Sonos and Nexus Voice Sounders

User Guide

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Sonos Voice Sounder (Sounder Only Operation)

Technical Specification

Supply Voltage Range	17-32V DC
Current	30mA
Peak Sound Level:	94-106 dBA at 1m*
Number of Tones:	32
Number of Messages	3
Frequency Range	400-2850 Hz*
Operating Temperature:	- 25°C to +70°C
Casing:	High Impact Polycarbonate
IP Rating:	IP65 (with deep base)
Synchronisation	Automatic with Klaxon Sonos and Nexus Voice-Enhanced Sounders

*depends on selected tone and input voltage. See tone table for details.

Installation

If required, the mechanism for locking the sounder to the base can be activated by removing the thin section of plastic shown in Fig. 1 with side cutters or a similar tool. To open a locked head, remove the small white bung from the hole on the side of the sounder, insert a tool into the hole and depress the clip whilst twisting the head. The O-ring and bung must be re-fitted to maintain the weatherproofing.
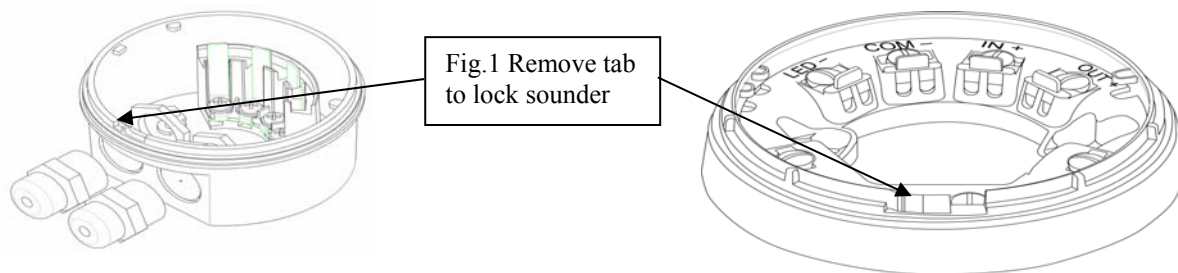

Fig.1 Remove tab to lock sounder

Wiring

Signal	Positive Supply	Negative Supply
1st Stage Message	(3) IN+	(2) ─ or COM -
2nd Stage Message	(3) IN+	(1) ♫/ ☀
3rd Stage Message	(3) IN+	(1) ♫/ ☀ *AND* (2) ─ or COM ─

A separate earth terminal is provided on the deep base for connecting the screen or functional earth. On the shallow base, terminal 5 can be used for this purpose.

Alerting Tone Selection and Volume Control

a. The alerting tone sounds for 4 seconds before the speech message plays and is selected using the 5 way dipswitch on the bottom of the sounder head. Refer to the table overleaf for details of the available tones and the switch settings required to select them.

b. The sound output of the unit can be reduced by adjusting the potentiometer on the bottom of the sounder.

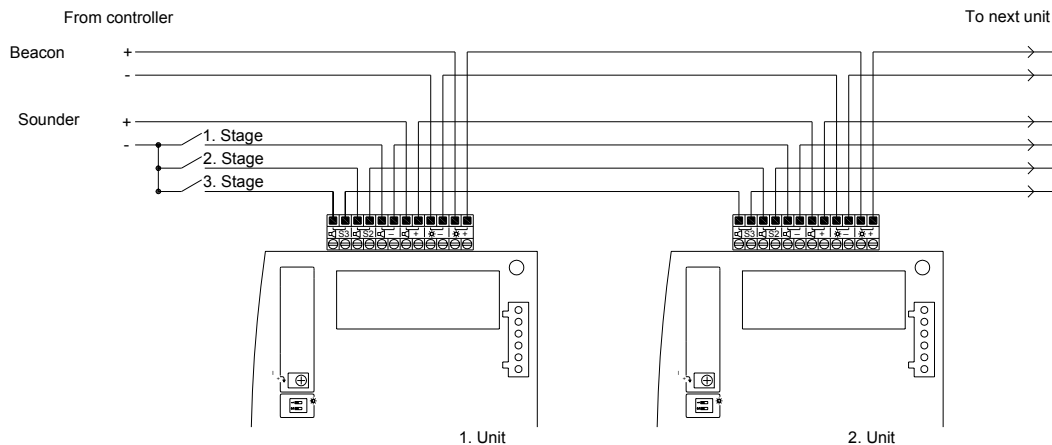# Nexus DC Voice Sounder (Sounder Only Operation)

