54Vdc	94	90
	24Vdc	185mA			
	48Vdc	115mA			
D1xS1RAC230-D	115Vac	73mA	100-240Vac 50/60Hz	94	90
	230Vac	48mA			
D1xS1FDC024-D	12Vdc	221mA	11.5-54Vdc	98	94
	24Vdc	185mA			
	48Vdc	115mA			
D1xS1FAC230-D	115Vac	73mA	100-240Vac 50/60Hz	98	94
	230Vac	48mA			

\*Max = Tone 4  
†Nom. = Tone 44

The table shows the input current taken by the various sounders.  
The current levels shown above are for the 440Hz Continuous tone @ nominal input voltage.  
Nominal current at nominal voltage.

Table 1: Electrical Ratings.

## 2) Warnings



### CAUTION

TO REDUCE THE RISK OF IGNITION OF HAZARDOUS ATMOSPHERES:

DISCONNECT FROM SUPPLY BEFORE OPENING.

KEEP TIGHTLY CLOSED WHEN IN OPERATION.

### WARNING

FIT SEALING FITTING IN CONDUIT RUNS WITHIN 18 INCHES FROM ENCLOSURE.

EQUIPMENT MUST NOT BE INSTALLED WITH THE HORN FACING UPWARDS OF HORIZONTAL

DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT

DO NOT OPEN WHEN ENERGISED

POTENTIAL ELECTROSTATIC CHARGING HAZARD - CLEAN ONLY WITH A DAMP CLOTH

ENCLOSURE ENTRIES: TWIN M20 X 1.5 / SINGLE 1/2" NPT

ATEX/IECEx INSTALLATIONS: IF TEMPERATURE EXCEEDS 70°C AT ENTRY OR 80°C AT BRANCHING POINT USE SUITABLE RATED CABLE AND GLANDS

### ATTENTION

POUR REDUIRE LE RISQUE D'INFLAMMATION DES ATMOSPHERES DANGEREUSES :

COUPER L'ALIMENTATION AVANT OUVERTURE.

CONSERVER FERMÉ PENDANT LE FONCTIONNEMENT.

### AVERTISSEMENT

CONDUITS DOIVENT ETRE SCELLES EN MOINS DE 18 POUCHES. ÉQUIPEMENT NE DOIT PAS ETRE INSTALLE AVEC LE KLAXON

TOURNEE VERS LE HAUT DE HORIZONTAL.

NE PAS OUVRIR UN PRESENCE D'ATMOSPHERE EXPLOSIVE

NE PAS OUVRIR ENERGIE

DANGER POTENTIEL CHARGE ÉLECTROSTATIQUE - NETTOYER UNIQUEMENT AVEC UN CHIFFON HUMIDE

ENTRÉES DE BOÎTIER: 2 x M20 X 1.5 / 1 x 1/2" NPT

ATEX/IECEx INSTALLATIONS: SI LA TEMPÉRATURE DÉPASSE 70 °C À L'ENTRÉE OU 80 °C AU POINT DE BRANCHEMENT,

UTILISER UN CÂBLE ET DES JOINTS D'ÉTANCHÉITÉ APPROPRIÉS

### 3) Marking & Rating Information

The D1xS1 Alarm Horns comply with the following standards for hazardous locations:

#### 3.1 Class/Division Ratings for US & Canada

Standards	
Class I UL 1203 & CSA C22.2 No 25-1966	
Class Division Ratings for US (NEC)	
Model No:	Rating
D1xS1-DC024-D / D1xS1-AC230-D	Class II Div 1 FG T6 Ta -55°C to +70°C Class III Div 1 Ta -55°C to +70°C
Class Division Ratings for Canada (CEC)	
Model No:	Rating
D1xS1-DC024-D	Class II Div 1 FG T6 Ta -55°C to +70°C Class III Div 1 Ta -55°C to +70°C
D1xS1-AC230-D	Class II Div 1 FG T6 Ta -55°C to +40°C Class III Div 1 Ta -55°C to +40°C
Class Zone Ratings for US (NEC)	
Model No:	Rating
D1xS1-DC024-D / D1xS1-AC230-D	Class II Zone 20 IIIB T6 Ta -55°C to +70°C
Class Zone Ratings for Canada (CEC)	
Model No:	Rating
D1xS1-DC024-D	Class II Zone 20 IIIB T6 Ta -55°C to +70°C
D1xS1-AC230-D	Class II Zone 20 IIIB T6 Ta -55°C to +40°C
Installation must be carried out in compliance with the National Electric Code / Canadian Electric Code	
Ambient Temperature Range	
-55°C to +70°C (-67°F to +158°F)	
IP Rating	
IP66 to EN60529 4 / 4X / 3R / 13 to UL50E / NEMA250	

### 4) Special Conditions for Safe Use

To access the Ex d chamber, loosen the M4 grub screw on the sounder cover. Open the enclosure by turning the sounder cover counterclockwise and remove the cover.

Electrical connections are to be made into the terminal blocks on the PCBA, using solid wire 0.5-4mm<sup>2</sup> / AWG 20-12 or stranded wire, sizes 0.5-2.5mm<sup>2</sup> / AWG 24-14. Wire insulation needs to be stripped 8mm. Wires may be fitted securely with crimped ferrules. Terminal screws need to be tightened down with a tightening torque of 0.45 Nm / 3.5 Lb-in.

Internal earthing connections should be made to the Internal Earth terminal in the base of the housing using a ring crimp terminal to secure the earth conductor under the earth clamp. The earth conductor should be at least equal in size and rating to the incoming power conductors but at least a minimum of 0.82mm<sup>2</sup> / 18AWG in size.

External earthing connections should be made to the M5 earth stud, using a ring crimp terminal to secure the earth conductor to the earth stud. The external earth conductor should be at least 4mm<sup>2</sup> in size.

