



Certificate of Conformity

Certificate num.	Registration date	Version	Valid until	
afp - 3054	3-Aug-2016	Number 7	Issue date 26-Apr-2021	30-Apr-2022
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Product designation

Pertronic, F220, fire alarm control panel

(Refer to the Schedule/enclosures for further specified details)

Agent/distributor

Pertronic Industries Pty Limited
Unit B2, Hallmarc Business Park, 2A Westall Road, SPRINGVALE, VIC, AUSTRALIA, 3171

Registrant

Pertronic Industries Pty Limited
Unit B2, Hallmarc Business Park, 2A Westall Road, SPRINGVALE, VIC, AUSTRALIA, 3171

Producer

Pertronic Industries Limited
17 Eastern Hutt Road, WINGATE, LOWER HUTT, NEW ZEALAND, 5019

Conformance criteria and evaluation

The Pertronic, F220, fire alarm control panel has been evaluated and verified as conforming with the relevant requirements of the following criteria.

1. Australian Standard AS 7240.2-2004, 'Fire detection and alarm systems - Part 2: Control and indicating equipment (ISO 7240-2:2003, MOD)'.
2. Australian Standard AS 7240.4-2004, 'Fire detection and alarm systems - Part 4: Power supply equipment (ISO 7240-4:2003, MOD)'.
3. Australian Standard AS 4428.3-2004, 'Fire detection, warning, control and intercom systems - Control and indicating equipment - Fire brigade panel'.
4. Australian Standard AS 7240.13-2006, 'Fire detection and alarm systems - Part 13: Compatibility assessment of system components'.

Limitations/conditions of conformance

Limitations/conditions of conformance, where identified on this certificate, are derived from qualifications from evaluation(s) for conformity and/or other related technical documentation. All details with respect to design, assembly and installation instructions and restrictions should be checked against the producer's current technical manual/data sheets and the requirements of the Authority having Jurisdiction.

Specified limitations/conditions, determined from the evaluation for conformity, include the following.

- i. Compatibility of this equipment with new or existing actuating devices should be verified prior to installation.

Issued by

David Whittaker
Executive Officer – ActivFire Scheme



This certification is issued within the scope of CSIRO Verification Services – Rules governing ActivFire Scheme and is valid only for the product(s) as submitted for evaluation and verification of conformity, subject to the following conditions.

- Reference to details, limitations and requirements, where documented as a schedule/enclosure with this certificate.
- The Registrant is responsible for their attestation of conformity and ensuring that on-going production complies with the conformance criteria defined in this certificate.
- This certificate will not be valid if any changes or modifications are made to the product which have not been notified and validated by CSIRO Verification Services.
- This certificate is subject to periodical re-validation upon verification that all requirements, as determined by the conformity assessment body, continue to be satisfactorily met by the Registrant.
- This certificate may only be reproduced in its published form, without modification and inclusive of all schedules/enclosures.
- Any changes, errors or omissions, must be submitted in writing and if necessary or requested, substantiated with relevant evidence.
- Any representations, such as advertising or other marketing related activities or articles shall reflect the correct contents of this certificate and conform with all relevant trade practices and consumer protection legislation and regulations.
- Any terms or conditions of use as applicable to content and documentation as published or accessed through web sites administered by the CSIRO Verification Services.

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Producer's description

The Pertronic, F220, fire alarm control panel is a modular, expandable, analogue addressable automatic fire alarm system designed for medium to large building applications. It may have 2 to 20 addressable loops giving a maximum of up to 3180 addressable smoke or heat detectors plus up to 1980 manual call points, modules, or addressable relays for the system.

The panel uses a 7 inch (180 mm) 800x 480 pixel colour display to unmistakably identify the panel status. The alarm mode is clearly identified by the use of red status bars, and by using large easy to read text descriptors. Fault information, device disablement information, pre-alarm conditions, walk test, supervisory and system information all have their own unique coloured displayscreens to provide comprehensive easy to use information for all users including fire brigade personnel, building managers, and service technicians.