Technical Specification

Supply Voltage Range:	17-28V DC
Current – Sounder:	30mA
Current – Beacon (where fitted):	Xenon - 250mA Average, 700mA Peak*,
	LED - 18mA (Flashing) or 65mA (Static)*
Peak Sound Level:	104-116 dBA at 1m* (Typ. 110dBA @ 24V, Tone 1)
Frequency Range:	400-2900 Hz*
Operating Temperature:	- 25°C to +70°C
Volume Control	20dBA typical
Remote Message Switching	Provision for up to 7 messages (Negative voltage activation)
Casing:	High Impact Polycarbonate/ABS
IP Rating:	IP66
Synchronisation	Automatic with Klaxon Nexus and Sonos Voice-Enhanced Sounders

*depends on selected tone and supply voltage

Installation

a. The sounder is installed by first mounting the base unit and making the external wring connections to the base. The head unit then automatically connects when it is attached to the base.]

b. The sounder head is separated from the base by unlocking the four ¼-turn fasteners in the corners of the sounder.

c. Note that the head only fits onto the base one way around. If a beacon is fitted, care should be taken when mounting the base to ensure that the beacon will be positioned in the desired orientation after the sounder is attached.

Wiring

The siren has *seven* selectable stages. These stages are selected by connecting the negative of your power supply (0V) to any combination of the ◁S3, ◁S2 or ◁ − terminal block connections
The positive lead of the power supply (24V) always wires to the ◁ + terminal block connection.

The sounder and beacon have separate wiring terminals. Each terminal is duplicated to enable simple 'daisy-chain' connection of multiple units.

Line	Terminal Marking
Sounder Positive Supply (17 to 28V DC)	◁ +
Sounder Negative Supply (0V)	◁ −
Sounder Negative Supply (0V)	◁ S2
Sounder Negative Supply (0V)	◁ S3
Beacon Positive Supply (17 to 28V DC)	☼ +
Beacon Negative Supply (0V)	☼ −

Selection of the message the sounder plays is controlled by the combination of three negative supply connections as follows:

Connections to Supply Negative			Message	
◁ S3	◁ S2	◁ −	No.	Typical Use
Open	Open	Open	0	Off
Open	Open	Closed	1	Alert
Open	Closed	Open	2	Evacuate
Open	Closed	Closed	3	Test
Closed	Open	Open	4	All Clear
Closed	Open	Closed	5	(Free)
Closed	Closed	Open	6	(Free)
Closed	Closed	Closed	7	(Free)

Configuration and Control

a. **Messages**

The sounder is supplied pre-programmed with up to seven voice messsages. The stored messages can be re-programmed via the USB interface using a Windows PC. Refer to the separate programming guide for details.

b. **Alerting Tone**

The accompanying tone for each message can be selected via the programming software. The alerting tone sounds for 3 seconds before the speech message plays. If required, alternative tones can be selected using a PC and the USB interface.

c. **Volume Control**

The sound output of the unit can be reduced by adjusting the potentiometer.

d. **Beacon Flash Controls (If fitted)**

The flash mode of the beacon can be altered using the 2-way dipswitch marked ☼

	XENON BEACON		LED BEACON	
Switch	Off	On	Off	On
1	60 flashes per minute	30 flashes per minute	Single Flash	Double Flash
2	Single Flash	Double Flash	Flashing	Static

Nexus AC Voice Sounder (Sounder Only Operation)