On completion of the installation the flameproof threaded joint should be inspected to ensure that they are clean and that they have not been damaged during installation.

Ensure the O-ring seal is in place and undamaged.

When fitting the flameproof cover ensure the thread is engaged correctly. Fully tighten the cover all the way, ensure no gap is visible between the cover and base of the sounder enclosure.

The cable entries have two M20 x 1.5 – 6H entry thread and a single ½” NPT thread. If the installation is made using cable glands, only suitably rated and certified cable glands must be used. They must be suitable for the type of cable being used and also meet the requirements of the current installation standards EN 60079-14 / IEC60079-14.

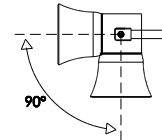
If the installation is made using conduit, openings must have a sealing fitting connected within 18” of enclosure.

Any unused cable entries must be closed with suitably rated and certified blanking plugs.

The plastic horn is not anti-static and the metallic enclosure has a non-conductive coating. These may generate an ignition-capable level of electrostatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions that might cause a build-up of electrostatic charges on non-conducting surfaces.

Repair of the flameproof threaded joints and cemented joints is not permitted.

The Equipment must not be installed with the horn facing upwards of horizontal.



Only the explosionproof cover is to be used for access to the enclosure for installation, service and maintenance.

## 5) Product Mounting and Access

### 5.1 Mounting

The D1x Alarm Horn may be secured to any flat surface using at least two of the three or four 7mm fixing holes. The enclosure provides IP66 protection and is suitable for installation in exterior locations providing it is positioned so that water cannot collect in the horn, and the cable entry is sealed.

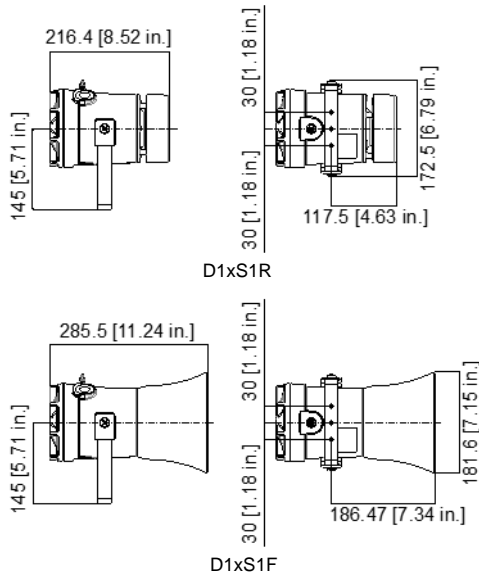


Fig 1: Mounting Locations

### 5.2 Installation procedure

- Secure the D1x unit to a flat surface via the three 7mm fixing holes in the mounting bracket.
- Remove the explosionproof cover of the alarm horn by unscrewing it, taking care not to damage the explosionproof threads in the process (Refer to section 5).
- Fit an M20/NPT suitably rated cable gland or conduit entry into the hole in the enclosure and connect the field wiring to the appropriate alarm horn terminals as shown in fig. 6 (AC) or fig 8. (DC). The power supply terminals are duplicated so that units may be connected in parallel. An end of line monitoring resistor may be fitted to DC units only (see section 12). If the second and third M20/NPT entries are not used, suitably rated stopping plugs must always be fitted.
- Replace the explosionproof cover of the loudspeaker, taking care not to damage the explosionproof threads. Tighten fully.

### 5.3 Hornless Variants

The D1x Sounder is also available as a variant with no horn fitted in the factory. The Horn threaded nose portion has a fitment thread of 1-3/8" – 18 UNF (to BS1580 or ANSI B1.1). The customer is responsible for sourcing and correctly fitting a suitable horn that meets all of the relevant safety requirements.

### 5.4 Access to the Explosionproof Enclosure

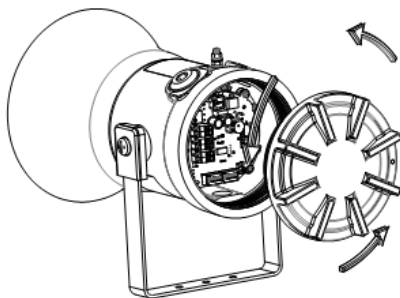


Fig 2: Accessing the enclosure

To access the Ex d chamber, loosen the M4 grub screw on the sounder cover. Open the enclosure by turning the sounder cover counterclockwise and remove the cover. Take extreme care not to damage the explosionproof threads in the process.

## 6) Installation Requirements

### 6.1 Safe Installation Requirements



Warning – High voltage may be present, risk of electric shock.  
DO NOT open when energised, disconnect power before opening.

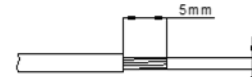
The sounder must only be installed by suitably qualified personnel in accordance with the latest issues of the relevant standards.

The product must only be installed by suitably qualified personnel in accordance with the latest issues of the relevant standards.

The installation of the units must also be in accordance with the NEC / CEC and any local regulations and should only be carried out by a competent electrical engineer who has the necessary training.

### 6.2 Cable Selection and Connections

When selecting the cable size, consideration must be given to the input current that each unit draws (see table 1), the number of sounders on the line and the length of the cable runs. The cable size selected must have the necessary capacity to provide the input current to all the sounders connected to the line.

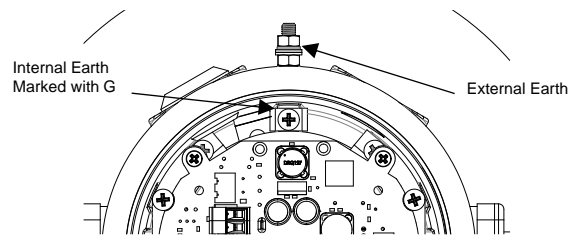


AC: 1.0 - 2.5mm<sup>2</sup> / AWG18 - AWG12  
DC: 0.2 - 2.5mm<sup>2</sup> / AWG24 - AWG12

Figure 3: Wire Preparation.

