

PERTRONIC INDUSTRIES LTD

FIREBITS

FIRE-NZ Edition - September 2006

Welcome to the **FIRE-NZ** Conference edition of **FIREBITS**, Pertronic Industries' quarterly newsletter. Our company is proud to be a regular supporter of **FIRE-NZ** - an important annual event for our industry.



Another Technology First For Waikato University

Waikato University is no stranger to technological innovation, having pioneered New Zealand's first gateway to the Internet. It is only fitting, then, that the university should be the first site in the country to make use of new Internet-based technology developed by Pertronic Industries Ltd - remote access to fire control panels through an Internet connection..

Pertronic analogue addressable control panels have a customised data conversion module fitted, which in turn is connected to the building's Local Area Network server or hub. An IP address is assigned to each control panel, and proprietary software developed by Pertronic Industries for communicating with the control panels is loaded onto a PC. The PC operator can then connect to the control panel, receive information from it and send commands to it in much the same interactive manner as accessing an airline's web site to make online bookings.

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VESDA



Remote Internet Access To Fire Control Panels

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Waikato University's building facilities management were keen to explore ways, with their fire alarm service contractor, of better controlling the costs incurred each year for the numerous detector isolations (and reinstatement) to prevent false alarms from maintenance work or theatrical smoke. Remote internet access provides a tool to carry out these functions cost-effectively, and is supported with well defined procedures to ensure that devices do not remain isolated longer than necessary, and that the integrity of the fire alarm system is not compromised.

The fire alarm service contractor supports this innovation as it helps them provide a better service to the University. The contractor can also use remote internet access to see information displayed on the control panels, or to access the history log to review recent events. Staff from both the University and the service contractor can remotely download reports from the control panels to check on contamination levels in smoke detectors, or download the history log itself.

Remote internet access can also be used by Pertronic Industries' engineers to provide high level engineering support, if necessary. Multiple users can be connected to the same control panel simultaneously, allowing one user to interact with the panel while other users observe.

Unauthorised access to the control panel is secured in a number of ways. The correct version of Pertronic Industries' proprietary software must be loaded onto the connecting PC, the IP address for the control panel must be known, and the engineering password for the control panel must also be known. Additionally, changes to the control panel's programming, or configuration, can not be made remotely - a physical switch inside the control panels prevents this from occurring.

Manual Callpoint And Heat Detector Compatibility

Questions have been asked about the compatibility of Pertronic indicating manual callpoints and heat detectors used on fire alarm systems installed to NZS4512:2003 - are the devices compatible with fire alarm panels already installed under NZS4512:1997?

These devices are compatible with conventional fire alarm panels running the following software versions:

F1- version 2.3 or later

F4 - version 2.26 or later

F16 - version 7.1 or later

In addition, loop responder boards (used on analogue addressable systems) running software version 3.08 or later are compatible. Conventional panels or loop responder boards with software versions earlier than these may not be compatible - a software chip upgrade may be needed. Please check with Pertronic Industries' technical staff in Wellington or Auckland.

Pertronic Industries Opens Office In China

After three years of product development and planning, Pertronic Industries opened its first office in China recently. The city of Shanghai was chosen for the company's base - it is the country's largest city, with a population of over 16 million, and is at the core of the huge economic growth in China.



The thrust into China is being spearheaded by Bruce McNabb. Bruce was head of R&D at the company's Lower Hutt head office and has now transferred to Shanghai on a three year secondment. A Pertronic F120 analogue addressable panel (shown left) has been developed specifically for the China market and has completed a rigorous testing procedure at the China National Testing Centre (CNTC).

Part of the approvals process is to have the manufacturing facility audited by the CNTC, and three auditors visited Lower Hutt in August. As a result of that visit, Pertronic Industries has now passed the audit requirements for the China Standard, which complements the company's existing ISO 9001 certification.

COPTIR - The Ultimate In False Alarm Immunity

The problem of false alarms has been at the forefront of the fire protection industry for some time, and this is an indication that the industry is taking the problem very seriously. Both panel and detector manufacturers continue to invest heavily in software and hardware developments to reduce the incidence of unwanted alarms, but a lot more still needs to be done to lower the figures to acceptable levels.