Technical Specification

Supply Voltage Range: 110 or 230V AC 50/60Hz C
Current   Sounder - 30mA max
          Beacon (Where fitted) - 70mA
Peak Sound Level: 103-115 dBA at 1m*
Frequency Range: 400-2900 Hz*
Operating Temperature: - 25°C to +55°C
Volume Control   20dBA typical
Remote Message Switching Provision for 4 volt-free contact activated alarm stages
Casing: High Impact Polycarbonate/ABS
IP Rating: IP66
Synchronisation   Automatic with Klaxon Nexus and Sonos Voice-Enhanced
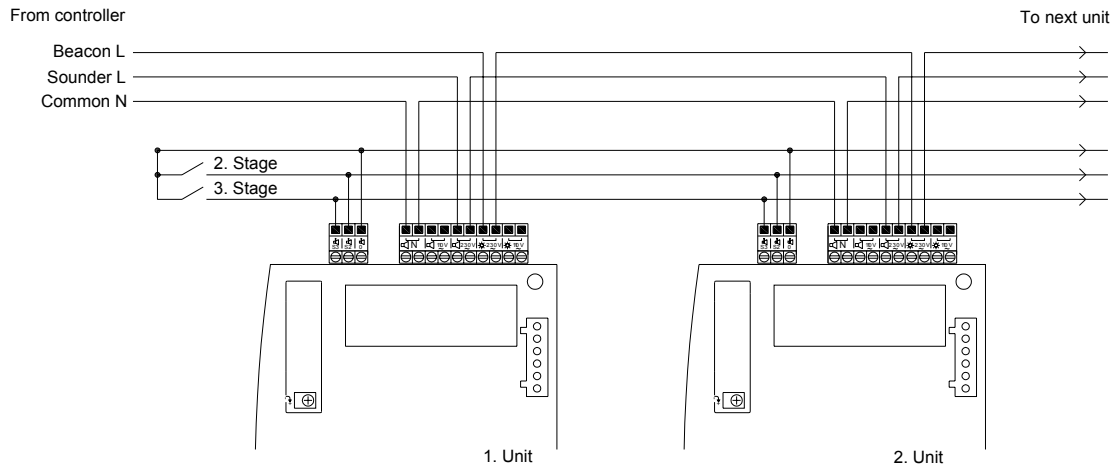Sounders

*depends on selected tone and supply voltage

Installation

IMPORTANT

a.   The unit should be fitted with a fused spur incorporating an all pole disconnection device providing   3mm contact separation in all poles. Ensure fuse, cable size and gland type are rated sufficiently for the total load on the sounder circuit.

b.   Isolate the unit from the electricity supply before removing the cover. Only suitably qualified personnel should gain access to the unit to perform adjustments to the tone or volume. WARNING: no user serviceable parts contained within the unit.

c.   The sounder is installed by first mounting the base unit and making the external wring connections to the base. The head unit then automatically connects when it is attached to the base.

d.   The sounder head is separated from the base by unlocking the four ¼-turn fasteners in the corners of the sounder. (Recommended screwdriver: Philips No. 2, min 100mm long).

e.   Note that the head only fits onto the base one way around. If a beacon is fitted, care should be taken when mounting the base to ensure that the beacon will be positioned in the desired orientation after the sounder is attached.

Wiring

a.   Power: Note that the sounder and beacon have separate power terminals, marked as follows:

Device	Common (Neutral)	110V AC	230V AC
Sounder	◁ N	◁ 110V	◁ 230V
Beacon (Where fitted)	◁ N	110V ☼	230V ☼

b.   Remote Message Switching (If required): Externally link control terminals (S2 and S3) to common terminal (marked ◁) as shown below.

Connection to Terminal ◁		Message	
◁ S3	◁ S2	No.	Typical Use
Open	Open	1	Alert
Open	Closed	2	Evacuate
Closed	Open	3	All Clear
Closed	Closed	4	Test

Configuration and Control

a.   **Messages**
The sounder is supplied pre-programmed with up to four voice messsages. The stored messages can be re-programmed via the USB interface using a Windows PC. Refer to the separate programming guide for details.

b.   **Alerting Tone**
The accompanying tone for each message can be selected via the programming software. The alerting tone sounds for 3 seconds before the speech message plays. If required,   alternative tones can be selected using a PC and the USB interface.

c.   **Volume Control**
The sound output of the unit can be reduced by adjusting the potentiometer.

