PERTRONIC INDUSTRIES LTD

FIREBITS

June 2008

Pertronic Panels Networked In Vodafone Upgrade

Vodafone's Wellington headquarters is an impressive tower block situated on Lambton Quay. Formerly known as 'Mobil on the Park,' the building has 10 levels of car parking and 15 levels of office/ commercial space, and has undergone an extensive fire detection refurbishment. A Pertronic F120A panel is installed at Level 1, with a F100A panel installed in the Level 11 plant room. The two panels and the LED mimic are networked together. The F120A panel's keyboard and LCD display have been replaced with a 'Network Control Unit.' This NCU displays all events occurring on both fire panels and provides direct control of the F100A panel from the F120A location, if necessary, in addition to acting as the keypad and display for the F120A panel.

Over 800 analogue addressable smoke detectors and 150 manual call points are installed across the two panels, along with two fire fan controllers and one gas flood interface. Analogue addressable input modules are installed on each level for flow switch and monitored valve inputs off the sprinkler system.

AVF (Alarm Verification Facility) has been activated for smoke detectors in the panels' programming. Pertronic panels have a standard six second delay, or gating, on initial detector activation to prevent alarms from dust specks, electrical spikes, etc. AVF adds an extra 18 second delay to further suppress nuisance alarms, while still being well inside NZS4512 requirements in the time permitted to signal an alarm.

F120A Fire Control Panels - The Second Generation

The Pertronic F120A analogue addressable fire control panel was first introduced to the market ten years ago. Capable of supporting up to 99 detectors and 99 modules on each of its 20 data loops, the F120A was designed for very large buildings or complexes where a larger system than the Pertronic F100A panel was required, with its four data loop capacity. Hundreds of 6-12 loop F120A panels are now in service on both sides of the Tasman, with a number of 14-20 loop panels also installed.

The advanced timer, logic and programming functions of the F120A have been continually enhanced over the past decade, but a significant change has been made to the latest software version in the panel - it now supports **up to 159 detectors per data loop**. Labelled as 'Version Four' software, it allows the F120A to fully utilise System Sensor's addressing capability in their latest analogue heat and smoke detectors - addresses can now be set from 01 to 159 (previously 01 to 99).

With such an extensive change to the F120A software, Pertronic resubmitted the panel to Opus Laboratories for a full compliance retest to NZS4512:2003 (confirmed in Opus Test Report no. 08-527743.00B).

Note that this increase to 159 addresses per data loop applies to heat and smoke detectors only - there have been no changes to the addressing technology for modules, so the F120A continues to support up to 99 modules per loop. Detectors with 99 or 159 address capability can also be mixed on the same data loop.

To highlight this increased detection capacity, the latest F120A panels with Version Four software are produced with a completely new faceplate and keypad, using a mylar membrane (shown right) instead of the white metal face plate and square black buttons.

If necessary, the new Version Four 159 detector software can also be installed in NZS4512:2003 versions of F120A panels already in service, in applications where site expansion meant it was easier to extend existing data loops beyond 99 detectors, rather than add additional loops.
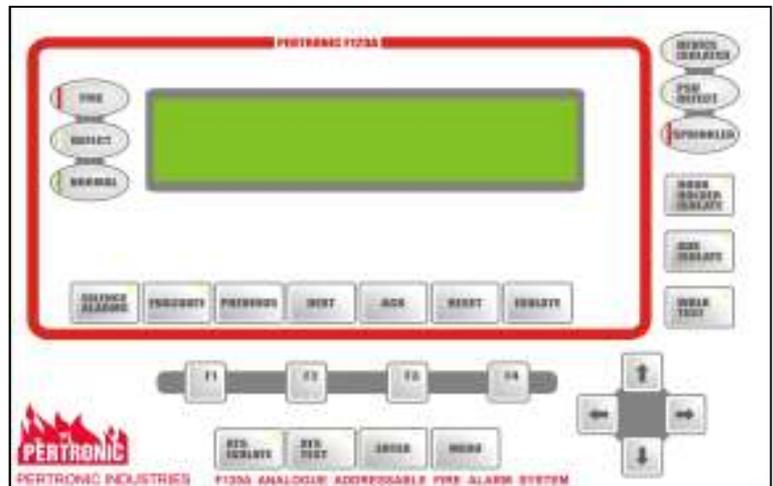
The configuration/programming utility for the new F120A has also been enhanced (version 2.32):

- Time changes for Daylight Saving can now be programmed into the panel.

- A copy & paste function has been introduced, to streamline programming of multiple devices with the same outputs or characteristics. This function applies to the entire line of data, not individual cells.

- A Configuration Summary has been added to the utilities menu, allowing a user-friendly report to be produced (and printed) which clearly outlines the full panel configuration, device settings & outputs, logic & timer events, network inputs, etc. This summary can also be exported to Excel to filter data as required, or to modify sections of the summary. It creates a very useful commissioning document.

- Programming of Type 5 installations, using either Pertronic Apartment Modules or System Sensor relay modules to supervise the evacuation zones, has been made easier. Previously, the Bell relay on each Apartment Module or System Sensor module had to be included in a 'Group,' and any device required to generate a global evacuation (e.g. a heat detector or MCP) was then programmed to operate that Group of Bell relays. New outputs have now been added to the list of programmable outputs. Labeled 'Evacuate' and 'Activate Sounders,' any device programmed with these outputs will automatically operate all relays configured as Bell relays on the system - exactly the same as operating the Evacuate key switch on the panel door. The 'Evacuate' and 'Activate Sounders' outputs can also be programmed from Zone Events, System Events, Logic Gates, Groups and Timers, providing extensive flexibility to system programming.

