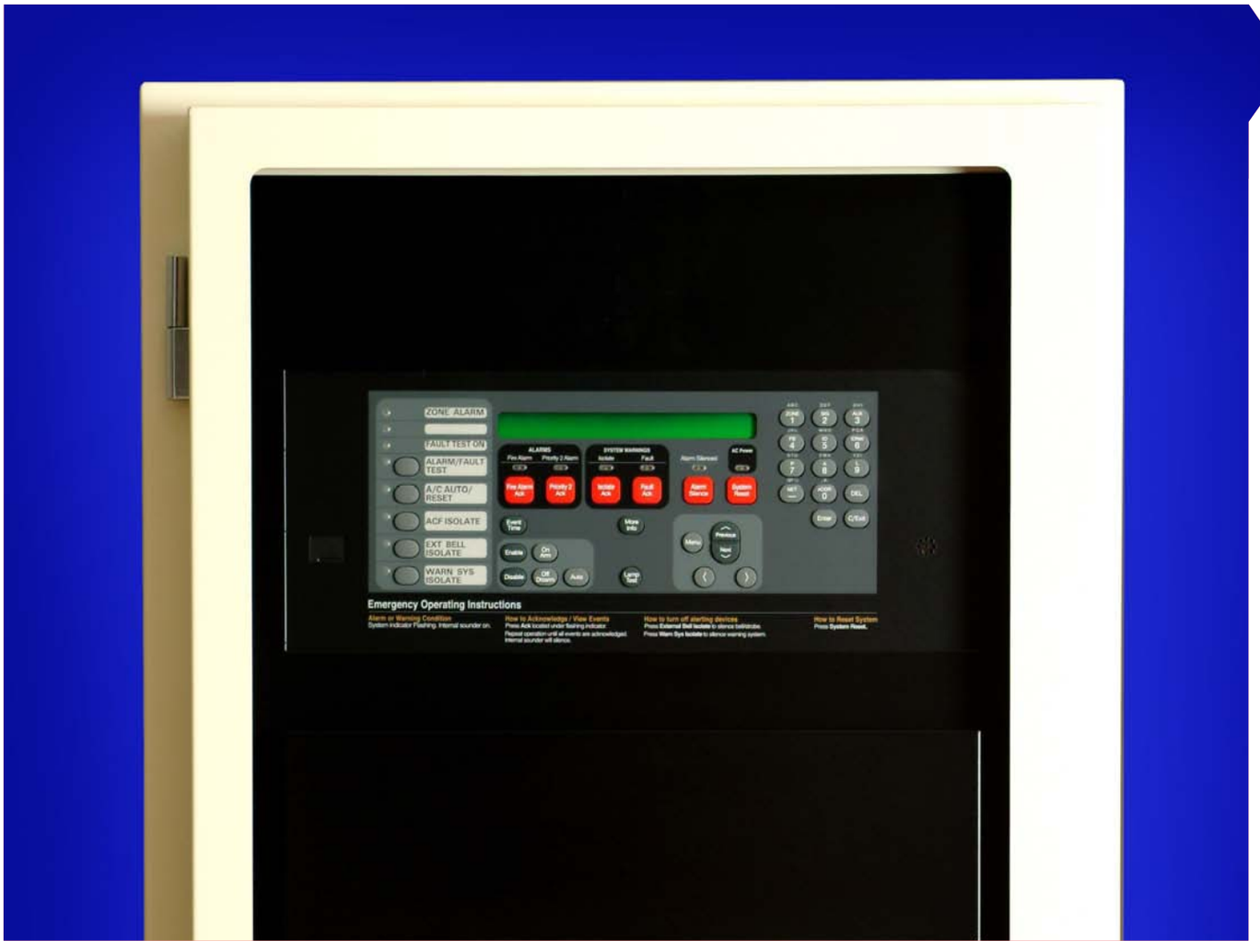

Fire Detection - Australia

Product Catalogue Issue 2

Simplex FIRE PRODUCTS

INDUSTRIAL AND MINING | GOVERNMENT AND DEFENCE | TRANSPORT INFRASTRUCTURE | HOSPITAL AND HEALTHCARE | EDUCATION FACILITIES

www.simplexfire.com.au

Introduction

Simplex Fire control panels, detectors and software continue to be the equipment of choice in high end fire protection systems. We have been at the forefront of business technology since the late 1800s and continue to lead the industry in this rapidly developing area.