Sonos Voice Sounder (with Interface Control Unit)

Technical Specification

Supply Voltage Range	17-28V DC
Current	30mA
Peak Sound Level:	94-106 dBA at 1m*
Number of Messages	Provision for up to 7 messages
Frequency Range	400-2850 Hz*
Operating Temperature:	- 25°C to +70°C
Casing:	High Impact Polycarbonate
IP Rating:	IP65 (with deep base)
Synchronisation	Automatic with Klaxon Sonos and Nexus Voice-Enhanced Sounders

   *depends on selected tone and input voltage. See tone table for details.

Installation

If required, the mechanism for locking the sounder to the base can be activated by removing the thin section of plastic shown in Fig. 1 with side cutters or a similar tool. To open a locked head, remove the small white bung from the hole on the side of the sounder, insert a tool into the hole and depress the clip whilst twisting the head. The O-ring and bung must be re-fitted to maintain the weatherproofing.

Fig.1 Remove tab to lock sounder

Wiring

Line	Terminal Marking
Sounder Positive Supply (17 to 28V DC)	(3) IN+
Sounder Negative Supply (0V)	(2) ─ or COM -

A separate earth terminal is provided on the deep base for connecting the screen or functional earth. On the shallow base, terminal 5 can be used for this purpose.

(Selection of the message the sounder plays is controlled by the Klaxon Message Interface Unit.)

Alerting Tone Selection and Volume Control

a.   The alerting tone sounds for 3 seconds before the speech message plays. It can be changed using the 5 way dipswitch on the bottom of the sounder head. Switches 1 and 2 alter the Alert/1st Stage tone. Switches 3 and 4 alter all other tones.

b.   The sound output of the unit can be reduced by adjusting the potentiometer on the bottom of the sounder.

c.   Beacon Flash Controls:
If switch 5 is ON then the beacon will not flash after Alert/1st Stage is over.

Nexus 2-Wire Voice Sounder Beacon (with Interface Control Unit)

Technical Specification:

|	
Supply Voltage Range:	17-28V DC
Current – Sounder:	50mA
Peak Sound Level:	104-116 dBA at 1m* (Typ. 110dBA @ 24V, Tone 1)
Frequency Range:	400-2900 Hz*
Operating Temperature:	- 25°C to +70°C
Volume Control	20dBA typical
Remote Message Switching	Provision for up to 7 messages
Casing:	High Impact Polycarbonate/ABS
IP Rating:	IP66
Synchronisation	Automatic with Klaxon Nexus and Sonos Voice-Enhanced Sounders

*depends on selected tone and supply voltage

Installation

   a. The sounder is installed by first mounting the base unit and making the external wring connections to the base. The head unit then automatically connects when it is attached to the base.

   b. The sounder head is separated from the base by unlocking the four ¼-turn fasteners in the corners of the sounder.

   c. Note that the head only fits onto the base one way around. If a beacon is fitted, care should be taken when mounting the base to ensure that the beacon will be positioned in the desired orientation after the sounder is attached.

Wiring

Each terminal is duplicated to enable simple 'daisy-chain' connection of multiple units.

Line	Terminal Marking
Sounder Positive Supply (17 to 28V DC)	◁ +
Sounder Negative Supply (0V)	◁ −

Selection of the message the sounder plays is controlled by the Klaxon Message Interface Unit.

Configuration and Control

a. Messages
   The sounder is supplied pre-programmed with up to seven voice messsages. The stored messages and tones can be re-programmed via the USB interface using a

Windows PC. Refer to the separate programming guide for details.

b. Alerting Tone
The alerting tone sounds for 3 seconds before the speech message plays. It can be changed using the 5 way dipswitch on the bottom of the sounder head. Switches 1 and 2 alter the Alert/1st Stage tone. Switches 3 and 4 alter all other tones.

c. Volume Control
The sound output of the unit can be reduced by adjusting the potentiometer.

d. Beacon Flash Controls
If switch 5 is ON then the beacon will not flash after Alert/1st Stage is over. The flash mode of the beacon can be altered using the PC Software (supplied on CD).