When connecting wires to the terminals great care should be taken to dress the wires so that when the cover is inserted into the chamber the wires do not exert excess pressure on the terminal blocks. This is particularly important when using cables with large cross-sectional areas such as 2.5mm<sup>2</sup>.

### 6.3 Earthing



The unit has both a primary internal and secondary external earth fixing point.

Internal earth connections should be made to the internal Earth terminal in the base of the housing using a ring crimp terminal to secure the earth conductor under the earth clamp.

External earth connections can be made to the M5 earth stud (see Fig. 2), using a ring crimp terminal to secure the earth conductor to the earth stud. The external earth conductor should be at least 4mm<sup>2</sup> in size.

The external earth crimp ring should be located between the two M5 plain washers provided and securely locked down with the M5 spring washer and M5 nut.

The earth conductor should be at least equal in size and rating to the incoming power conductors but at least a minimum of 0.82mm<sup>2</sup> / 18AWG in size.

## 6.4 Cable Glands, Blanking Elements & Adapters

### Ingress Protection

If a high IP (Ingress Protection) rating is required then a suitable sealing washer must be fitted under the cable glands or blanking plugs. A minimum ingress protection rating of IP6X must be maintained for installations in explosive dust atmospheres.

To maintain the ingress protection rating and mode of protection, the cable entries must be fitted with suitably rated cable entry and/or blanking devices during installation.

If entries are fitted with adaptors they must be suitably rated for the application. Fitting of blanking elements into adaptors is not permitted.

### Adapters

The GNEx sounder range can be supplied with the following types of adapters:

- M20 to 1/2" NPT
- M20 to 3/4" NPT
- M20 to M25

It is important to note that stopping plugs cannot be fitted onto adapters, only directly onto the M20 entries.

Any other adapters used must be suitably rated and certified.

If the installation is made using conduit, openings must have a sealing fitting connected as close as practical to the wall of the enclosure, but in no case more than the size of the conduit or 50mm, whichever is the lesser.

## 7) Settings

Following illustrations show the settings available for D1xS1 Alarm Horn Sounders. See schematic diagram D190-06-001 for details.

### 7.1 Configuration

See Table 1 for product power supply and Sound Pressure Levels (SPL).

#### Configuration for DC Units

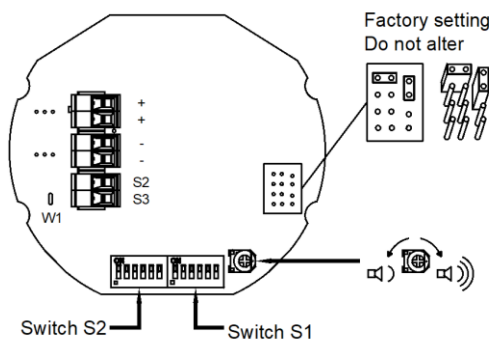


Figure 4: DC PCBA.

#### Configuration for AC Units

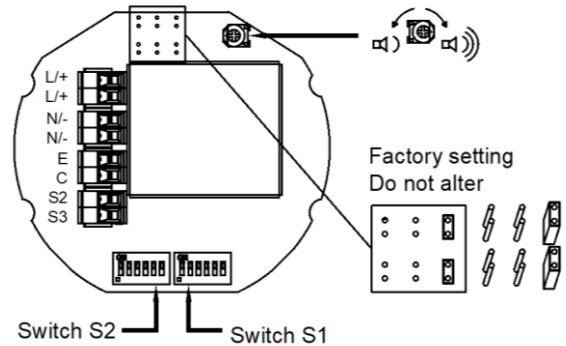


Figure 5: AC PCBA .

### 7.2 Stage Switching Polarity (DC Units)

Switching from positive switching (default) to negative switching - DC Only.

**NOTE:** Max supply is 33V DC – if higher DC voltage is required, use Negative switching.

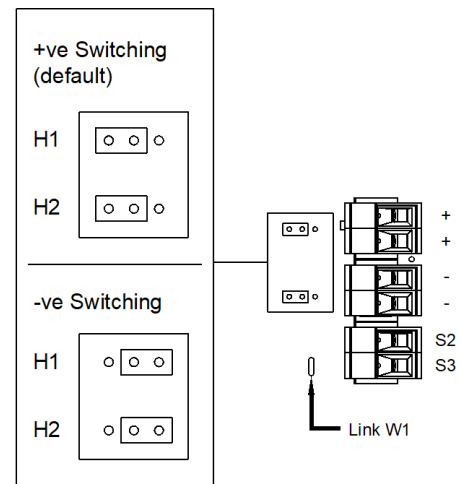


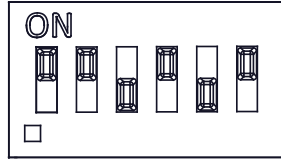
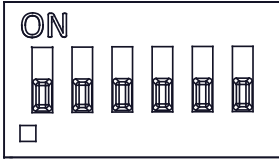
Figure 6: Stage Switching Polarity.

### 7.3 Tone Selection

The D1x Alarm Horn Sounders have 64 different tones that can be selected independently for the first and second stage alarms. The tones are selected by operation of the tone setting DIP switch 1 & DIP switch 2 (see figures 6 and 7) on the PCB, for stage 1 and stage 2 respectively.

Default = Switch 2  
S2 - Tone 1  
0 0 0 0 0

Default = Switch 1  
S1 - Tone 44  
1 1 0 1 0 1



(ON = 1, OFF = 0)

Figure 7: DIP switch configuration

The sounder can also be switched to sound the third and fourth stage alarm tones.

