PERTRONIC INDUSTRIES LTD

FIREBITS

September 2003

F100A Panels Used in Rugby Stadium Upgrades

Pertronic F100A analogue addressable alarm systems have featured in recent upgrades of two well known rugby arenas - Homestead Stadium, Invercargill (right), and Waikato Stadium, Hamilton (below).

As Homestead Stadium has no sprinkler system, a full analogue addressable type four fire alarm system was installed. It provides specific location details of any device activation - crucial information when dealing with large crowds, to minimise disruptions and eliminate panic. The F100A fire alarm panel is also interfaced to an EWIS system, and an LCD mini mimic is positioned in the admin area to give staff full and detailed information on all system events in plain English text.

The main stand at Waikato Stadium has a sprinkler system plus an analogue addressable manual call point system - critical to know the exact location of even a call point activation during a major event. A full F100 LCD mimic (a replica of the fire alarm panel keyboard) is located in the management office, allowing full remote control of the fire alarm system during these events. Additionally, an "event switch" introduces a timed delay on manual call points signalling the fire service, allowing stadium staff time to verify that the call point activation is in response to a genuine fire and not a malicious act. The seven kitchens throughout the complex each have a stand-alone gas flood system, tripped by local heat detectors and interfaced to the F100A panel.

Variable Temperature Settings on Heat Detectors

The latest analogue addressable heat detectors from System Sensor are microprocessor controlled to give "linear temperature sensing." This means that sensitivity settings can be selected at the F100 or F120 analogue addressable fire alarm panel to generate an alarm at a higher temperature than the normal 58°C.

Detectors can be customised to their individual location if necessary, as temperatures can vary throughout an area, particularly around certain machinery, electrical equipment and manufacturing processes.

The rate of rise model uses the same thermistor and microprocessing technology to provide an alarm when the rate of rise in temperature exceeds 10°C per minute, or exceeds the fixed temperature setting selected.

The detectors use the standard B501 analogue addressable base, making them fully interchangeable with existing System Sensor analogue addressable heat or smoke detectors.

F100A panel sensitivity settings are:	Pre-alarm	Alarm
Level 1 (normal)	54°C	58°C
Level 2	64°C	77°C
Level 3	81°C	96°C
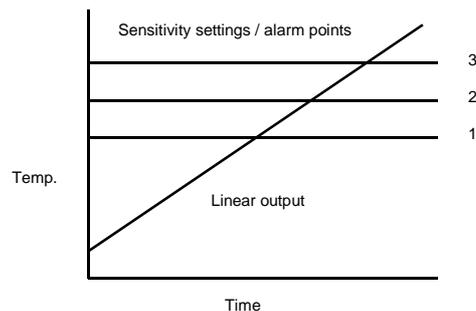
Product codes are:
5251P   Fixed temperature
5251RP   Rate of Rise & Fixed Temperature

Rate of rise heat detectors can assist in detecting fires before the temperature reaches 58°C at the detector head. However, they can also generate false alarms if installed in areas where temperature increases may be greater than 10°C per minute as part of the days normal events (for example, around heaters, boilers, hot steam). Some thought needs to be given to the environment the heat detector is being placed in to ensure the appropriate detector type is chosen for a particular application.

F120 Panel Chosen For Fiji Airport

A Pertronic F120 analogue addressable fire alarm system has been installed at Nandi International Airport as part of the building's upgrade and refurbishment. Eight data loops have been used, with the system supporting both conventional and analogue addressable detectors, in addition to three LED indicating mimics and one LCD mini mimic. A GPIB (general purpose interface) developed by Pertronic engineers in-house is connected to a desktop printer to give airport staff a printed copy of system events, all of which are date and time stamped. The fire alarm panel is also interfaced to the airport's PA system for the transmission of evacuation messages.

DBA's And Subsidiary Stop Valve Isolation Switches

Under the sprinkler Standard, NZS4541, there is a requirement for SGD-DBA's to have isolation switches for subsidiary stop valves in addition to the main valve isolation switch.

All SGD-DBA's manufactured by Pertronic Industries from August 2003 onwards have this capability added to the product as a standard feature - at no extra charge for the unit.

In addition, there is a "Subsidiary Stop Valve Isolation Board" kitset available, for retrofitting to existing SGD-DBA installations - product code is SGDBASSV. Please contact Nigel Lemmon in Wellington or Rob Fenton in Auckland for a data sheet on this kitset, which is straightforward to install.

Fire Alarm Panel Earth Faults - And Laptops

Earth faults and fire alarm panels do not make good bedmates. Damage can occur to components and the integrity of the entire fire alarm system can be compromised. All Pertronic fire alarm control panels have integral earth monitoring which gives a defect warning if external wiring is in contact with earthed metal or other external voltages.

It is important, in any installation, to ensure that all fire alarm panel wiring is isolated from the building earth (i.e. "earth free"). This is a requirement of NZS 4512:2003 for zone circuit wiring (clause 402.2 (i)).