Fire Alarm Interface Control Unit

Technical Specification

Supply Voltage Range:	17-28V DC
Current:	45mA (active alarm), 16mA (quiescent)
Remote Tone Switching:	Provision for 4 alarm stages (plus a default warning stage)
Operating Temperature:	- 25°C to +70°C
Casing:	Polycarbonate

Installation

a. The interface connects a fire alarm panel to Klaxon's Voice-Enhanced Nexus/Sonos sounders.

b. The interface takes its supply ('+AUX-') from the 24V Auxiliary Output from the panel.

c. The Sounder 1 (1st Stage Sounder) Output of the fire alarm panel should be connected to the '+SND1-' input terminals of the interface.

d. The Sounder 2 (2nd Stage Sounder) Output from the fire alarm panel should be connected to the '+SND2-' input terminals of the interface.

e. The Voice-Enhanced sounders are then connected to the '+O/P1-' and/or '+O/P2-' terminals of the controller. Each chain of sounders should be terminated with the end-of-line resistor specified for the fire alarm panel being used.

Wiring

FIRE Interface System
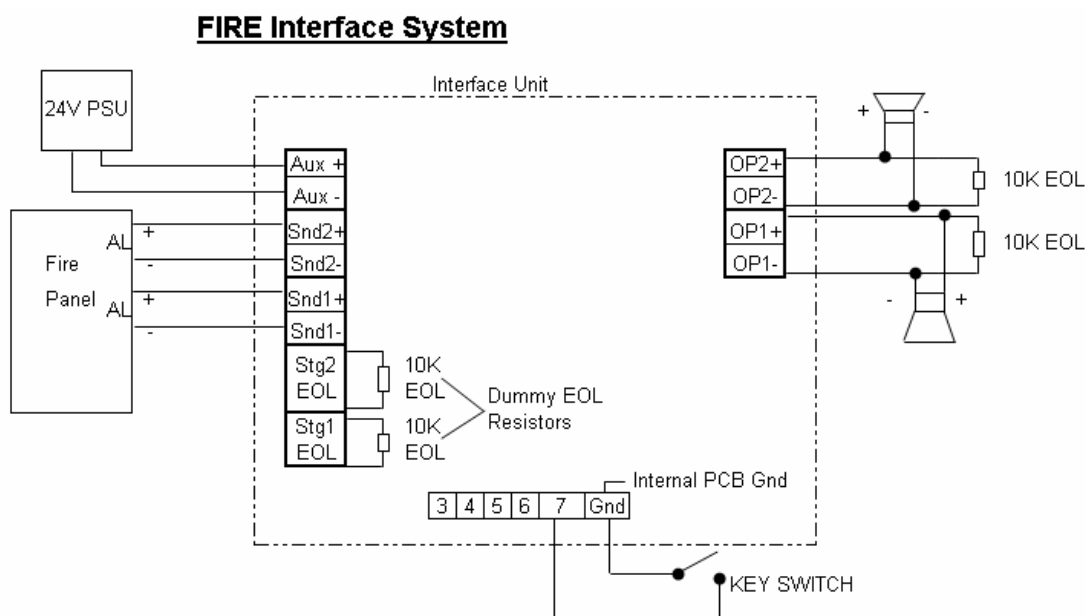
Note: If using only one Panel Sounder Output then make sure that you wire into SND2. If the interface develops a fault or loses power a safety relay switches a 1KΩ resistor onto OP2

In none-alarm condition the SND1 and SND2 inputs are connected to the OP1 and OP2 outputs. The Panel uses reverse monitoring when looking at the EOL Resistors.

An Alarm condition switches two relays to disconnect OP1 and OP2 from the SND inputs and connects the panel to the Stg1 and Stg2 dummy EOL resistors.

Messages
- If there is a Loss of Power or an interface fault a default message of your choice is played.
- When AL1 (or AL2) receive a pulsed voltage (Dependant on Panel functionality) the interface takes control of the sounders from the Panel and initiates an 'Alert' message.
- When AL1 (or AL2) receive a static or constant voltage (in normal alarm condition) the interface then initiates the 'Evacuate' message
- If the Key-switch on the interface unit is switched to the Test position and an alarm condition is detected the 'Test' message is played.
- If the Key-switch is turned to the Normal position the 'Alarm Test Over' message is played.