The tone table (D221-95-001-IS) shows the switch positions for the 64 tones on first and second stages and which tones are available for the third and fourth stages dependent on the Stage 1 DIP switch setting.

Following table (Table 3) is a summary of DC: D190-06-001; AC: D190-06-005 wiring options.

Config.	Voltage	Configuration Description	Features	Product Option Identifier
1a	DC	Single Stage Configuration	<ul style="list-style-type: none"> <li>Line monitoring</li> <li>Positive Switching</li> </ul>	1
1b	DC	Two Stage Configuration	<ul style="list-style-type: none"> <li>Common Negative</li> <li>Positive Switching</li> </ul>	1
1c	DC	Three/Four Stage Configuration	<ul style="list-style-type: none"> <li>Common Negative</li> <li>Positive Switching</li> </ul>	1
2	DC	Three/Four Stages. Voltage Free 2nd, 3rd & 4th Stage Activation Configuration	<ul style="list-style-type: none"> <li>Common Positive</li> <li>Customer Set H1 &amp; H2 to Negative Switching</li> </ul>	1
3	DC	Two Stage Configuration	<ul style="list-style-type: none"> <li>Independent Stage Input</li> <li>Reverse Polarity Stage Monitoring</li> </ul>	1
4	DC	Two Stage Configuration	<ul style="list-style-type: none"> <li>Line Stage Monitoring (Use suitable monitoring relays/ modules)</li> <li>Not to be used in reverse polarity monitoring</li> </ul>	Y
5	DC	Two/Three Stage Voltage Free Activation Configuration		K
6	DC	Three/Four Stage Configuration	<ul style="list-style-type: none"> <li>Independent Stage Input</li> <li>Line Stage Monitoring (Use suitable monitoring relays/ modules)</li> <li>Positive Switching (Default)</li> </ul>	V
1a	AC	Single Stage Configuration		1
1b	AC	Three/Four Stage Configuration		1
2	AC	Two/Three Stage Voltage Free Activation Configuration		K

Table 3: Summary of Wiring Options. See Document D190-06-001 for DC Schematic Diagrams; D190-06-005 for AC Schematic Diagrams.

## 8) End of Line Monitoring (DC Units)

### 8.1 Standard DC End Of Line Monitoring

All DC units have a blocking diode fitted in their supply input lines. An end of line monitoring diode or an end of line monitoring resistor can be connected across the +ve and -ve terminals in the flameproof chamber. If an end of line resistor is used it must have a minimum resistance value of 3k3 ohms and a minimum wattage of 0.5W or a minimum resistance value of 500 ohms and a minimum wattage of 2W.

The resistor must be connected directly across the +ve and -ve terminals as shown in the following drawing. The resistor leads should be kept as short as possible. See D190-06-001 for details.

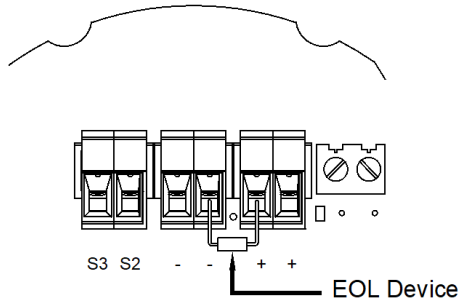
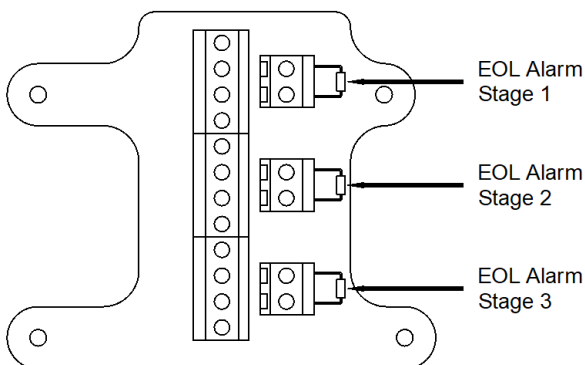


Figure 8: End of Line Resistor placement.

### 8 Custom DC Multi-Stage End Of Line Monitoring

An optional 12-way terminal module is available to enable up to four alarm stages to be activated from three DC voltage output channels. The three alarm stage activation inputs can be independently monitored.

Refer to Schematic D190-06-001, Config. 6.  
Specify Product option 'V' when ordering.  
Spare part code for field installation: SP78-0001



## 9) Maintenance, Overhaul and Repair

Figure 9: End of Line Resistor placement –  
Optional 12-Way Terminal Module.

Maintenance, repair and overhaul of the equipment should only be carried out by suitably qualified personnel in accordance with the current relevant standards:

Flameproof threaded joints and cemented joints are not permitted to be repaired.

Units must not be opened while an explosive atmosphere is present.

If opening the unit during maintenance operations, a clean environment must be maintained and any dust layer removed prior to opening the unit.

Potential electrostatic charging hazard – Clean only with a damp cloth.