This equipment also has 9 separate event logs to provide all users with powerful diagnostic information.

All functions are controlled by software that is stored in non-volatile flash memory which can only be modified by service personnel with Level 4 Access.

Technical specification

The following details are a representative extract of the technical specification for the Pertronic, F220, fire alarm control panel and may be subject to change. Complete and current details should be determined from the designated producer's technical manual/data sheets.

Schedule of variant designations

The following is a schedule of validated variant designations of the certified/listed equipment.

Variant		
Type	Ident.	Description
Enclosure	16U, Cabinet	550(w) x 800(h) x 185(d) mm
	28U, Slim Cabinet	575(w) x 1330(h) x 278(d) mm
	28U, Deep Cabinet	575(w) x 1330(h) x 380(d) mm
	40U, Deep Cabinet	575(w) x 1865(h) x 380(d) mm

Schedule of optional functions with requirements

The following schedule of AS 7240.2-2004 optional (or optional-required) functions with requirements have been validated.

1. Indications:
 - a. Total loss of the power supply (Cl. 9.4)
2. Controls:
 - a. Delays to outputs (Cl. 7.11)
 - b. Dependency on more than one alarm signal, Type A dependency (Cl. 7.12.1)
 - c. Disabled condition (Cl. 10)
 - d. Disablement of each addressable points (Cl. 10.5)
 - e. Test condition, General requirements (Cl. 11.1)
 - f. Test condition, Indication of the test condition (Cl. 11.2)
 - g. Test condition, Indication of zones in test state (Cl. 11.3)
 - h. Ancillary Control Function (ACF) (Annex ZA2 -> Item 3 -> Annex ZD)
3. Outputs:
 - a. Output to fire alarm devices (Cl. 7.8)
 - b. Control of fire alarm routing equipment (Cl. 7.9)
 - c. Output to fire protection equipment (Cl. 7.10)
 - d. Output of standard emergency evacuation signal (Cl. 7.14)
 - e. Output to fault warning routing equipment (Cl. 9.9)
4. Supervisory signal condition (Cl. 8)
5. Operational
 - a. Impact (operational) (Annex ZA2 -> Cl. 16.6: not optional)
 - b. Vibration, sinusoidal (operational) (Annex ZA2 -> Cl. 16.7: not optional)
 - c. Alarm Acknowledgement Facility (Annex ZA2 -> Item 1 -> Annex ZB)
 - d. Dry Heat, Steady State (Operational) (Cl. Annex ZA2 -> Item 2 -> Annex ZC)
6. Marking requirements (Annex ZA2 -> Cl. 15: additional requirements)

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The following schedule of AS 7240.4–2004 optional (or optional-required) functions with requirements have been validated.

1. Battery function check (Cl. 5.5)
2. Marking (Annex ZA2 -> Cl. 8 -> Annex ZB: additional requirements)
3. Impact (operational) (Annex ZA2 -> Cl. 9.7: not optional)
4. Vibration, sinusoidal (operational) (Annex ZA2 -> Cl. 9.8: not optional)
5. Vibration, sinusoidal (endurance) (Annex ZA2 -> Cl. 9.11: not optional)
6. Dry heat steady state (operational) (Annex ZA2 -> -> Item -> Annex ZC)

Schedule of properties/characteristics

The following schedule is an extract of physical and operational properties/characteristics of the certified/listed equipment.

Cabinet:

Dimensions	Refer Schedule of variant designations
Material	1.2 mm mild steel, powder-coated
Colour	Hybrid Cream Wrinkle (colour code HL532/8160, RAL9001)

Power Supply, Primary:

5 Amp PSU	Input	85-264V AC 50-60Hz 176 VA
	Maximum Load	3.0 A @ 28 Vdc
	Battery Charging Output	27.4 V @ 20°C, temperature compensated for lead-acid batteries 2.1 A maximum current
11 Amp PSU	Input	85-264V AC 50-60Hz 350 VA
	Maximum Load	9.0 A @ 28 Vdc
	Battery Charging Output	27.4 V @ 20°C, temperature compensated for sealed lead-acid batteries 2.1 A maximum current

Power Supply, Secondary:

Battery	Nominal Voltage	24 Vdc
	Type	Valve Regulated Lead Acid (VRLA) in AGM or Gel types only
	Capacity	7 Ah to 42 Ah

The choice of power supply and battery capacity depends on the system load. This depends on the number and type of optional extras, together with the number and type of external devices powered by the F220 fire alarm panel power supplies. Pertronic Industries provides a web-based calculator for calculating the system load and battery capacity.