Controls

Fire Panel Selection

The interface controller will work with all common types of fire panel. There is a 5-way dipswitch inside the interface that is used to describe the fire panel being connected to.
N.B. These switches must be set *before* power is applied to the '+AUX-' inputs of the Klaxon controller; the controller will not acknowledge switch changes after power has been applied.

	DIP 5 ON
DIP 3 OFF & DIP 4 OFF:	*Alert*: 0.5s ON/ 0.5s OFF
DIP 3 OFF & DIP 4 ON:	*Alert*: 1s ON/ 1s OFF
DIP 3 ON & DIP 4 OFF:	*Alert*: 2s ON/ 2s OFF
DIP 1 and **DIP 2** have no effect (please leave **OFF**)	

Standard Fire Mode

In FIRE mode (**DIP 5 ON**) only the '+SND2-' input is read by the interface unit. If you only want to use one sounder circuit then '+SND2-' and '+O/P2-' should be used ('+SND1-' can be left disconnected).

Fault Indication

Should a fault occur (e.g. damage, loss of power, etc.) the interface unit places a 1kΩ resistor across the '+SND2-'/'+O/P2-' terminals. This will induce a sounder circuit 'overload' or 'short-circuit' fault at the fire alarm panel.

End-of-Line Resistance

Under quiescent conditions the '+SND2-' terminals are connected directly to the '+O/P2-' terminals. Similarly, the '+SND1-' terminals are connected directly to the '+O/P1-' terminals. This allows the fire alarm panel to monitor the sounder circuits as normal. Each sounder circuit should be terminated with the end-of-line resistor specified in the panel installation manual.

In an alarm condition (e.g. 'alert', 'evacuate', etc.) the interface unit breaks the connections between the '+SND-' input terminals and the '+O/P-' output terminals. The interface unit then has its own connection to the sounder circuit(s).

N.B. During this time the fire alarm panel will no longer be able to 'see' the actual end-of-line resistors.
You should place 'dummy' end-of-line resistors in the terminals marked 'STG2 EOL' and 'STG1 EOL'. The values of these resistors will be the same as the end-of-line resistors used at the end of the sounder circuit(s).

Gas Eextinguishing Interface Control Unit

Technical Specification

Supply Voltage Range:	17-28V DC
Current:	45mA (active alarm), 16mA (quiescent)
Remote Tone Switching:	Provision for 4 alarm stages (plus a default warning stage)
Operating Temperature:	- 25°C to +70°C
Casing:	Polycarbonate

Installation

    a. The interface connects a gas extinguishing control panel to Klaxon's Voice-Enhanced Nexus/Sonos sounders.

    b. The interface takes its supply ('+AUX-') from the 24V Auxiliary Output from the panel.

    c. The Sounder 1 (1st Stage Sounder) Output of the gas panel should be connected to the '+SND1-' input terminals of the interface.

    d. The Sounder 2 (2nd Stage Sounder) Output from the gas panel should be connected to the '+SND2-' input terminals of the interface.

    e. The Voice-Enhanced sounders are then connected to the '+O/P1-' and/or '+O/P2-' terminals of the controller. Each chain of sounders should be terminated with the end-of-line resistor specified for the gas panel being used.