The development of multi-criteria detectors (usually a combination of photoelectric and thermal sensors) has been one of the primary methods used to improve detector performance, and has provided a higher level to move forward from in the search for more sophisticated devices. That search led to the development of COPTIR.

It is well known that every fire has a different profile during its development. A slow, smouldering fire may generate much smoke but little heat, while at the other extreme an alcohol fire may generate high temperatures quickly with little or no smoke. However variable the fire - and the combustible material - all fires have three elements in common: they produce carbon monoxide, heat and particulate matter. The proportions change from one fire to another, as does the time for each phase, but these elements are always present, in varying quantities. Light is also emitted once flames have developed.

This was the starting point for the COPTIR analogue addressable multi-criteria fire detector. It combines four independent sensors: **CO**, **Photoelectric**, **Thermal**, and **Infra Red**. By measuring and processing the individual sensor outputs with intelligent algorithms, a multi-sensor detector has been developed that has a high immunity to non-fires, yet changes to become very sensitive as soon as fire characteristics are sensed.

The four sensor outputs are managed to adjust the detection profile of the device as the ambient conditions change. Algorithms continually change the sensor thresholds, time delays, sensor combinations and sampling rates to detect fires faster and improve false alarm immunity. The IR sensor is a critical component, and operates as a light detector, not a flame detector. It helps the detector recognise specific false alarm situations, such as welding, and makes adjustments rapidly. Yet when the IR sensor responds to a flicker profile usually associated with flames, the Photoelectric sensor is made more sensitive and, with inputs from the other sensors, COPTIR provides a fast and accurate response to the fire.



COPTIR was tested in 21 different false alarm tests and 29 different fire alarm tests - one of the most comprehensive testing programmes ever undertaken - and showed significant performance improvements over single sensor and multi-sensor products.

For more detailed information, please go to Pertronic Industries' web site home page and click on the link to the System Sensor Europe web site.

Bugs in Detectors - The Perennial Problem

The March 2006 issue of **FIREBITS** featured an article on dirt and bugs in smoke detectors, and Pertronic Industries' Managing Director, David Percy has first hand experience with the problem. He was noisily woken up one night at home by a domestic smoke alarm. An examination of the device the next morning revealed a bug in the detection chamber - some fly spray and a clean out fixed that problem.

But it is not only smoke detectors that bugs can cause unwanted alarms in.

The security system at David's home also operated one day, for no apparent reason. There were no intruders present, and domestic pets had not caused the alarm. Closer investigation revealed a spider busily spinning a web inside one of the sensors, and this had been enough to operate that sensor. A quick clean of the sensor, removal of the spider, and the security system has not false alarmed since.

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Pertronic Systems Networked in Large Projects

A recent determination by the NZS4512 Interpretations Committee has clarified the isolation criteria relating to sector panels. In many installations, one fire alarm control panel will now be able to cover areas up to 22,000m² - rather than 11,000m² - subject to the provisions outlined in section 401 of NZS4512:2003.

Larger projects exceeding this area will still require fire alarm panels networked together - a regular practice in recent years - to provide the necessary site wide evacuation and silence alarms functions, in addition to sector and zone information, for both occupants and the Fire Service to use.

The Lumley Centre in Auckland's CBD is a 40 level office tower completed earlier this year. Three Pertronic F100 analogue addressable panels are networked together to cover the main tower, with another F100 panel covering the seven levels of car parking, and a fifth F100 panel protecting the retail areas.

Dannemora Gardens retirement complex in Manukau City has one Pertronic F120 analogue addressable panel covering the building pictured (lower right). Significant expansion of the site behind the building shown has lead to a second F120 panel being installed and networked to the original panel. Network Display Units, with LCD English text displays, provide site wide information for management and staff.

The new headquarters for the Waitakere City Council, which also includes a new train station (to the right of the photo) is protected by two Pertronic F100 analogue addressable panels networked together.

