

# PERTRONIC INDUSTRIES LTD

## INSTALLATION NOTE Pertronic 8 Spur AA Isolator Board



### Overview:

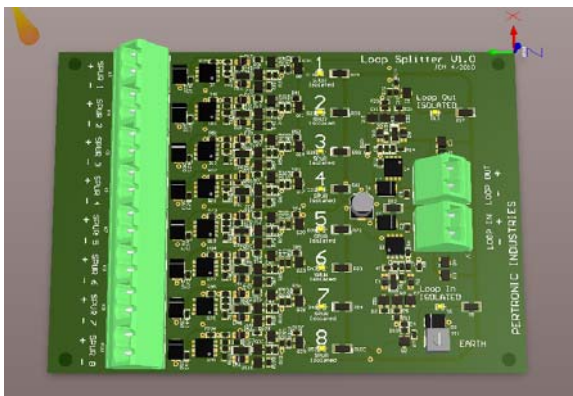
The Pertronic 8 Spur AA Isolator Board (8SAAIB) is designed to ease the process of conversion from a conventional fire system to a Pertronic analogue addressable one. The 8SAAIB permits the use of spurs off the analogue loop, where conventional detector-style wiring may already be in place, and provides short circuit isolation between each spur. Each spur should cover no more than a single zone of detection.

### Features:

- Allows connection up to eight “spurs” of analogue addressable detectors and modules into an analogue-addressable loop.
- Provides short circuit isolation for each spur to protect the remainder of the loop.
- Provides short circuit isolation either side of the 8SAAIB *loop-in* and *loop-out* connections to protect the entire circuit board from cable faults on the loop.
- Identifies any spur with a short circuit by illumination of dedicated amber LED indicators.
- Permits easy mounting with a common circuit board footprint.

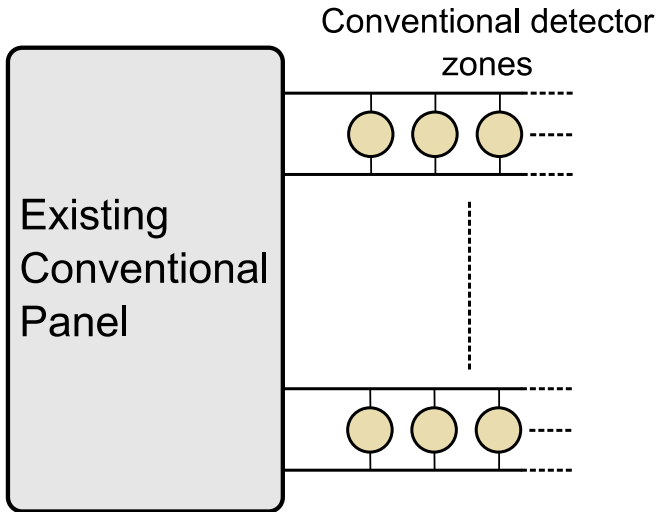
### Specifications:

PCB dimensions	137.5mm x 96.5mm
Mounting holes, four 4mm diameter, centred at	127.5mm x 89mm
Isolation threshold	Loop voltage $\leq 4.8V$
Restoration threshold	7.5V
Switch on resistance (loop in to loop out)	0.42 $\Omega$
Switch off resistance (loop in to loop out)	68k $\Omega$
Input voltage (max)	45V
Standby current at 24VDC	1.5mA
Isolation current	16mA per isolated spur
LED Indications	10 x yellow (1 per isolator)



**Functional description:**

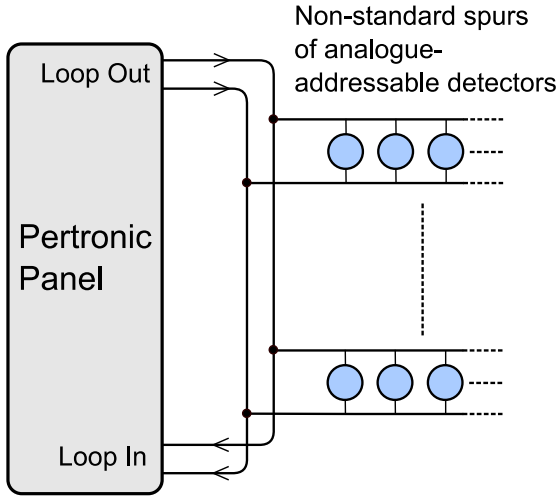
When upgrading a fire system from conventional to Pertronic analogue addressable, the system wiring will normally consist of several zones of conventional two-wire devices (Fig. 1 below).