Wiring
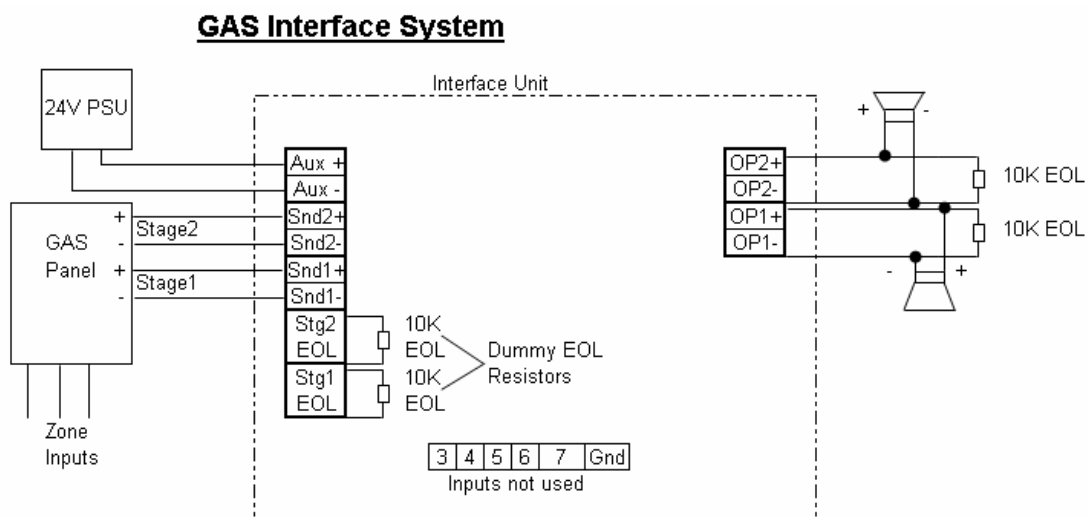
In none-alarm condition the SND1 and SND2 inputs are connected to the OP1 and OP2 outputs. The Panel uses reverse monitoring when looking at the EOL Resistors.

An Alarm condition switches two relays to disconnect OP1 and OP2 from the SND inputs and connects the panel to the Stg1 and Stg2 dummy EOL resistors.

Messages

       a. If there is a Loss of Power or an interface fault a default message is played.
       b. When a pulsed signal is transmitted on Stage1 input the interface takes control of the sounders from the Panel and initiates the Stage1 or 'Alert' message.
       c. When a pulsed signal is transmitted on Stage2 input the Stage2 'Gas Release imminent' message is played.
       d. When there is a constant voltage applied to Stage1 the 'Hold Off' message is played
       e. When there is a constant voltage applied to Stage2 the 'Gas released' message is played.

Controls

Gas Extinguihing Panel Selection

The interface controller will work with all common types of Gas Extiguishing panel. There is a 5-way dipswitch inside the interface that is used to describe the gas panel being connected to.

N.B. These switches must be set *before* power is applied to the '+AUX-' inputs of the Klaxon controller; the controller will not acknowledge switch changes after power has been applied.

<div align="center">

DIP 5 OFF

DIP 1 ON:	*Alert (Stage 1)*: Continuous (SND1)
DIP 1 OFF:	*Alert (Stage 1)*: 1s ON/1s OFF (SND1)
DIP 2 ON:	*Gas Hold*: 1s ON/2s OFF (SND2)
DIP 2 OFF:	*Gas Hold*: 1s ON/3s OFF (SND1)
DIP 3 ON	*Gas Hold*: Panel reverts back to Alert (after Evacuate)
DIP 3 OFF:	*Gas Hold*: See DIP 2
DIP 4 ON	*Gas Hold*: 'Quick Hold' - doesn't wait for 3s after initial '1' (see DIP 2 OFF)

</div>

Dipswitch Settings for Common *Gas* Panels

Manufacturer	1-2-3-4-5	
Advanced Electronics	1-1-0-0-0	
Kentec	1-0-1-0-0	(1 = 'ON')
Kidde	0-0-0-0-0	
	or 0-0-0-1-0	

Gas Mode

In GAS mode (**DIP 5 OFF**) both the '+SND2-' and '+SND1-' inputs are read by the interface unit. If you only want to use one sounder circuit then '+O/P2-' should be used.

Fault Indication

Should a fault occur (e.g. damage, loss of power, etc.) the interface unit places a 1kΩ resistor across the '+SND2-'/'+O/P2-' terminals. This will induce a sounder circuit 'overload' or 'short-circuit' fault at the fire alarm panel.