· 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

· -55°C to +85°C / -67°C to +176°F

General Signaling Canada:

D1xS1-AC230-A: -55°C to +40°C / -67°F to +104°F

D1xS1-DC024-A, D1xS1-DC024-S: -55°C to +85°C / -67°F to +185°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	P1 Nominal Operating Current <sup>#</sup>	P2 Nominal Operating Current <sup>#</sup>	P3 Nominal Operating Current <sup>#</sup>	P1 Max Operating RMS <sup>*</sup>	P2 Max Operating RMS <sup>*</sup>	P3 Max Operating RMS <sup>*</sup>
D1xS1-DC024-A	12V dc	11.5 - 54V dc	221mA	-	-	221mA	-	-
	24V dc		185mA	-	-			
	48V dc		115mA	-	-			
D1xS1-AC230-A	115V ac	100- 240V ac 50/60Hz	73mA	-	-	80mA	-	-
	230V ac		48mA	-	-			

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

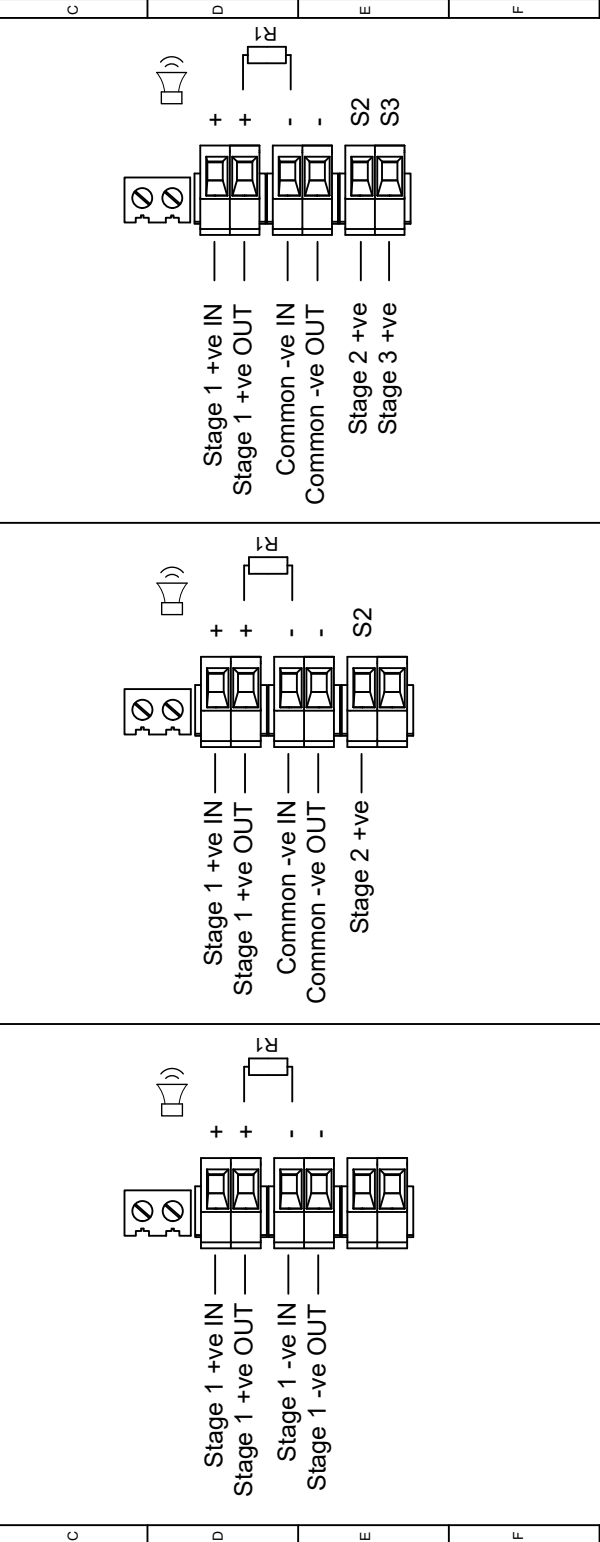
Table 4: UL General Signaling Electrical ratings