It is equally important that all earth faults are investigated and cleared to ensure correct panel operation.

However, there is one situation where even greater care is necessary. Under no circumstances should an earthed laptop be plugged into a panel which is showing an earth fault. This may result in damage to the panel and/or the laptop, as the laptop will provide an earth path for any external voltage. Always check that the panel is clear of earth faults before plugging in the laptop.

If it is ever necessary to use a laptop on a panel with an earth fault, then use the laptop in battery mode without the mains power pack connected (or use an isolated mains power pack).

A word of warning - do not disconnect the earth strap, which connects the main Printed Circuit Board to the metal cabinet. This does not solve the problem; it only means that the panel does not display the fault. The fault is still present, but is no longer registered.

Earth fault monitoring is used on all Pertronic fire alarm control panels - F1, F4, F16, F100 and F120. This monitoring provides advanced warning of field wiring problems, which could cause system failure or false alarms. Earth fault warnings should always be investigated and rectified.

Fire Rated Loop Cable

The requirement to use fire rated cable on analogue addressable data loops is specified in NZS4512:2003, for installations where the outbound and inbound data loop from the fire alarm panel shares the same route or conduit or trunking (refer clause 402.2 (p)). For example, data loop cable running up and down a riser should now be fire rated cable. Pertronic Industries can now access fire rated twisted pair cable, in 100 metre drums. Initial orders will be subject to a lead time of approximately 6 weeks. Please contact Brent Pells in Wellington or Rob Fenton in Auckland for co-ordination of initial orders.

Space & Cost Saving Metalwork

The compact size of Pertronic F4 fire alarm panels made the fitting of a 20 watt amplifier into the cabinet space a difficult exercise, when an amplifier and speakers were used for the "bells" circuit instead of sounders. A special stand-off bracket is now available which holds the amplifier out over the masterboard, eliminating the congestion problem. It also removes the less desirable option of mounting the amplifier on the inside of the door. The "F4 mini-gen bracket" can be ordered against product code BKPI545MGEN.

There is also the occasional need to replace an existing Pertronic F30 or F40 panel mimic display with a newer F100/F120 LED mimic display. Rather than remove the existing cabinet (not always practical to do so) a specially modified gearplate is available to mount the new F100/F120 LED modules inside the older cabinet. Product code for the F40 to F100 conversion gearplate is CBPI544GP - note that the formica index needs to be externally mounted.

Change To Cellphone Number

Please note that the cellphone number for Rob Fenton, Auckland office, has changed from 027 2208885 to 021 2208885 - all other contact details remain the same.

New Series 300 Detectors Win European Award

The Series 300 range of detectors from System Sensor Europe form the integral part of a detection system which has won a prestigious French award for innovation.

The **Concours de l'innovation** award was presented at the 19th "Salon de la Protection et de la Securite" held in Paris late last year, and was judged by a panel made up from journalists, members of the profession and end users.

The press release announcing the award went on to read - "Based on the highly successful Series 300 family, manufactured by System Sensor Europe - the world's largest detector manufacturer - the detectors are approved by AFNOR and certified by CNMIS to EN54. The true multi-sensor photo-thermal, photoelectric and thermal detectors combine the sophistication of an analogue addressable unit with the low cost, ease of installation and simplicity of a conventional detector. Automatic drift compensation is built-in to the multi-sensor and photoelectric units; a unique remote programmer unit enables the sensitivity to be adjusted, maintenance dates to be read and written to the device, chamber contamination levels to be read and the detector set into alarm, all from ground level."

Series 300 Detectors On Pertronic Fire Alarm Panels

Series 300 detectors have a higher current draw than other System Sensor detectors, and this imposed some initial limitations to the number of these new detectors that could be supported on each fire alarm panel circuit. Panel software upgrades have been carried out to increase Series 300 detector numbers on conventional panel circuits and on F100/F120 loop responder boards. Panel software and hardware versions together with detector quantities per circuit are detailed below:

Detector Type	F1 Panel	F4 Panel	F16 Panel	Loop Responder
(Compatible with panel software and hardware	S/ware v 2.20	S/ware v 2.25	S/ware v 6.60	S/ware v 3.00
versions shown, or later versions)	H/ware v 1.40	H/ware v 2.20	H/ware v 2.10	H/ware v 2.31
2351E Photoelectric Smoke Detector	8	27	27	40
2351TEM Photoelectric & Thermal	5	13	13	21
4351E Fixed Temp. Thermal Detector	8	27	27	40
5351E Rate of Rise & Fixed Temp.	8	27	27	40

Note- when mixing detector types on a circuit it is important not to overload that circuit. A full list of all System Sensor detector models and their maximum numbers per circuit is also available - please contact Brent Pells in Wellington or Rob Fenton in Auckland for a copy.