



INSTALLATION NOTE

PS2 SOUNDER

Overview

The **PS2** Sounder is one of a range of sounders manufactured by Pertronic Industries. The **PS2** generates the evacuation and alert tones as specified by AS2220. The **PS2** can also be used to generate an alert signal acceptable to NZS4512:1997 (Amendment Two) by giving an evacuation tone sweep every 15 seconds.

The **PS2** has a maximum sound pressure level of 98dBA with a sound distribution pattern shown below. The sound level may be adjusted by the volume control.

The **PS2** is normally connected to the monitored bell or sounder circuit of a fire alarm panel and to the LED drive output of a conventional or analogue addressable detector. The **PS2** will sound the evacuation tone when the detector is in alarm. If the bell circuit is reversed when the detector is normal, the evacuation tone or alert tone will be sounded—depending on the state of the **ALERT IN** terminal or jumper **J3** of the **PS2**.

The **PS2** may also be powered from the analogue addressable loop. In this case, the **PS2** will sound the evacuation tone when the detector is in alarm.

The **PS2** may be mounted in a standard single-gang electrical flush-box fitting and is supplied with a protective plastic cover for installation and building construction use.

Specification

Dimensions: 117mm (height)x 74mm (width), 12mm (depth above flush-box)
Designed to fit into a standard flush-box fitting.

Colour Options: Red or White.

Sound Level Output: Sound pressure level at 1m (± 3 dB) Alert, Evacuation: 95dBA (12V)
98dBA (24V)

Power Requirements: **BELL IN** terminal (Supplied from the bell circuit or analogue loop):
Operating Voltage 9.5V to 30Vdc
Quiescent current (non alarm) 1.2 μ A (12V, 24V)
Operating current (alarm state) 8mA average, 12mA peak (12V)
14mA average, 22mA peak (24V).

Controls: **DETECTOR IN, DETECTOR OUT** for detector activation (Evacuation).
Connect the detector LED output to the corresponding +/- terminals.

J4 for conventional or analogue addressable detectors:
Insert link for conventional detectors.
Remove link for analogue addressable detector.

ALERT IN, ALERT OUT for externally operated AS2220 tone control:
Open circuit for Evacuation on Bell reversal,
0V for Alert on Bell reversal.

J3 for internally operated AS2220 tone control:
Insert link for Alert on Bell reversal.
Remove link for Evacuation on Bell reversal.

Volume Control pcb-mounted potentiometer to adjust sound output level. 20dB range.

Multiple Operation: Up to 5 **PS2** sounders may be controlled by the LED output of one detector.

NOTE: J4 must be REMOVED for ANALOGUE detectors
J4 must be FITTED for CONVENTIONAL detectors



Operation

When the **PS2** is connected only to the analogue addressable loop (no bells circuit—refer to figure 1), only the evacuation tone is available. This is sounded when the connected detector or detectors are in alarm.

When the panel bells or zonal bell driver are connected with the analogue addressable loop connection (refer to figure 2), both evacuation and alert tones can be generated by the sounder. This depends on the state of the **ALERT IN** terminal and on whether the connected detector or detectors are in alarm. The table shows the effect of the inputs on the tone generated by the **PS2**.

Figure 3 shows the configuration for conventional circuit operation. In this case the bells circuit must be connected.

The **ALERT IN** (or **ALERT OUT**) terminal is connected directly or through a relay contact to the battery negative or 0V to enable the alert tone when the bell circuit is reversed (no detector alarm). (The **ALERT IN** and **ALERT OUT** terminals are physically connected together on the **PS2** pcb). These terminals may be connected to other **PS2** sounders in order to simultaneously enable or disable the alert option.

The internal link, **J3**, may be used to permanently select the alert mode instead of externally wiring via the terminals. Refer to figure 5 for the location of **J3**.

Up to 5 detectors may be connected in parallel to the **Detector IN** terminal to activate the **PS2** from different detectors. Similarly, one detector can be wired to up to 5 **PS2** sounders to activate multiple sounders from one detector. These arrangements are shown in the figures.

PS2 Operation

Panel Bell Circuit	Detector IN (insert J4 for conventional)	ALERT IN (or J3 inserted)	Tone Generated
Monitor mode	Normal	Open	None
Don't care	Active	Don't care	Evacuate
Active	Normal	Open	Evacuate
Active	Normal	0V (inserted)	Alert

Some bell driver circuits can provide a pulsed signal to the **PS2** to give an alternative alert signal using the evacuation tone. The sequence is:

- 3.75 seconds – evacuation tone (one cycle)
- 12 seconds – silence
- 3.75 seconds – evacuation tone
- 12 seconds – silence, (repeated).

This alternative alert signal complies with NZ4512.

Mixing Sounder Types

PS2 sounders may be connected to a group of PSB sounders so that the detector alarm can be broadcast in near locations where there are no sounder bases.