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

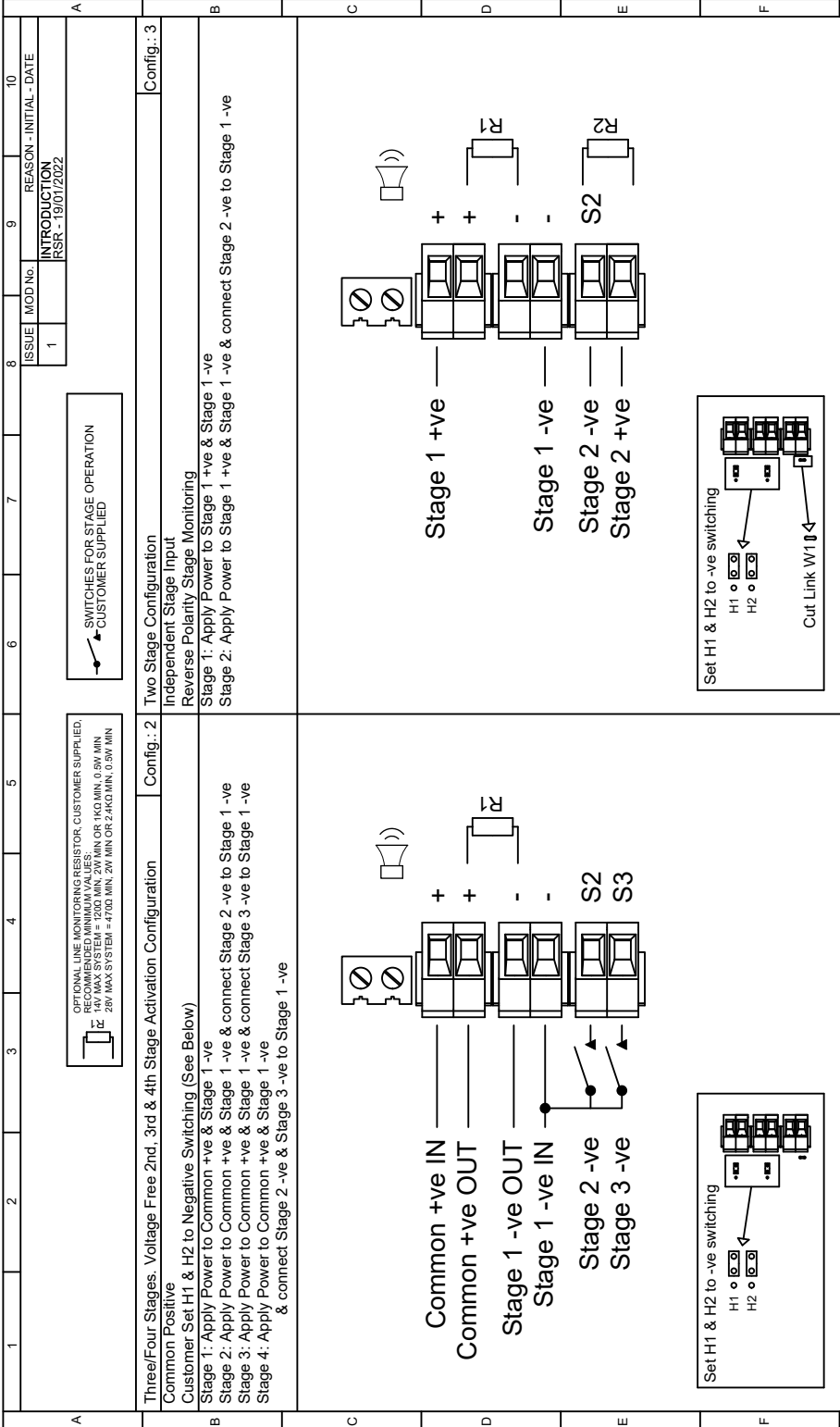


1	2	3	4	5	6	7	8	9	10
<p>OPTIONAL LINE MONITORING RESISTOR, CUSTOMER SUPPLIED.  RECOMMENDED MINIMUM VALUES:  RESISTANCE = 100 OHMS MIN OR 1K0 MIN, 0.5W MIN  DIMENSIONS = 4.0MM MIN OR 4.0MM MIN, 1.0MM MIN OR 1.0MM MIN  28V MAX SYSTEM = 4700, MIN, 2W MIN OR 2.4K0 MIN, 0.5W MIN</p>									
<p>ISSUE / MOD NO: 1</p> <p>REASON - INITIAL - DATE: 19/01/2022</p> <p>INTRODUCTION: RSR - 19/01/2022</p>									

Single Stage Configuration		Two Stage Configuration		Three/Four Stage Configuration	
Line Monitoring		Common Negative		Common Negative	
Set to positive switching (default)		Set to positive switching (default)		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	



DRAWING TO BS8888:2000, GEOMETRIC TOLERANCES TO ISO1101:1983 AND ANGULAR DIMENSIONAL TOLS		DRAWN	DATE	SURFACE FINISH / WEIGHT (Kg)	
STANDARDS Dlx		R.S.RAIT	19/01/2022	MATERIAL	
		B.JISARD	19/01/2022	ALTERNATIVE MATERIAL	
		R.N.POTTS	19/01/2022		
APPROVED		DATE		AS PER LATEST DATE OF ISSUE SHOWN ABOVE	
APPROVED		DATE		©	
CHECKED		DATE		THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER THEREIN IS COMMUNICATED IN CONFIDENCE AND SYSTEMS LTD, NEITHER THE WHOLE OR ANY PART THEREOF MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE WRITTEN CONSENT OF SYSTEMS LTD.	
DRAWING NUMBER		DRAWING NUMBER		EUROPEAN SAFETY SYSTEMS LTD MANSFIELD ROAD LONDON W3 7QH WWW.ESS.COM	
SHEET		SHEET		ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE	
1 OF 3		1 OF 3		TITLE	
NTS		NTS		D1XS2 / D1XS2 / G1NEXS1 / G1NEXS2 / STEXS1 / STEXS2 DC SOUNDER WIRING DIAGRAMS	
A3		A3		DRAWING NUMBER	
D190-06-001		D190-06-001		DRAWING NUMBER	



1	2	3	4	5	6	7	8	9	10
ISSUE		MOD.No.		REASON - INITIAL - DATE		INTRODUCTION		RSR - 19/01/2022	
1									

**OPTIONAL LINE MONITORING RESISTOR, CUSTOMER SUPPLIED, RECOMMENDED:**  
 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**

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

**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

**Two Stage Configuration** Config: 3

**Reverse Polarity Stage Monitoring**

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

**Common +ve IN**  
**Common +ve OUT**  
**Stage 1 -ve OUT**  
**Stage 1 -ve IN**  
**Stage 2 -ve**  
**Stage 3 -ve**

**Set H1 & H2 to -ve switching**

H1 ○ □ □  
 H2 ○ □ □

**Set H1 & H2 to -ve switching**

H1 ○ □ □  
 H2 ○ □ □



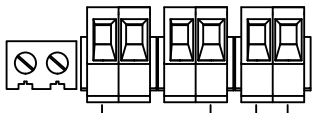
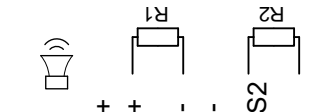
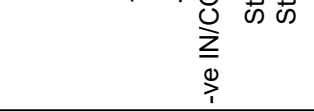



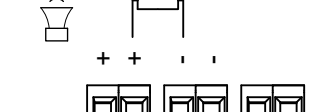
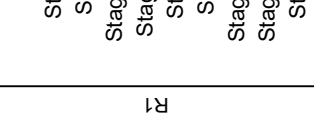
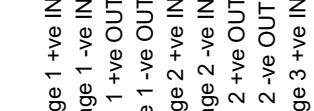
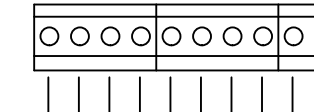