Quiescent Current:

	154.7mA	F220 panel only, normal state
	56 mA	for each 2-loop module
	3.5 mA	for each group of 10 detectors, Manual Call-Points or modules
	4 mA	each Relay Responder
	20mA	each Loop Responder
	145mA	Panel in 'Fault' (backlight on)
	256.5mA (max.)	Panel in 'Fire' (relays and backlight on)

Networking Up to 133 nodes

Zone Allocation: Up to 999 physical zones per panel, up to 65,000 physical zones per network

LED Display: Up to 2048 display LEDs.

Analogue Addressable Loop Circuits The basic F220 has two analogue addressable loops, expandable to 20 loops with 2-loop expander modules.

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Environmental:

	Temperature	-10 °C to +50 °C
	Humidity	+40 °C or below, ≤ 95 % relative humidity +41 °C to +50 °C, ≤ 75 % relative humidity

Cabling:

All cabling for the Pertronic F220 Fire Alarm System shall comply with AS3000 (Australian Wiring Rules) and AS1670.1 (Fire Detection), together with relevant project requirements and local codes or regulations.

Schedule of components and/or assemblies

The following are schedules of validated components and/or assemblies of the certified/listed equipment.

Description	Assembly Type	Part Number
F220 Master board (AUS) SMD	CPU masterboard	F220MASTAUS
F220 Keyboard with LCD, AUS	Display/keyboard	F220LCDAUS
F220 Auxilliary Relay board	Relay function board	F220AUXRLY
F120A2 Loop Driver, Mini Board, AUS SMD	Loop driver board	F120P2LMB-A
Charger Controller 24V 2.1A printboard assembly (for ISO7240 PSU)	Power controller	CCON24V2.1A
Mean Well HRPG-300-24 PSU	PSU	HRPG-300-24
Power Box Pacific PMC-24V150W1AJ	PSU	PMC-24V150W1AJ
F220 High Capacity Network 2 Card	Network board	NET2CARD
F220 Auxilliary Relay board (4 relay)	Relay function board	F220AUX-4RLY

Designation <small>(see Note)</small>	Description	Type	Protocol
System Sensor, 2151BPI	Photoelectric smoke detector	Actuating device, e.g. detector	System Sensor CLIP
System Sensor, 2251BPI	Photoelectric smoke detector		
System Sensor, 5251BPI	Type 'B' (blue dot) heat detector		
System Sensor, M400KA	Conventional manual call point		
System Sensor, M500K	Manual call point		
System Sensor, B501AUS	Detector connection base	Detector base	
System Sensor, B524LEFT-1	Detector connection base with short circuit isolator	Field module	
System Sensor, M210E-CZR	Conventional Zone Interface module		
System Sensor, M221E	Dual Input (monitored), Single Output (relay) module		
System Sensor, M500DMR	Dual Input (monitored), Dual Output (relay) module		
System Sensor, M500R	Un-supervised Relay output module		
System Sensor, M500S	Supervised Output Control module		
System Sensor, M500X	Short circuit isolator module		

Note: These components have been validated as connectable for the function and performance of this equipment. The schedule will be extended to include Type 1 component compatibility upon validation and acquittal of an AS 7240.13 evaluation program

Supplementary information

Schedule of relevant articles

The following schedule is an extract of articles significant and/or related as evidence of conformity.