End-of-Line Resistance:

Under quiescent conditions the '+SND2-' terminals are connected directly to the '+O/P2-' terminals. Similarly, the '+SND1-' terminals are connected directly to the '+O/P1-' terminals. This allows the fire alarm panel to monitor the sounder circuits as normal. Each sounder circuit should be terminated with the end-of-line resistor specified in the panel installation manual.

In an alarm condition (e.g. 'alert', 'evacuate', etc.) the interface unit breaks the connections between the '+SND-' input terminals and the '+O/P-' output terminals. The interface unit then has its own connection to the sounder circuit(s).

N.B. During this time the fire alarm panel will no longer be able to 'see' the actual end-of-line resistors.
You should place 'dummy' end-of-line resistors in the terminals marked 'STG2 EOL' and 'STG1 EOL'. The values of these resistors will be the same as the end-of-line resistors used at the end of the sounder circuit(s).

Industrial Interface Control Unit

Technical Specification

Supply Voltage Range:	17-28V DC
Current:	45mA (active alarm), 16mA (quiescent)
Remote Tone Switching:	Provision for 4 alarm stages (plus a default warning stage)
Operating Temperature:	- 25°C to +70°C
Casing:	Polycarbonate

Wiring

Industrial 2-Wire Interface System
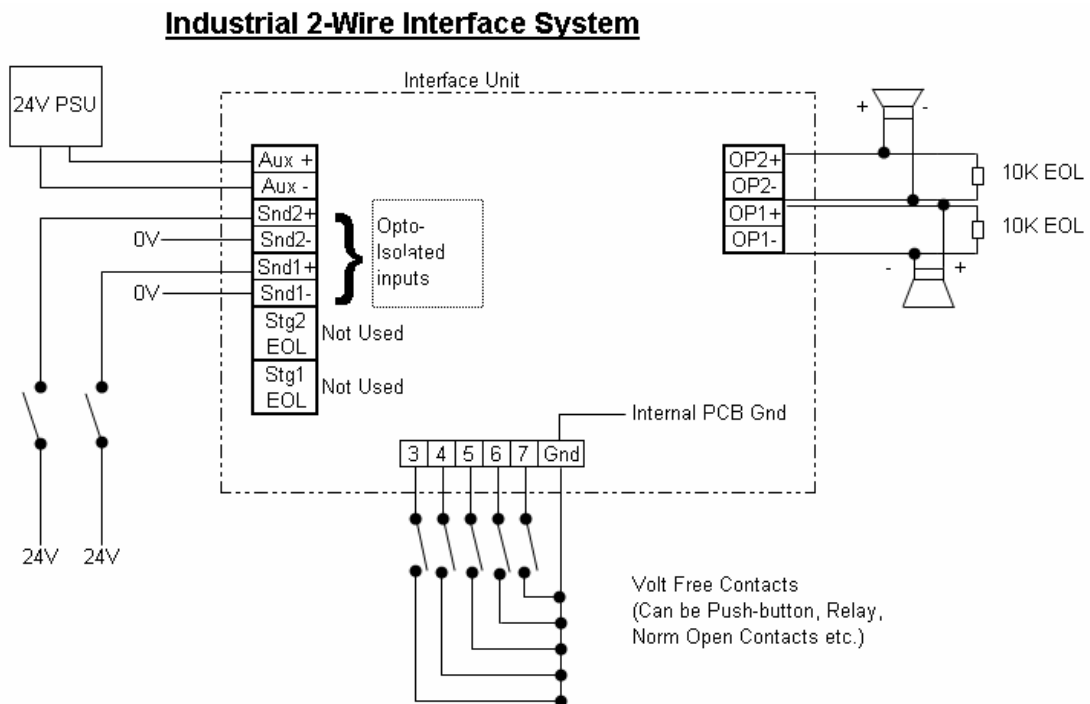
Note: Messages have set priorities (Message 7 has priority over message 6 5,4,3,2,1. Message 3 has priority over 2 and 1 etc)

Messages 1 and 2 are controlled by applying 24V DC to either Snd1 or Snd2 inputs on the interface unit.

Messages 3 to 7 can be controlled by 5 separate volt-free contact inputs to the interface unit that can be activated via Push-buttons, Relays or Normally Open Contacts etc.