Simplex Fire has always developed and sought out new ways of addressing safety and protection needs. Simplex Fire seizes the opportunities provided by emerging computer and communications technology by developing products such as our internet interface cards and integrates it into improved fire protection and evacuation management products. Our goal is always to deliver the very best property and personnel protection systems available.

Long term infrastructure assets, like shopping centres, hospitals, road tunnels, educational institutions, factories and industrial facilities, need protection systems that can be easily updated to maintain compliance with changing standards and community expectations without having to replace entire systems due to obsolescence.

Simplex Fire's philosophy of backward and forward compatibility ensures that the products available today will be compatible with more advanced products yet to come. And today's products are compatible with Simplex Fire products installed years ago. This philosophy lowers overall life cycle costs and means that Simplex Fire systems can always be easily expanded and upgraded with the latest technology.

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Simplex FIRE PRODUCTS

Fire Detection Product Catalogue

Table of Contents

Collective Fire Panels

F3200 8 Zone

The 8 zone F3200 will suit small installations requiring a system up to 8 collective detection circuits and provides all the features you have become accustomed to with the existing F3200 Fire Indicator Panel (FIP) range.

This panel is a replacement for the F08 FIP. It is a compact, self-contained panel which performs the functions of the Control and Indicating Equipment (c.i.e.), as specified by the Australian Standard AS 4428.1 Fire Detection, Control and Intercom Systems - Control and Indicating Equipment.

The 8 zone F3200 offers features including: -
- AS4428 Firefighter Facility
- LCD Display
- Flexible programmable logic equations
- Event logging to history file
- Networking capabilities
- Standard 3A Power Supply to power a T-GEN 50

Operation is straightforward with the F3200's keypad and alphanumeric LCD. The 40 character, 2 line LCD zone control panel meets the AS 4428.1 "Firefighter Facility" (FF) requirements. "Next" and "Prev" keys allow easy scrolling through the 99 event alarm buffer, while all current alarms, faults and isolated zones can be separately displayed.

CSIRO ActivFire Listing: afp-789

Part Numbers

Panel:

FP0784	F3200 8 Zone FIP c/w Operator's Manual (batteries not included)

Manuals

LT0250	F3200 Operator's Manual - A5
LT0255	F3200 Installation and Configuration Manual
LT0256	F3200 Programming Manual

For Remote Annunciators, refer to Page 49

F3200 8 - 64 Zone

The F3200 is a self-contained, modular, microprocessor based FIP which performs the functions of the c.i.e. as specified by AS 4428. It has a high degree of flexibility and expandability, catering for medium to very large buildings. A single panel may have up to 64 zones and a network system may have up to 64 panels, can be fitted with 64 zone LED and supports AS 1668 fan controls and gas release. The F3200 detector circuit electronics caters for a wide range of detectors, It also caters for interfacing to Intrinsically safe circuit barriers/isolators (hazardous areas), long line circuits eg. from a sub-indicator FIP and tamper-proof circuits. The CSIRO ActivFire Listings are: afp-789 (Tyco), afp-1421 (Simplex).

