

# PERTRONIC INDUSTRIES LTD

## FIREBITS

June 2004

### Christchurch Art Gallery Uses Pertronic F120 Panel



Christchurch City's new Art Gallery opened in 2003, with the striking architectural design a work of art in itself. An extensive smoke detection system was specified to complement the building's use and protect the valuable exhibits housed within it, in addition to a full sprinkler system for passive protection.

A 10-loop Pertronic F120 analogue addressable control panel was installed, supporting 800 System Sensor analogue addressable smoke detectors (also installed in all ceiling voids) in addition to two Vesda Laser Plus systems. The F120 panel is also interfaced to an EWIS system.



VESDA



## **NZS4512:2003 and Pertronic Product - some questions answered.....**

- Q.** *On the new F16E conventional panel, what happens if we have the “programme enable” link in place and depower the panel?*
- A.** Nothing - the options previously programmed into, and accepted by, the panel are not lost.
- Q.** *How many evacuation circuits can we spur off the new Pertronic amplifiers?*
- A.** Up to three - the same number of circuits that can be spurred off bell outputs on a Pertronic panel. But remember to change the end of line resistor. One circuit off an amplifier requires a 10K, 1Watt resistor; two spurs require a 20K, 1Watt resistor on each spur; three spurs require a 30K, 1W resistor on each spur.
- Q.** *How many indicating heat detectors or indicating call points can we have on a circuit?*
- A.** As many as you like - they do not draw current in normal mode. They only draw current in an alarm condition.
- Q.** *Can we have a larger 230V switch in the panel to wire into?*
- A.** Yes – this will be a progressive change introduced into production, but a timely reminder that this connection to the 230V supply must be completed by a registered electrician.
- Q.** *Can we still achieve a “double knock” system with the new F16E conventional panel.*
- A.** Yes, in the same way as the previous F16 panel. It requires the use of two different circuits, both connected to a dual relay card. The two relays on this card are in series, so both relays must operate to generate an output - this output is in turn connected to a third circuit in the panel.
- Q.** *On the new F16E panel, a circuit programmed in “residential mode” can have non-brigade calling smoke detectors sharing the same circuit as brigade calling heat detectors and call points. The new Standard requires that non-brigade calling smoke detectors have a separate indication on the mimic, yet on a conventional panel we only have one LED per circuit. How do achieve this requirement?*
- A.** The F16E panel uses 8-way LED cards which correspond to each block of eight conventional circuits. If any circuits in a particular block of eight are used in residential mode, we add on an additional 8-way LED card to provide the extra indication. For example, in a 16 circuit F16E panel, we would normally have 16 LED’s available (two cards of 8). But if we want to have circuits 1, 2 & 3 programmed in residential mode, we need to add on an extra 8-way LED card, which then takes the LED display up to 24 LED’s. If a brigade calling device activates on circuit 1 then LED no. 1 will light up. But if a non-brigade calling smoke detector on circuit 1 activates, the first LED on the extra 8-way card (LED no. 17) will come on. Similarly, a non-brigade calling smoke detector activating on circuit 2 would switch on LED no. 18 (the second extra LED), on circuit 3 would switch on LED no. 19, and so on. The moment a circuit is programmed as “residential mode” the panel knows to look for the additional LED’s (for both indicating and monitoring purposes). Adding these extra LED’s at the end of the display also allows ample room on the mimic to engrave the wording specified in the Standard “NOT CONNECTED TO FIRE SERVICE” [clause 402.8.2(m)].
- Q.** *Under the new Standard, the requirement to have speech included in the evacuation sound means increased use of amplifiers and speakers. On the 100 volt speaker circuits, to economise on cabling, is it possible to also support strobes, ?*
- A.** Yes it is on Pertronic systems. We have developed a 100 volt Line Strobe Interface (code PSTIF). This device can support up to two System Sensor “Spectralert” strobes per interface, and these strobes draw between 2 - 2.5 watts each (allowing for start-up current draw). Note that the strobes will function correctly only when the amplifier is transmitting the Evacuation tone, and not the Alert tone, as there are too many pauses in this tone pattern to keep the strobes adequately powered up.

Additional questions will be answered in Firebits’ September edition. Please forward any questions you may have to Rob Fenton at Pertronic Industries’ Auckland office, or email to - [rob.fenton@pertronic.co.nz](mailto:rob.fenton@pertronic.co.nz).