New Beam Detector Interface Card Simplifies Conventional Installations

Conventional beam detectors manufactured overseas often have their clean contact outputs (for interfacing to a conventional fire panel's detection circuit) configured as normally open, closing in alarm, which is opposite to the requirement of NZS4512:1997. In addition, the latest Standard (NZS4512:2003) does not allow an open or a short circuit to generate an alarm, so the clean contact outputs from a conventional beam detector have to be converted to an electronic signal on the detection circuit.

Pertronic Industries have developed a Beam Interface Card to provide a fully compliant interface with System Sensor 6500RS conventional beam detectors. The Beam Interface Card is mounted inside the beam detector housing and connects directly to the beam detector's remote LED output. This makes the beam detector look like a point-type smoke detector on a conventional circuit to Pertronic F4 or F16E fire panels, or to Pertronic Loop Responders, which in turn connect to analogue addressable fire panels. The beam detector still requires a 24V power supply, but the Beam Interface Card will automatically reset the beam detector when the conventional zone resets, rather than having to break the power supply to reset the beam.

Product code for the Beam Interface card is 6500RSCI, with an installation sheet available from the Pertronic web site.

SGD Kit Available

From the "why didn't we do it sooner" department - When fire alarm companies order SGD's on their own (i.e. not fitted inside a fire control panel) it is often unclear what type of panel the SGD is being fitted to (the panel type determines the loom length and type of stand-offs that are required). Ordering a loom for the SGD is also frequently overlooked.

To make ordering replacement SGD's easier, Pertronic have packaged a "SGD Kit." The kit consists of one SGD7, one 180mm loom (the longest needed on any Pertronic fire control panel) and two sets of stand-offs to cover the mounting options. This kit simplifies ordering and fitting a SGD7 to any current Pertronic fire panel (F4, F16E, F100A, F120A). Product code is SGD7KIT.

Indicating Heat Detectors For Concealed Spaces Modified

NZS4512:2003 requires concealed heat detectors that are not in a unique zone, and form part of another zone, to have remote indication into an adjacent normally accessible space (clause 405.4). Pertronic developed remote indicating heat detectors in 2003 to meet this requirement. Newer versions are now available, which have a LED and a remote terminal on the circuit board, allowing multiple concealed heat detectors to be connected to one remote LED indicator - a more cost-effective and tidier installation. The remote LED indicator (code DETREM) has also been modified, with a larger terminal block to make cable connections easier. These modified products will be progressively introduced as existing models run out.

Don't Forget "Alert" Test Switches

A sometimes overlooked requirement of NZS4512 - clause 207.2 outlines the need for an "Alert" test switch on fire control panels in installations where staged evacuation is required, using both Evac and Alert tones. The standard 'Evacuate' switch on the panel is used for testing the Evac tone, without calling the Fire Service. A separate 'Alert' switch is also required to test the Alert tone throughout the complex. Alert switches are not a standard panel feature, and need to be ordered as an extra item - relatively straightforward in analogue addressable panels, using an input module suitably programmed to switch on the Alert tone.

FIRE-NZ Conference 10 & 11 September

This years FPA Conference and product expo will be held on 10 & 11 September at the Ellerslie Convention Centre, Auckland, and is an important annual event for our industry. Pertronic Industries will have its full product range represented, including some new and innovative technical developments. We look forward to seeing you at FIRE-NZ 2008. Details are available from *www.fireprotection.org.nz*

The Importance of Earth Fault Monitoring

All current Pertronic fire control panels have earth fault monitoring capability and a dedicated earth fault monitoring terminal. There are important reasons why the earth connection is necessary and why, in the event of an earth fault, it should not be removed:

- The panel can no longer detect earth faults if the earthing point is disconnected.
- Earth faults can compromise the operation of the panel and may even cause false alarms.
- If a positive or negative earth fault is present and the system then gets an opposite polarity earth fault, the panel may be damaged or damage may occur to other equipment connected to the panel.
- The earth monitoring point is the panel's earthing point for all electrical surge, over-voltage and EMC protection. If the earth connection is removed, the panel will be susceptible to electrical interference and probable lightening damage.

Earth faults may be difficult to find but removing the earth link only masks the problem - it does not solve it.

Pertronic China Update

Many contractors will have spoken with Geoff Tustin, one of the company's Technical Support Engineers in our Wellington office. Geoff has accepted a posting as National Sales Manager in Pertronic Industries' China office, replacing Bruce McNabb who returns to New Zealand after two years establishing a Pertronic presence in China. A replacement for Geoff in the Wellington office will be advised in a future newsletter.

St. Patrick's Cathedral Refurbishment Completed

St. Patrick's Cathedral, in central Auckland, has undergone a major refurbishment in the past two years. Much of the work involved rebuilding and strengthening the walls, internal arches, foundations, flooring, roof supports, and fitting a new roof. A Pertronic F100A fire control panel was installed, with analogue addressable smoke detectors used in all the support areas and offices. Three Vesda aspirating systems were installed to protect the main part of the Cathedral, and are interfaced to the F100A panel.

All Vesda pipe work was stained to match the impressive timber ceiling and is barely visible to the human eye.

The F100A panel can have different detector sensitivities set for day time or night time mode. This   software feature is used in this installation through an interface to the Cathedral's security system.   When the security system is active, detector sensitivity is increased; when the security system is inactive, detector sensitivity is decreased to prevent nuisance alarms.