Part Numbers

Panel

FP0780	8 zones fitted, 24 zone capacity 3A PSU
FP0781	8 zones fitted 64 zone capacity 3A PSU
FP0782	8 zones fitted 24 zone capacity, no cardframe 6A PSU
FP0783	8 zones fitted 64 zone capacity, incl cardframe 6A PSU
FP0784	8 zones fitted 32 max small cab 3A PSU

Manual

LT0250	F3200 Operator's Manual
LT0121	F3200 Technical Manual
LT0255	F3200 Congifuration & Install Manual
LT0256	F3200 Programming Manual
LT0130	F3200 Presentation Drawings (AutoCAD)
LT0135	F3200 Architects Specification A4

Options

FP0553	8 zone input expansion kit
FP0554	8 relay expansion kit
FP0795	Network Upgrade Kit (AS4428) {incl. SF0222,LT0330,PA0773}
FP0731	RDU to NDU upgrade kit
FP0749	3A to 6A PSU upgrade kit
FZ3031	FP0475 Disp. Extender Kit incl 1.2m FRC
FZ9028	3U AIU/PPU Bracket & Loom
FP0475	Display Extender kit incl 0.5m FRC
KT0072	Cardframe upgrade kit
KT0157	FIP v1.xx to v2.xx upgrade kit
KT0177	RDU u/g for PA0495 controller
KT0419	Stick-on 3U A4 Document Holder (30 deep) for 18U to 40U cabinets
KT0469	Stick-on 3U A5 Document Holder (20 deep) for 15U cabinets

Spares

CL0423	Transformer 240V 2.5A 31V RMS
FA1223	FAB 1931-1-1 keypad membrane (AS1603.4)
FA2150	4U keypad membrane overlay (AS4428)
ME0060	Display Door 1901-79
ME0098	Hinged AS 4428 control pnl assy incl PCB no s/w
ME0444	4U door & AS4428 keypad (no PCB)
PA0491	PCB 1931-3 3A MAF/PSU (AS1603)
PA0873	PCB 1931-3-3 3A MAF/PSU (AS4428)
PA0703	PCB 1931-27 Remote I/F
PA0798	PCB 1931-84-2 RZDU Ctrl/Disp
PA0804	PCB 1931-84-1 Ctrll NDU no s/w
PA0809	PCB 1931-2 MAF PSU 6A
PA0810	PCB 1931-44 6A FET & Rect
PA0909	PCB 1931- 111-1 F3200 4428.1 Ctrl, no s/w
SF0286	Software AS4428 Controller/Network/NDU V4.02 EPROM
SW0030	F3200 Door Switch Assembly
SW0121	PSU Main Switch F3200 DPST 6A 250VAC

F3200 Single Zone Gas Control Panel

FP0876 8U Panel with 3A PSU

The F3200 Single Zone Gas Control Panel is designed to meet the c.i.e. requirements of AS 4214-2002, "Gaseous Fire Extinguishing Systems". It includes all circuits and relays normally required for single zone gas control panels. When coupled with the AVI Mk2 warning signs and FP0570/2 Local Gas Control Stations it provides a cost-effective, easily programmed single zone gaseous fire extinguishing system. The FP0876 and FP0877 panels have been tested by CSIRO and comply with AS 1603.4-1987.

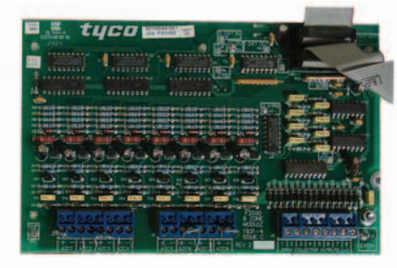
FP0876 is an F3200 in an 8U cabinet (FP0784) complete with an ME0442 1 zone, 1U gas control module pre-wired to the 8 zone module and an 8 relay module.

Part Numbers

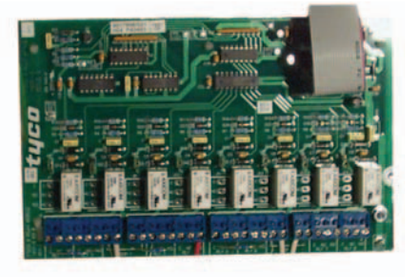
FP0876	F3200 AS4428 8U, 3A PSU, 1U Gas Ctrl, Pre Prog.
FP0877	F3200 AS4428 15U, 6A PSU 1U Gas Ctrl Pre Prog.

