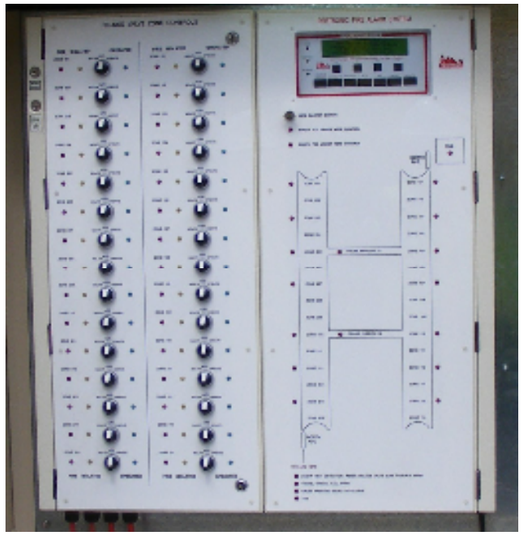
PERTRONIC INDUSTRIES LTD
17 Eastern Hutt Rd, Wingate, Wellington. PO Box 35-063, Nae Nae. Phone (04) 5673229, Fax (04) 5673644.
www.pertronic.co.nz email: sales@pertronic.co.nz
AUCKLAND OFFICE:
119 Lansford Crescent, Avondale. PO Box 15-867, New Lynn. Phone (09) 820 8228 , Fax (09) 820 8284

Toll Road Tunnel Fire Protection (from Page 1)

The control room operator then has a timed period to check the event through the camera network and to take action accordingly, by sending a signal back to the F120 network to operate or isolate the water deluge system for the affected zone/s. If no response is provided from the control room within a certain timeframe, the F120 system automatically operates the water deluge for the zone/s involved.

Both tunnels are interconnected by two cross passages, with each cross passage housing a bank of valve sets for the water deluge system, as shown below right.

Operating the deluge system also calls the Fire Service. Special Fire Service controls are located at the entrance to both tunnels, and include customised F120 panels, below left. Each panel provides LED mimic indication of any alarm events, plus LED indication of the status of any water deluge zones (i.e. isolated or operated). The Fire Service have the ability to manually operate or isolate individual water deluge zones from either control panel through the F120 network.



Vesda Training Courses In May

Vesda training courses are scheduled for Auckland, Wellington and Christchurch during May 2009. These two day courses are conducted by a qualified trainer from Xtralis, Vesda's parent company. Course content includes: an introduction to Vesda smoke detection; product selection; designing a sampling pipe network; commissioning an installation; programming a Vesda detector; software tools; maintenance.

Anyone involved in the design, installation or maintenance of Vesda systems who has not received training in the past three years should attend. Numbers for each course are limited and enrolment details are available on the Pertronic web site - go to www.pertronic.co.nz

PERTRONIC INDUSTRIES LTD

FIREBITS

March 2009

Pertronic F120 Panels Networked In Toll Road Tunnels

New Zealand's first electronic toll road opened to much publicity during Auckland's Anniversary Weekend in late January. Located north of Auckland between Orewa and Puhoi, the toll road incorporates a viaduct to the southern side of Johnstone's Hill, with two tunnels through the hill for separate northbound and southbound traffic (this photo was taken during final construction stages at the southern end of the tunnels).

Each tunnel is a little under 400 metres long, with six Pertronic F120 analogue addressable fire panels networked throughout the installation to supervise the fire detection and water deluge systems. The F120 panel network is also remotely connected through two high level interfaces to the motorway's control room back in Auckland, giving operators real time information from all fire panels and providing the means to remotely operate or isolate the water deluge system as necessary. Fibre optic linear heat detection cable is installed through both tunnels, separating each tunnel into 15 detection zones. These detection zones in turn match up to the water deluge zones. If the linear heat detection system reports an alarm within a specific zone, this information is transmitted via the F120 network to the remote control room. (continued on page 4)

Magnetic Door Holders Available Again

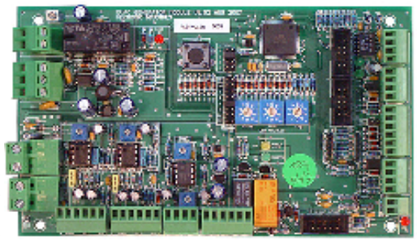
A recent supply 'hiccup' was experienced with 24VDC magnetic door hold open devices from Europe. We are pleased to advise that the hiccup has been cured and we now have these items back in stock - product code is WMAGDR2450.

Larger Evac Amplifiers Available

Pertronic Industries has been making 20 watt and 50 watt amplifiers for several years now, with the 50 watt amplifier capable of providing three separate tone outputs from the 42 different tones in the amplifier's software (e.g. Evac, Alert, and Custom tone). But many projects now require multiple amplifiers, and it is not always convenient or efficient to have multiple evac cables run back to the amplifiers' location.

Pertronic has developed an "Evacuate Generator Module," or tone generator, to be used with larger third party amplifiers, up to 250 watts capacity. The Evacuate Generator Module provides a similar range of tones and flexible programming options to those available in the Pertronic 50 watt amplifier. They include -

- Dual microphone/line inputs with individual volume control and Press to Talk
- Tone and line output volume controls
- Switching controlled by bell relay or RS485 inputs
- 42 tone/voice combinations available
- Fully monitored by fire control panel



The Evacuate Generator Module and third party amplifier could be mounted in the fire control panel if space permitted, although a more common application would be to mount the tone generator and amplifier in a separate evac cabinet with its own monitored power supply. Please discuss any specific requirements with the Pertronic technical support team in Lower Hutt or Auckland. A data sheet on the Evacuate Generator Module is available on the Pertronic web site, listed under 'products/alerting devices/amplifiers.'