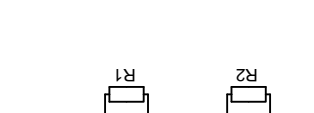
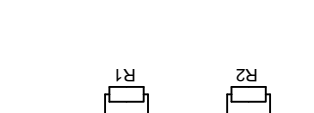
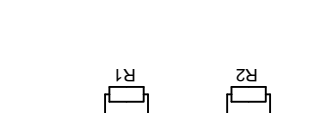
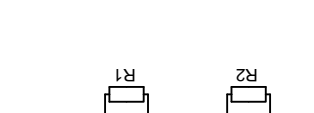


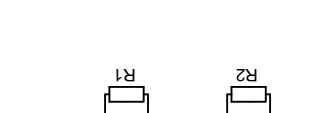
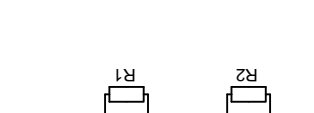
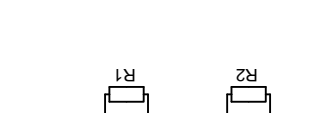
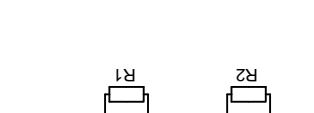


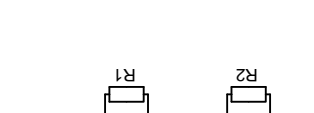
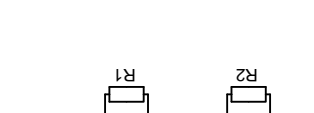
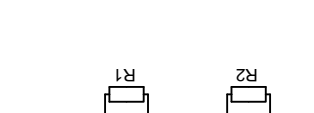
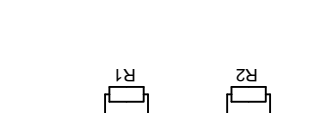


**Cut Link W114**

DRAWING TO BS8888:2000, GEOMETRIC TOLERANCES TO ISO1101:1983 AND ANGULAR DIMENSIONAL TOLS	DRAWN R.S. RAIT	DATE 19/01/2022	SURFACE FINISH	WEIGHT (Kg)
CHECKED B. JISARD	DATE 19/01/2022	MATERIAL		
APPROVED R.N.POTTS	DATE 19/01/2022	ALTERNATIVE MATERIAL		

ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE		A3	
TITLE D1XS1 / D1XS2 / G1NEXS1 / G1NEXS2 / STEXS1 / STEXS2 DC SOUNDER WIRING DIAGRAMS		DRAWING NUMBER D190-06-001	
SCALE NTS	SHEET 2 OF 3		



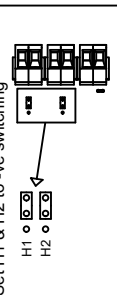
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 © AS PER LATEST DATE OF ISSUE SHOWN ABOVE

1	2	3	4	5	6	7	8	9	10	
<p>OPTIONAL LINE MONITORING RESISTOR, CUSTOMER SUPPLIED,  14V MAX SYSTEM = 120Q MIN, 2W MIN OR 1KQ MIN, 0.5W MIN  28V MAX SYSTEM = 470Q MIN, 2W MIN OR 2.4KQ MIN, 0.5W MIN</p> 		<p>SWITCHES FOR STAGE OPERATION   CUSTOMER SUPPLIED</p>		<p>ISSUE MOD NO. REASON - INITIAL - DATE  1 1 INTRODUCTION RSR - 19/01/2022</p>		<p>Config.: 4  Two/Three Stage Voltage Free Activation Configuration  Customer Set H1 &amp; H2 to Negative Switching (See Below)</p>		<p>Config.: 5  Three/Four Stage Configuration  Independent Stage Input  Line Stage Monitoring (Use suitable monitoring relays/modules)  Not to be used for reverse polarity monitoring</p>		<p>Config.: 6  Three/Four Stage Configuration  Independent Stage Input  Line Stage Monitoring (Use suitable monitoring relays/modules)  Set to positive switching (default)</p>
<p>Stage 1: Apply Power to Stage 1 +ve &amp; Stage 1 -ve  Stage 2: Apply Power to Stage 2 +ve &amp; Stage 2 -ve</p>		<p>Power: +ve &amp; -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 &amp; Stage 2 -ve to Common -ve</p>		<p>Stage 1: Apply Power to Stage 1 +ve &amp; Stage 1 -ve  Stage 2: Apply Power to Stage 2 +ve &amp; Stage 2 -ve  Stage 3: Apply Power to Stage 3 +ve &amp; Stage 3 -ve  Stage 4: Apply Power to Stage 2 +ve &amp; Stage 2 -ve &amp; Apply Power to Stage 3 +ve &amp; Stage 3 -ve</p>		<p>Stage 1: Apply Power to Stage 1 +ve &amp; Stage 1 -ve  Stage 2: Apply Power to Stage 2 +ve &amp; Stage 2 -ve  Stage 3: Apply Power to Stage 2 +ve &amp; Stage 2 -ve  Stage 4: Apply Power to Stage 3 +ve &amp; Stage 3 -ve</p>		<p>Stage 1: Apply Power to Stage 1 +ve &amp; Stage 1 -ve  Stage 2: Apply Power to Stage 2 +ve &amp; Stage 2 -ve  Stage 3: Apply Power to Stage 2 +ve &amp; Stage 2 -ve  Stage 4: Apply Power to Stage 3 +ve &amp; Stage 3 -ve</p>		<p>Stage 1: Apply Power to Stage 1 +ve &amp; Stage 1 -ve  Stage 2: Apply Power to Stage 2 +ve &amp; Stage 2 -ve  Stage 3: Apply Power to Stage 2 +ve &amp; Stage 2 -ve  Stage 4: Apply Power to Stage 3 +ve &amp; Stage 3 -ve</p>
<p>Stage 1 +ve</p> 		<p>Stage 1 -ve</p> 		<p>Stage 2 +ve</p> 		<p>Stage 2 -ve</p> 		<p>Stage 1 +ve IN</p> 		<p>Stage 1 -ve IN</p> 
<p>Stage 1 +ve</p> 		<p>Stage 1 -ve</p> 		<p>Stage 2 +ve</p> 		<p>Stage 2 -ve</p> 		<p>Stage 1 +ve OUT</p> 		<p>Stage 1 -ve OUT</p> 
<p>Stage 2 +ve</p> 		<p>Stage 2 -ve</p> 		<p>Stage 3 +ve</p> 		<p>Stage 3 -ve</p> 		<p>Stage 2 +ve OUT</p> 		<p>Stage 2 -ve OUT</p> 
<p>Stage 2 +ve</p> 		<p>Stage 2 -ve</p> 		<p>Stage 3 +ve</p> 		<p>Stage 3 -ve</p> 		<p>Stage 3 +ve IN</p> 		<p>Stage 3 -ve IN</p> 
<p>Stage 2 +ve</p> 		<p>Stage 2 -ve</p> 		<p>Stage 3 +ve</p> 		<p>Stage 3 -ve</p> 		<p>Stage 3 +ve OUT</p> 		<p>Stage 3 -ve OUT</p> 