FP0877 is based on a 6 Amp power supply F3200 assembled into the standard 15U cabinet (FP0782). It comes complete with an ME0442 1 zone, 1U gas control module pre-wired to the 8 zone module and an 8 relay module.

F3200 Expansion Kits



FP0553, F3200 8 ZONE INPUT EXPANSION KIT
Includes: PA0492 shown) 8 Zone Module, LM0053 FRC, 8 x EOLR (std).



FP0554, F3200 8 RELAY EXPANSION KIT
Includes: PA0493 8 Relay Module, LM0053 FRC, 8 x Minijump links (for supervision selection).

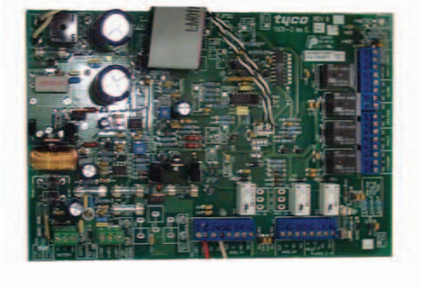
KT0072 F3200 Cardframe Upgrade Kit

A KT0072 Cardframe upgrade kit can be fitted to a 15U F3200 to allow it to take more than three 8 way modules. In older versions, the cardframe mounts directly to the rear of the cabinet. In newer versions, the cardframe is fitted to a gear plate that may be removed when the cabinet is mounted to the wall.

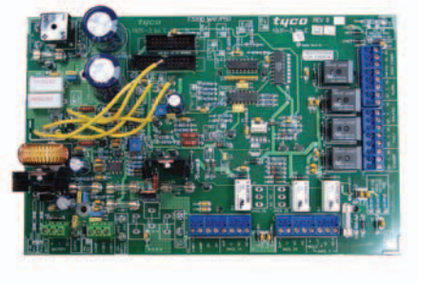
Part Numbers

KT0072	F3200 Cardframe Upgrade Kit

F3200 Expansion Kits



PA0873, F3200 AS4428 MAF/PSU 3A 1931-3-3



PA0874, F3200 MAF/PSU 6A 1931-3-3 AS4428

FP0749, F3200 PSU Upgrade Kit 3A to 6A - AS1603
Transformer (CL0423), LM0083, LM0278, LT0220, PA0809 (AS1603 MAF/PSU), PA0810 (6A FET/Rectifier PCB), SU0159 (Thermal Cutout), misc hardware,

FP0779, F3200 PSU Upgrade Kit 3A to 6A - AS 4428
Transformer (CL0423), LM0083, LM0278, LT0220, PA0874 (AS4428 MAF/PSU), PA0810 (6A FET/Rectifier PCB), SU0159 (Thermal Cutout), misc hardware,

Collective Detectors - Tyco 614 Series

The Tyco 614 range of low profile collective detectors have a number of unique design features that offer improved operation, installation and ease of servicing. Through innovative design, these detectors have reduced the installation and servicing time to a minimum.
The Tyco 614 range includes the 614CH Carbon Monoxide fire detector, which responds to carbonaceous fires with an unprecedented early detection of slow smouldering fires, yet offers unequalled false alarm immunity.

The use of the patented optical sensing chamber, together with refined signal processing, has enabled the introduction of a smoke detector suitable for fast, reliable smoke detection of both slow and fast developing fires.
The Tyco 614 series are compatible with Vigilant and Simplex c.i.e. collective circuits.

Features

- Range includes unique CO+Heat fire detector
- Type A, B, C and D Heat detector
- Low profile and discreet
- Superior performance and reliability
- Patented optical chamber
- Attractive design
- Designed for fast, easy installation
- Detector Lock included with 5B base
- Integral and remote alarm LED
- CSIRO ActivFire and FPANZ Listing

614CH Carbon Monoxide and Heat Fire Detector

The 614CH fire detector provides very early warning of slow smouldering fires. The CO fire detector is well suited to many applications where heat detection is insufficient but smoke detection causes unwanted alarms. As CO travels more freely than smoke, the positioning of CO fire detectors is more flexible. This feature is particularly useful in large complex structures such as atria and warehouses, where positioning of smoke detectors is difficult.
The 614CH has an additional mode of operation as a Class A1R combined rate-of-rise and 60°C fixed temperature heat detector to supplement the CO detector mode to permit the detector to react to a wider range of fire types. Although the 614CH has an expected life in excess of 10 years, in order for the 614CH to provide the intended level of fire detection, the detector should be checked for calibration 5 years after installation (or 5 years after re-installation following service) or within 7 years of the date of manufacture.