Because of electrical loading, there are limitations to the number and type of sounder that may be connected together. These limits are shown in the table:

Limits to the number of PS2s that may be connected to groups of PSBs

Up to	5 PS2s	4 PS2s	2 PS2s	2 PS2s	2 PS2s
May be connected to a group of	1 PSB	2 PSBs	3 PSBs	4 PSBs	5 PSBs

Note that the PS2s will not sound synchronously with the PSBs.

Connection Diagrams

Fig 1 F100 & F120 Loop Powered – Local Only

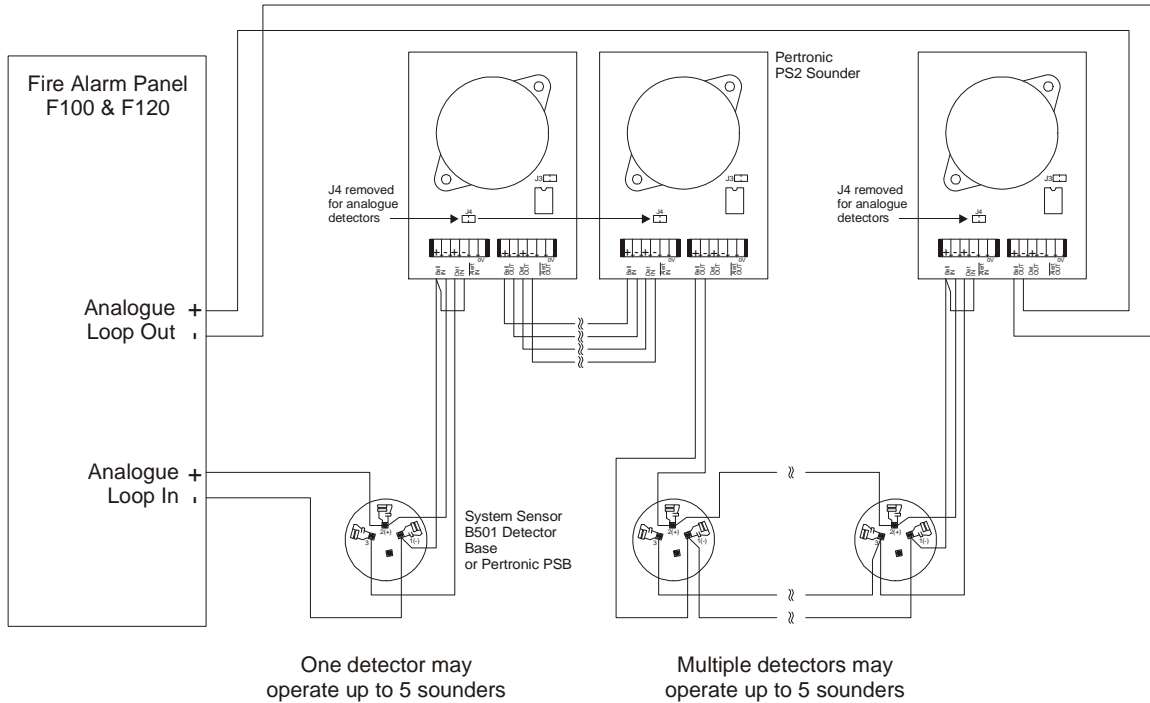