Additional Features In Latest Pertronic Network Software

Pertronic network software version 3 was released recently and includes a number of new features -

The programming window in the network utility software v2.08 contains additional fields to display the configured names of the panels that the network events are being programmed to and from (instead of just a panel number). This version of network utility is also backward compatible with all existing networks. However, many of the new utilities features will not be available on networks running earlier hardware and firmware versions.

Pertronic LCD 'mini mimics' fitted with v2.28 or later firmware can now be used as a compact Network Display Unit (NDU) where no network control is required. The mimics can be set to display all events or alarm-only events - very useful displays in hospitals with networked fire systems, for example, to provide staff with site wide information without providing controls that could be wrongly or accidentally used.

If the network installation includes a Network Control Unit (NCU) or a NDU, then the entire network's history log (up to 2000 events) can be downloaded to a laptop from one of these units network cards.

Changes have also been made to the network card hardware, including a microprocessor upgrade to improve network speed and to accommodate other software features. When adding extra fire control panels to an existing network, it is important to check that the network card hardware and firmware is compatible across all cards - new and old - to prevent network communication problems. This may involve updating the firmware in the existing network cards, using a firmware programmer available from Pertronic. It may also involve configuring the new network cards to correctly work with the earlier cards. A detailed Technical Note outlining hardware and firmware changes is available on the Pertronic web site - go to 'Documentation/Technical Notes' (note that this section of the web site is password protected).

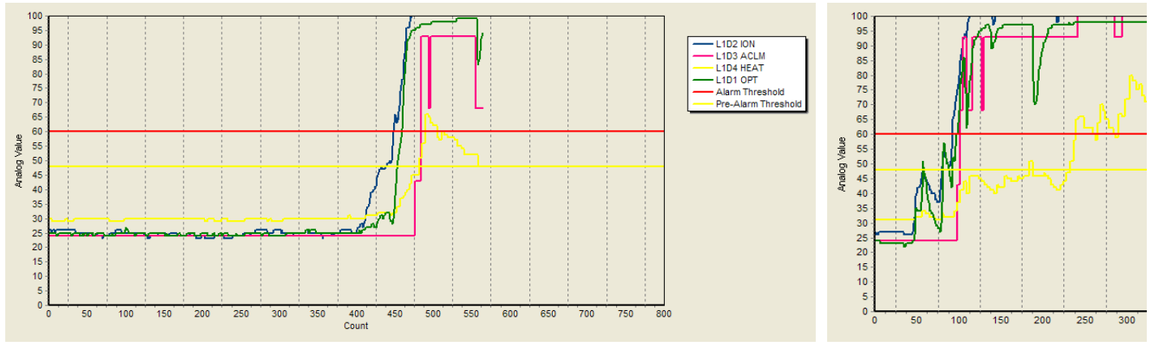
Detector Performance in NZFS Demonstration

In September last year the NZ Fire Service carried out a demonstration on the effectiveness of home fire sprinkler systems in a live house burn in the Wellington suburb of Johnsonville. The demonstration was designed to educate and raise the awareness of property developers, the fire protection community, government officials and the public of the benefits of this technology.

The demonstration was conducted in two stages. In the first stage a sofa was set on fire in a room protected by sprinklers. The closest sprinkler head activated approximately three minutes after the fire had become flaming (a flame height of about 1.2m and spread across 500mm of the first cushion). The continuation of released heat also activated the next closest sprinkler head. While not completely extinguishing the fire (molten, flaming polyurethane under the sofa was shielded from the sprinkler), the sprinklers did contain the fire to only the sofa, with some soot staining to the walls and ceiling area. However, the property - and its occupants - would have been saved.

In the second stage of the demonstration, a similar sofa was set alight in a different room - this time without sprinkler protection. This fire eventually engulfed the entire house, destroying it completely.

As part of the demonstration, Pertronic Industries installed analogue addressable smoke and heat detectors in the hallway between the two rooms containing the sofas, and used proprietary monitoring software to track the individual detectors' response to the two fires. The results are shown below.



In both graphs the vertical axis shows the detectors' analogue value, or alarm level. The horizontal red and yellow lines show the alarm and pre-alarm thresholds respectively. The horizontal "count" axis shows the time the monitoring software has been running, not the actual time taken to detect the fire from its start. The left hand graph shows the detectors' response to the first fire and the right hand graph shows the response to the second fire.

In both fires the Ionisation detector (blue line) was the first to respond to the smoke. It is interesting to note that the second fire had a longer smouldering period than the first (it was estimated to be about three times slower in developing). Yet the Ionisation detector responded quickly to both a slow smouldering fire and a fast flaming fire. This is contrary to some of the adverse commentary circulated in the past year on the performance of Ionisation detectors.

The green line represents the Photoelectric detector, which responded quickly once sufficient smoke had been detected, and was marginally slower than the Ionisation detector. The pink line shows the response of the Acclimate photo-thermal multi-criteria detector, ramping into alarm very quickly once it detected warm smoke. In both fires all three smoke detectors went into alarm within a minute of each other.

The yellow line represents the heat detector, taking nearly two and a half minutes longer to react than the Ionisation detector in the second fire. By that time the hallway was filled with smoke and impassable, underlining the importance of smoke detection for early warning.

(Our thanks to James Firestone, Fire Engineer NZFS, for the information)