Specifications

Operating Voltage	18 to 32Vdc
Quiescent Current	55µA (max.)
Alarm Current[1]	3.2 to 67mA (50°C)
Alarm State Voltage	2.5 to 7.4Vdc
Alarm Threshold	38ppm CO
Ext. Powered Load (max.)	50mA, 28Vdc
Remote Indicator	E500 Mk2 Series
Relative Humidity	15 to 90% (n/cond)
Ambient Temp	0 to +50°C
Dimensions (incl. base)	127 dia x 54H (mm)
Weight	200g with base
CSIRO ActivFire Listed	afp-1718
FPANZ Listed	VF/345
Part Number	516.600.304

1. 3.2mA min. for LED visibility. Max. current must be externally limited

614P Photoelectric Smoke

The 614P is capable of detecting the visible smoke produced by materials which smoulder or burn slowly, ie soft furnishings, plastic foam etc or 'smoke' produced by overheated but unburnt PVC. These detectors are particularly suitable for general applications and areas where cable overheating may occur; electrical services areas. The novel design of the asymmetrical sampling chamber and signal processing techniques stop unwanted alarms caused by very small insects. Smoke entering the sampling chamber scatters the infrared light pulses onto a photodiode. These pulses are converted to an electrical signal that is compared against a preset alarm level.

Specifications

Operating Voltage	18 to 32Vdc
Quiescent Current	60µA
Alarm Current (max.)*	0.7 to 67mA (55°C)
	0.7 to 60mA (70°C)
Alarm State Voltage	2.5 to 7.4V
Ext. Powered Load (max.)	50mA. 28Vdc
Sensitivity (AS7240.7-2004)	4%Obs/m
Remote Indicator	E500 Mk2 Series
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-20°C to +70°C
Dimensions (incl. base)	127 dia x 54H (mm)
Weight	188g with base
CSIRO ActivFire Listed	afp-1715
FPANZ Listed	VF/344
Part Number	516.600.301

*Max. current must be externally limited

614I Ion Chamber Smoke

614I detectors are offered for old specifications which still call for ionisation smoke detectors. The 614I offers detection of visible and invisible fire aerosols (products of combustion) and are therefore capable of detecting the early presence of hot smouldering and flaming fires, such as wood, paper etc. They use a dual ionisation chamber in which the air is ionised by a single radioactive source. The presence of smoke in the sampling chamber causes a change in the balance voltage, between the two chambers. This is then compared against an alarm level.

Specifications

Operating Voltage	18 to 32Vdc
Quiescent Current	70µA
Alarm Current*	0.7 to 67mA (55°C)
	0.7 to 60mA (70°C)
Alarm State Voltage	2.5 to 7.4V
Ext. Powered Load (max.)	50mA, 28Vdc
Ionisation Source	<33kBq (Am241)
Alarm Threshold	0.32 MIC X
Remote Indicator	E500 Mk2 Series
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-20°C to +70°C
Dimensions (incl. base)	127 dia x 54H (mm)
Weight	200g with base
CSIRO ActivFire Listed	afp-1716
FPANZ Listed	VF/343
Part Number	516.600.305

*3.2mA min. for LED visibility. Max. current must be externally limited

614T Heat

Tyco 614T heat detectors use a fast response, thermistor based design. The fixed temperature sensing thermistor readily tracks the local ambient temperature, thus quickly, accurately and consistently identifying when a fixed temperature is exceeded. Rate-of-rise detection is achieved by comparing the response of two thermistors, with one having a slower thermal response. By combining accurate thermistors with proper physical placement, this patented rate-of-rise detection design achieves a high level of heat detection performance.