Fig 2 F100 & F120 – Local & Global Sounder Operation

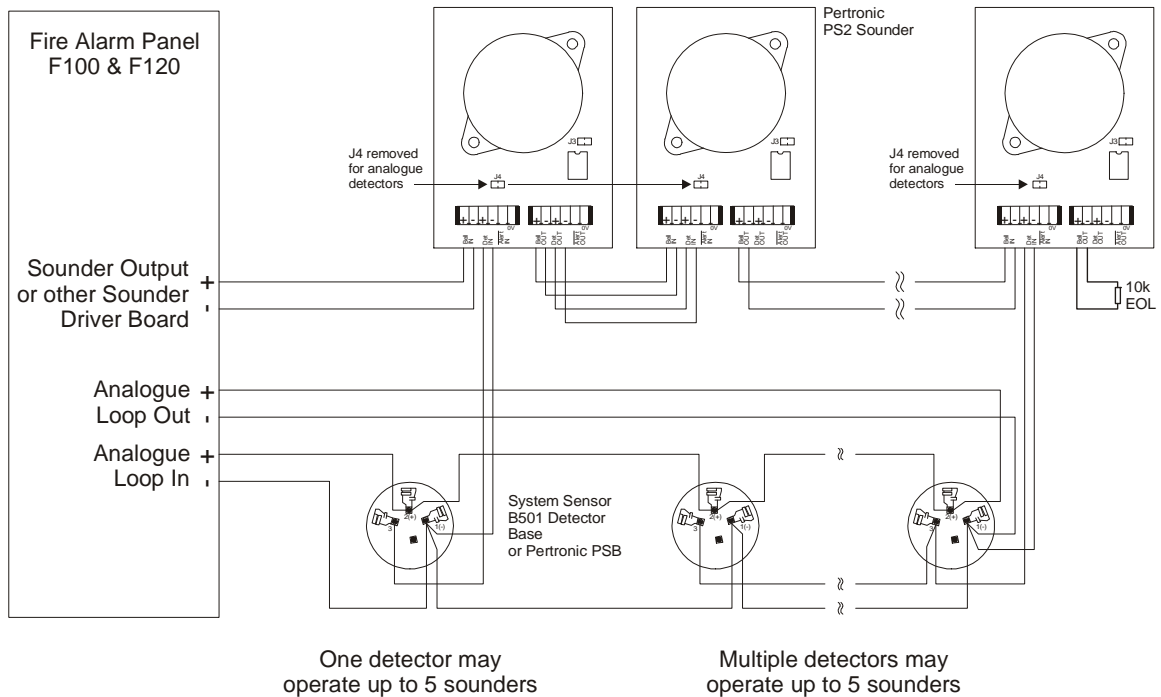


Fig 3 Conventional Detector Operation

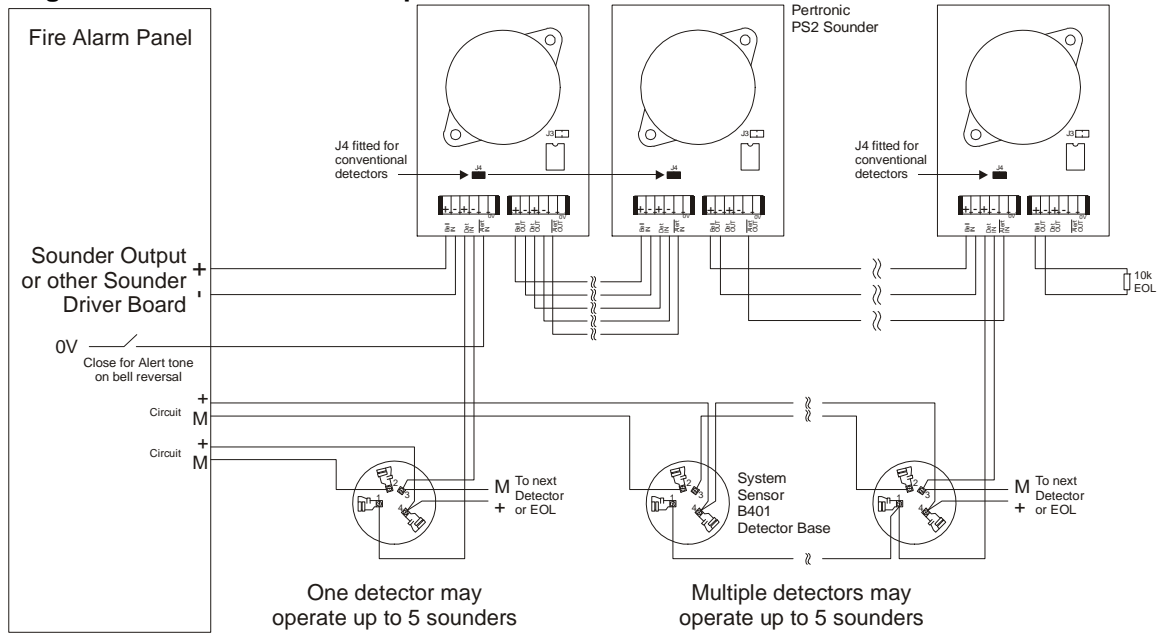


Fig 4 Connector Layout

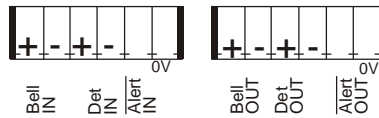


Fig 5 J3 / J4 Location

J4 must be REMOVED for ANALOGUE detectors *

J4 must be FITTED for CONVENTIONAL detectors

* J4 fitted with an analogue detector may cause a bell fault.

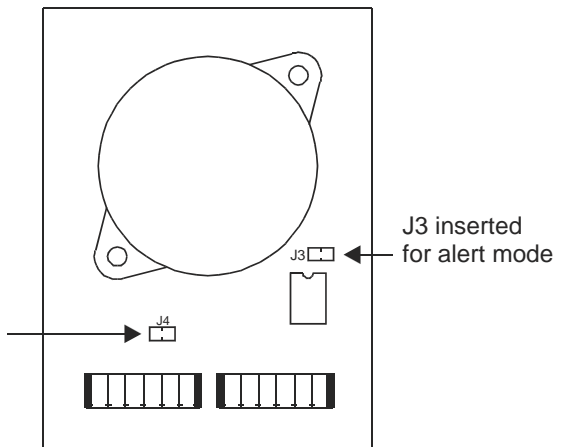


Fig 6 AS2220 tone characteristics