Reference		Title / description	Date issued (or date validated)	Source
Ident. type	Ident.			
Opus Research Report	16-527748.08_cie	Opus Research Report: 16-527748.08_cie COMPLIANCE APPRAISAL OF THE Pertronic F220 panel TO AS7240.2:2004 "FIRE DETECTION AND ALARM SYSTEMS PART 2: CONTROL AND INDICATING EQUIPMENT"	18-May-2016	Opus International Consultants Ltd, Opus Research, Petone, NZ
	16-527748.08_pse	Opus Research Report: 16-527748.08_pse COMPLIANCE APPRAISAL OF THE Pertronic F22*0 (24V/5PSU-7240 and 24V/11PSU-7240) power supply units TO AS7240.4:2004 "FIRE DETECTION AND ALARM SYSTEMS PART 4: POWER SUPPLY EQUIPMENT"	6-May-2016	

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Reference		Title / description	Date issued (or date validated)	Source
Ident. type	Ident.			
	16-527748.08_fbp	Opus Research Report: 16-527748.08_fbp COMPLIANCE APPRAISAL OF THE Pertronic F220 Fire Brigade Panel TO AS4428.3:2010 "FIRE DETECTION, WARNING, CONTROL AND INTERCOM SYSTEMS – CONTROL AND INDICATING EQUIPMENT PART 3: FIRE BRIGADE PANEL"		
Test Report No	151110.2	Pertronic F220 Fire Alarm Panel tested to the specification EN 50130-4: 2011 Alarm systems -- Part 4: Electromagnetic compatibility – Product family standard: Immunity requirements for components of fire, intruder and social alarm systems	3-May-2016	EMCTechnologies (NZ) Ltd, Auckland, NZ
Report No	0624PERFCP068 <small>(Doc Id: IEC60068-2-75)</small>	Test Report for Enclosure Impact Protection Testing of Fire Alarm Control Panel to IEC60068-2-75	24-Jun-2016	Austest Laboratories, NSW, AU
Report Number	PL1486-1 – R1	Items(s) Tested: PERTRONIC F220 AUTOMATIC FIRE ALARM Panels 24V/5PSU-7240 and 24V/11PSU-7240 AS/NZS 60950-1 2011 with Test Specification Amendment 1 (IEC 60950-1 Edition 2.0 (2005),MOD) Information technology equipment- Safety Part 1: General requirements	15-Jun-2016	PowerLab Limited, Christchurch, NZ
Tech Manual	0060 F220 AU Iss 1_0 20160628	PERTRONIC F220 AUTOMATIC FIRE ALARM (AS7240-2&3, AS4428-3:2010) TECHNICAL MANUAL AUSTRALIA	28-Jun-2016	Pertronic Industries Limited LOWER HUTT, NZ
Report No	180106.1	Test report for the Pertronic F220-EMM & F220-AMM Mini MIMICs to EN 50130-4:2011	24-Apr-2018	EMCTechnologies (NZ) Ltd
Opus Research Report	18-527748.09	Pertronic networked F220 panel and Mimics to AS 7240.13:2006	15-Jan-2018	Opus International Consultants Ltd, Opus Research, Petone, NZ
WSP Opus Research Report	19-529M06.01	"Compliance appraisal of the Pertronic 130 Node F220 panel network to AS 7240.2:2004 "Fire detection and alarm systems Part 2: Control and indicating equipment" and to AS 7240.13:2006 "Fire detection and alarm systems Part13: Compatibility assessment of system components"	29-Jan-2019	WSP Opus International Consultants Ltd, Opus Research, Petone, NZ
Report No	170609.1	Test report for the Pertronic NET2CARD Fire alarm Panel Accessory to EN 50130-4: 2011	24-Oct-2017	EMCTechnologies (NZ) Ltd
WSP Opus Research Report	19-529M06.04	F220 AS 7240 panel firmware upgrades review	04-Oct-2019	WSP Opus International Consultants Ltd, Opus Research, Petone, NZ
Report No	CSBA0002/R1	Conformity validation of the Pertronic, Networked F220, fire alarm control panel and mimics to the requirements of AS 7240.13:2006 and AS 7240.2-2004	5-Dec-2019	CSIRO, Fire Systems Laboratory