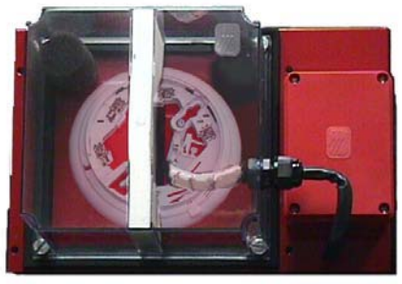
Part Number	Model	Type	CSIRO ActivFire Listed
4098-9637EA	614TA	Type A	afp-1813
4098-9638EA	614TB	Type B	afp-1814
4098-9639EA	614TC	Type C	afp-1815
4098-9640EA	614TD	Type D	afp-1816

Specifications

Operating Voltage	18 to 32Vdc
Quiescent Current [1]	85µA @ 24Vdc (typ.)
Alarm Current [2]	5mA to 80mA
Alarm State Voltage [3]	3.0V to 12.4V
Remote Indicator	E500 Mk2 Series
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	
Types A, B	-10°C to +45°C
Types C, D	-10°C to +75°C
Storage Temperature	-20°C to +75°C
Dimensions (mm)	127 dia x 53H
Weight	174g with 5B base

1. Max. quiescent 110µA. 2. Min. 5mA for LED visibility; max. current must be externally limited. 3. Min. voltage with remote indicator shorted @ 5mA. Max @ 80mA without remote indicator connected.

D515B Duct Sampling Unit



The D515B Duct Sampling Unit consists of a D51B duct housing fitted with a 5B base suitable for fitting a collective 614P photoelectric smoke detector. The DSU is designed to sample air in air conditioning ducts and pass the air through the smoke detector. The D515B is fixed on the outside of the duct to be sampled, allowing easy access for detector servicing and replacement of the dust filter. To cater for most duct sizes, a sampling tube extension is available in 3 metre lengths. The Tyco E500 Mk2 Series Remote Indicators can be used for remote indication of an alarm. The D515B with 614P can be used with F3200 c.i.e. logic for non-latching operation. The D515B with Tyco 614P is compatible with collective alarm zone circuits on Vigilant and Simplex c.i.e.

Specifications

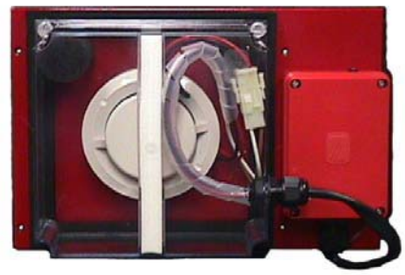
Duct Pressure*	-1.15 to +3.0 kPa
Sampling Tube Length	160mm minimum
Max. Duct Width	1.8m
Remote Indicator	E500 Mk2 Series
CSIRO ActivFire Listing pending	

Part Numbers

D515B	D51 c/w 5B base**
D51COVER	D51 Cover only c/w screws
D51L	Baffle box of 10
D51F	Filter box of 10
D51T3	3m Sampling Tube
D51K100	Sampling Tube End Cap pkt of 10

*AS 1603.13-1998 test **Wired for collective base

P136 Duct Sampling Unit (non-latching)



The P136 is an integrated housing and collective detector for detecting smoke in air-conditioning ducts. The detection system consists of a photoelectric smoke sensor and a separate circuit board that combines non-latching trigger circuitry and field-wiring termination. The P136 is compatible with collective alarm zone circuits on Vigilant c.i.e.