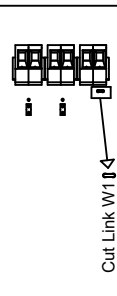
<p>DRAWING TO BS8889:2000  GEOMETRIC TOLERANCES TO ISO 1101:1983  ANGULAR DIMENSIONAL TOLS</p>		<p>DRAWN R.S.RAIT  CHECKED B.ISARD  DESIGNED B.ISARD  APPROVED R.N.POTTS</p>		<p>DATE 19/01/2022  DATE 19/01/2022  DATE 19/01/2022</p>		<p>SURFACE FINISH WEIGHT (kg)  MATERIAL</p>		<p>EUROPEAN SAFETY SYSTEMS LTD  MANSELL ROAD  LONDON W3 7QH  WWW.ESS.COM</p>		<p>ALL DIMENSIONS IN MM  IF IN DOUBT, ASK -  DO NOT SCALE</p>		<p>A3</p>	
<p>STANDARDS  Dix</p>		<p>ALTERNATIVE MATERIAL</p>		<p>AS PER LATEST DATE OF ISSUE SHOWN ABOVE</p>		<p>THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE  MATTER THEREIN IS COMMUNICATED IN CONFIDENCE AND  SYSTEMS LTD NEITHER THE WHOLE OR ANY EXTRACT MAY  BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY  ANY MEANS WITHOUT THE WRITTEN CONSENT OF  SYSTEMS LTD  AS PER LATEST DATE OF ISSUE SHOWN ABOVE</p>		<p>EUROPEAN SAFETY SYSTEMS LTD  MANSELL ROAD  LONDON W3 7QH  WWW.ESS.COM</p>		<p>TITLE D1XS1 / D1XS2 / G1NEKS1 / G1NEKS2 / STEAS1 /  STEAS2 DC SOUNDER WIRING DIAGRAMS</p>		<p>SCALE NTS 3 OF 3  DRAWING NUMBER D190-06-001</p>	

(CONFIGURATION SHOWS OPTIONAL  
ADDITIONAL TERMINAL PCBA -  
PRODUCT OPTION 'V')

CUSTOM CONFIGURATION  
PRODUCT OPTION 'K'



CUSTOM CONFIGURATION  
PRODUCT OPTION 'Y'



1	2	3	4	5	6	7	8	9	10								
<div style="border: 1px solid black; padding: 5px; display: inline-block;">  SWITCHES FOR STAGE OPERATION   CUSTOMER SUPPLIED         </div>																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">ISSUE</td> <td style="width: 15%;">MOD No</td> <td style="width: 15%;">REASON - INITIAL - DATE</td> <td style="width: 45%;"></td> </tr> <tr> <td>1</td> <td></td> <td>INTRODUCTION RSR - 19/01/2022</td> <td></td> </tr> </table>										ISSUE	MOD No	REASON - INITIAL - DATE		1		INTRODUCTION RSR - 19/01/2022	
ISSUE	MOD No	REASON - INITIAL - DATE															
1		INTRODUCTION RSR - 19/01/2022															
<b>Single Stage Configuration</b> Config.: 1a Stage 1: Apply Power to Stage 1 Live & Stage 1 Neutral			<b>Three/Four Stage Configuration</b> Config.: 1b 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			<b>Two Stage Voltage Free Activation Configuration</b> Config.: 2 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											

**CUSTOM CONFIGURATION PRODUCT OPTION 'K'**

DRAWING TO BS8886:2000, GEOMETRIC TOLERANCES TO ISO1101:1983 AND ANGULAR DIMENSIONAL TOLS		DRAWN R.S. RAIT	DATE 19/01/2022	SURFACE FINISH MATERIAL	WEIGHT (kg)
CHECKED B. ISARD		DATE 19/01/2022	THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER HEREIN IS COMMUNICATED IN CONFIDENCE AND SYSTEMS LTD. NEITHER THE WHOLE OR ANY PART THEREOF IS TO BE REPRODUCED OR TRANSMITTED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF SYSTEMS LTD. © AS PER LATEST DATE OF ISSUE SHOWN ABOVE		
APPROVED R.N. POTTS		DATE 19/01/2022	ALTERNATIVE MATERIAL		
STANDARDS Dlx		ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE			
TITLE STXS2 AC SOUNDER WIRING DIAGRAMS		SCALE NTS		SHEET 1 OF 1	DRAWING NUMBER D190-06-005
EUROPEAN SAFETY SYSTEMS LTD WANSBELL ROAD LONDON W3 7QH WWW.ESS.COM		A3			