**Figure 1: Existing system being replaced**

If keeping the conventional devices, a Pertronic 8 Way Loop Responder is usually used to interface them to the new Pertronic panel.

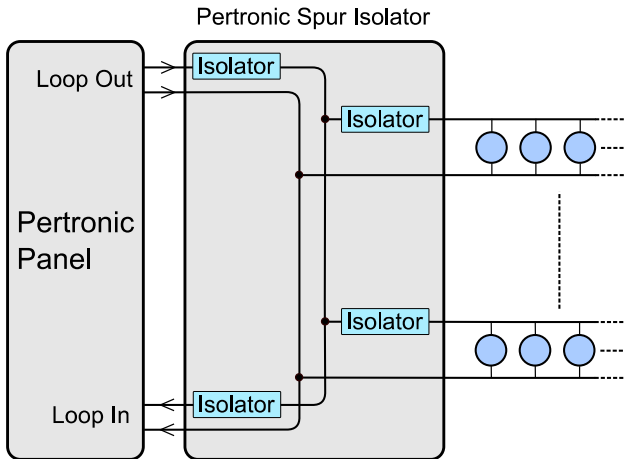
However, if the system is to be upgraded to analogue-addressable devices, it may not be convenient or financially viable to provide the ideal loop-circuit return wiring for these devices. In this situation, *spurs* off the actual analogue loops may be used. However, to protect each separate zone (spur) of devices from cable faults occurring on any other zones on the system, each spur must have short circuit isolation. See Figure 2 below for an illustration of the isolation problem.



**Figure 2: Non-standard “loop” wiring**

The 8SAAIB solves the isolation problem, despite use of the non-optimal spur wiring style. It does so by automatically isolating a spur if a short circuit fault occurs. Additional isolators at the Loop-In and Loop Out cable termination points allow all the spurs to continue operating if a fault occurs on either side of the analogue loop. See Fig. 3 below.

A common form factor is used so that the circuit board can easily be mounted in Pertronic cabinets.



**Figure 3: The Isolated Loop Spur solution**

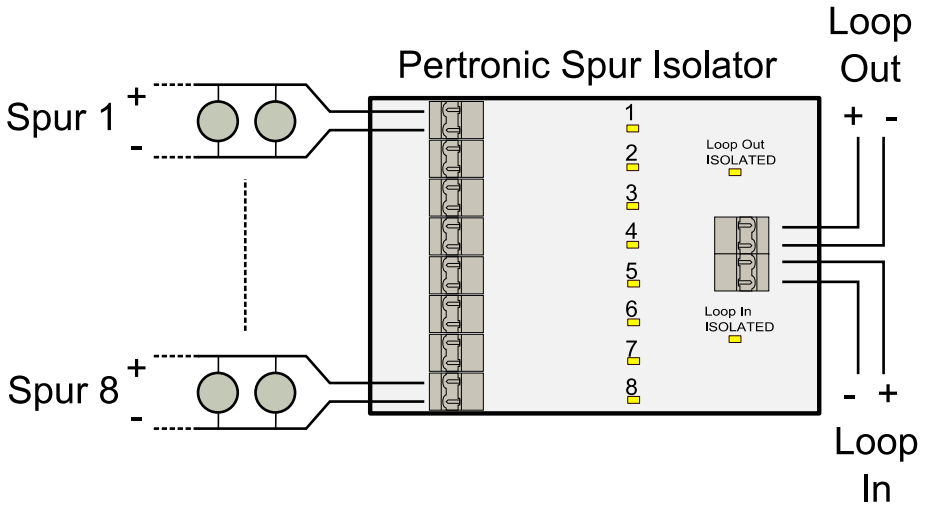
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**Connections**

All terminals are clearly marked on the PCB. The Loop In & Loop Out connectors are positioned on one edge of the circuit board, separate from the isolated spurs.

The spur wiring intentionally imitates the polarity of Loop Responder connections that may have been previously installed. Therefore the upgrade process from Loop Responders to full analogue addressable is made simpler. See Figure 4 below.



**Figure 4: 8 Way Spur AA Isolator Board connections**

**Product Code:**

Description	Code
8 Spur AA Isolator Board	8SAAIB