Specifications

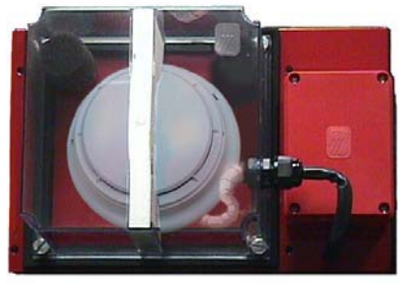
Operating Voltage	15 to 28 Vdc
Quiescent Current	500µA max. @ 24Vdc
Alarm Current	3mA to 60mA
Alarm Voltage	10.5 to 12.5Vdc
Reverse Polarity Current	100mA max.
Reverse Polarity Voltage	0 to 1Vdc
Ambient Temperature	-5°C to +45°C
Relative Humidity	10% to 95% (non cond.)
Max. Duct Width	1.8m
Sensitivity	5%Obs/m @ 4 to 64Pa differential pressure
Duct Pressure [1]	-1.15 to +3.0 kPa
Duct air velocity [2] for alarm at 8%Obs/m	1, 2, 4, 8m/s
Remote Indicator	E500 Mk2 Series
Sampling Tube Length	160mm minimum
CSIRO ActivFire Listed	afp-1211

Part Numbers

P136	Non-Latching DSU
Spares	REFER TO D515B

1. AS 1603.13-1998 test
2. Complies with AS 1603.13-1998 at 1 to 8m/s duct air velocity

D51B Duct Sampling Unit with Simplex 4098-9601EA



The D51B Duct Sampling Unit consists of a D51B duct housing fitted with a collective 4098-9601EA photoelectric smoke detector. The DSU is designed to sample air in air conditioning ducts and pass the air through the smoke detector. The D51B is fixed on the outside of the duct to be sampled, allowing easy access for detector servicing and replacement of the dust filter. To cater for most duct sizes, a sampling tube extension is available in 3 metre lengths. The Tyco E500 Mk2 Series Remote Indicators can be used for remote indication of an alarm.

Specifications

Duct Pressure*	-1.15 to +3.0 kPa
Sampling Tube Length	160mm minimum
Max. Duct Width	1.8m
Remote Indicator	E500 Mk2 Series
CSIRO ActivFire Listed	afp-1694

Part Numbers

D51COVER	D51 Cover only c/w screws
D51L	Baffle box of 10
D51F	Filter box of 10
D51T3	3m Sampling Tube
D51K100	Sampling Tube End Cap pkt of 10

*AS 1603.13-1998 test

Collective Detector Bases

5B Universal Base

The 5B Universal Base contains no electronics and is suitable for indoor applications of the 614 series collective and 814 series analogue addressable detectors. It provides excellent space for cable access and terminations. Its larger skirt makes it suitable as a replacement for the earlier M614 base to cover any paint rims or covering a larger hole in the ceiling. It features remote LED connections and an anti-tamper facility.

Specifications

Operating Temp.	-25°C to +75°C
Relative Humidity	10% to 95% (non cond.)
Dimensions (mm)	127 dia x 24H
Weight	63g

CSIRO ActivFire Listed with compatible detectors

Part Numbers

517.050.017	5B Base
517.050.614	Detector Cage

DHM-5B Deckhead Mounting

The Deckhead Mounting can be used with Tyco 600/800 Series using 5B base or Simplex detectors, when fitted in particularly damp or dirty environments. Only suitable detectors should be used - consult bulletin GPBD0018. The housing has four 20/25mm cable breakouts and is secured with two countersunk screws at 144mm fixing centres. The mounting surface should be flat over the area of the underside of the housing to ensure a stable fixing and strong enough to take the weight of the mounting, detector base and sensor. Extra Base Accessory Terminals (BATs) are available (one is supplied).

Specifications

Ambient Temperature	-25°C to +70°C
Relative Humidity	up to 95% (non cond.)
Dimensions (mm)	163 dia x 42H
Weight	200g
Protection	IP55

Part Numbers

517.050.603	DHM-5B
517.050.612	BAT Kit - pack of 10 (available on request)

601SB Sounder Base

The 601SB Sounder Base provides a sounder function on collective fire detection circuits. It operates independently of the detector circuit and may be used without an associated detector. When used without a detector, a sounder base cap should be fitted to cover exposed terminals of the base.
The 601SB Sounder Base requires an external 24Vdc supply and provides eight tones (including ISO 8201 T3 evacuation signal) and variable volume settings. It is identified by a green park clip.
It can be directly controlled by the Minerva/Tyco 614 Series smoke/CO detectors. For Tyco 614T Heat detectors, c.i.e. logic control is required.
Refer to Sounder Base Applications table for further details.