## Battery Load Calculations

The chart below allows installers to accurately calculate the battery load on conventional fire alarm installations, for both brigade and non-brigade connected systems. The calculations for analogue addressable systems are more complex, and a spreadsheet for these calculations will be posted on the Pertronic website.

Conventional Panel Battery Calculations				
Product	Quiescent Current (mA)	Alarm Current (mA)	Ampere/ Hours Required for Brigade Connected Panels (24Hour Standby) A/h	Ampere/ Hours Required for Non Brigade Connected Panels (72 Hour Standby) A/h
F1	13	87	N/A	1.02
F4	35	160	1.00	2.68
F4 Aux relay card	2	13	0.06	0.16
12V 20 Watt Amp	0	2800	2.80	2.80
F16e Master	65	260	1.82	4.94
F16e Extender	30	30	0.75	2.19
LED Mimic Board	10	10	0.25	0.73
24V 20 Watt Amp	0	1200	1.20	1.20
50 Watt Amp	75	2500	4.30	7.90
1 Zone X 40 Detectors	3	20	0.09	0.24
2 Zone X 40 Detectors	6	20	0.16	0.45
4 Zone X 40 Detectors	12	20	0.31	0.88
8 Zone X 40 Detectors	24	20	0.60	1.75
16 Zone X 40 Detectors	48	20	1.17	3.48
24 Zone X 40 Detectors	72	20	1.75	5.20
32 Zone X 40 Detectors	96	20	2.32	6.93

- Note**
- 1, Assuming only 1 Zone is in Alarm.
  - 2, Assuming Fully loaded detection circuits
  - 3, Assuming amplifier is at max load

### How to use the table

Simply add up the number of each item you have on the Fire alarm system in the 24 or 72 Hour Standby column

### Example

F16 panel with 16 Zones, 8 detection Zones used, 1 x 50W amplifier, and a standby period of 24 hours

Product	Quiescent Current (mA)	Alarm Current (mA)	Ampere/ Hours Required for Brigade Connected Panels (24Hour Standby) A/h	Ampere/ Hours Required for Non Brigade Connected Panels (72 Hour Standby) A/h
F16e Master	65	260	1.82	4.94
F16e Extender	30	30	0.75	2.19
LED Mimic Board	10	10	0.25	0.73
LED Mimic Board	10	10	0.25	0.73
50 Watt Amp	75	2500	4.30	7.90
8 Zone X 40 Detectors	24	20	0.60	1.75
<b>Battery A/h required</b>			<b>7.97</b>	18.24

## PERTRONIC INDUSTRIES LTD

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## Pertronic Fire Alarm Systems Protect Key Australian Sites



**Vodafone Arena**, part of Melbourne & Olympic Park (in Victoria, Australia) is well known to many New Zealand sports followers. Completed in 2000, the arena was designed as a versatile sports and events centre. It can accommodate sports as varied as tennis, cycling, dancesport or netball, with concert quality acoustics and a fully retractable roof that takes only 10 minutes to open or close.

The arena has been protected by a Pertronic F100A analogue addressable fire alarm system from the outset. The F100A panel supports 36 fire fan control units (a Pertronic proprietary product that complies with AS/NZS1668), a host of analogue addressable smoke detectors - plus an interface to the EWIS system - and is one of many Pertronic fire alarm systems installed in key sites throughout Australia over the past five years.

### Visit Our New Website

We now have a completely redeveloped website that's easy to navigate. Extensive product information (data sheets and installation notes) is now available for downloading. Technical manuals are also available, for authorised users with password access to this section. Visit us at [www.pertronic.co.nz](http://www.pertronic.co.nz).

### Customer Technical Support Increased

One of the challenges of a growing business is being able to adequately handle the increasing number of technical support needs of our customers. Geoff Tustin has joined Brent Pells in our Technical Support office to increase our ability to provide this important service. Geoff has a strong electronics background, which includes eleven years as a telecommunications engineering officer with the NZ Fire Service, responsible for the installation and maintenance of control room equipment in the central north island region. Geoff is rapidly absorbing company, product and industry knowledge, and can be reached on extension 807 when phoning our Wellington head office, or by email at [geoff.tustin@pertronic.co.nz](mailto:geoff.tustin@pertronic.co.nz).



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