Specifications

Operating Voltage	18 to 32Vdc
Alarm State Current	1.2mA @ 68dBA (low vol) 6.8mA @ 90dBA (max vol)
Ambient Temperature	-25°C to +70°C
Relative Humidity	10% to 95% (non cond.)
Dimensions (mm)	108 dia x 38H
Weight	195g
Wire Size	1.5mm^2 to 2.5mm^2

Not CSIRO ActivFire Listed

Part Numbers

577.001.035	601SB
557.001.040	Sounder Base Cap

Volume Adjustment Tool

A simple Volume Adjustment Tool, specific to the task of sounder volume selection on the "variable-volume" range of Tyco MKII Sounder Base Devices. Sounder volume can be easily varied using this simple, functional tool.

Part Number

517.050.015	Volume Adjustment Tool

Collective Detector Selection Chart

Fire Loading / Probable Risk	Environment / Example	Very Clean and Dry Clean Room Data Processing Suite	Benign Moderately Clean Regulated Temperature Office Light Industrial Hospital Residential Passenger Accomodation	Dirty - Smoky Loading Bay/ Warehouse with diesel forklifts etc Heavy Industrial Ferry (car deck)	Dusty and/or Humid Livestock Pen Mill Laundry Changing Room	Hot and Smoky Kitchen Engine Room Test Beds	Open Areas Atrium Theatre Hanger Oil Rig Turbine Hall
Electronic Equipment Electrical Switchgear Electric Motors Cable Conduit	Cable pyrolosis (toxic fumes) Electrical Arcs (ignition source) Associated electrical	**ASPIRATED** 614P 614I	ASPIRATED 614P	614P	—	—	**ASPIRATED** **FLAME** BEAM
Fabrics, Clothes, Soft Furnishings Animal Bedding Wood Shavings	Smouldering (difficult to locate-toxic fumes) Likelihood of flashover	—	**ASPIRATED** **614CH** 614P	**614CH** 614P	**614CH** 614P	614CH 614T	**614CH** FLAME
Flammable Liquids Paint Solvent Flammable Gas Unstable Chemicals Foodstuffs	Flaming fire Rapid build-up of dense smoke High temperature Associated explosion danger	**FLAME** **614I** 614P 614CH	**FLAME** **614I** 614P 614CH	**FLAME** 614I 614CH	**FLAME** 614CH	**FLAME** 614T	**FLAME**
General Organic Waste Animal Fodder Wooden Structures Solid Fuels	Smoke and Flame Initially fairly slow but high temps. once established	—	**614CH** **614P** 614I	**614CH** 614T	**614CH** 614P 614T	**614T** 614CH	**614CH** **FLAME**
Plastic Chemicals Machinery Building Materials Unknown Contents	Type of risk may vary as can the type of fire (may require a mix of detection types)	ASPIRATED 614CH 614P 614I	**614CH** 614I 614T FLAME	**614CH** **614P** 614I FLAME 614T	**614CH** FLAME	**614T** 614CH	**FLAME** **614CH** BEAM

Detectors in **bold** typeface indicate the most suitable - other types indicated may not be optimum for reasons of performance or cost, but real situations may require a combination to cover likely risks.

Collective Manual Call Points

SU0600 15V Manual Call Point

The SU0600 15V Manual Call Point (MCP) clamps the line voltage to 15 volts when actuated. When used on the same circuit as collective fire detectors, it complies with AS1670.1 by not extinguishing the LED indicator of an already activated fire detector. This MCP has a plastic coated frangible element to ensure safe and reliable operation, producing no dangerous glass shards. The MCP is operated by simply pressing on the centre of the frangible element until it snaps. This releases the MCP's micro switch, which signals an alarm at the FIP and illuminates the integral LED indicator. The unit features IN and OUT terminals, which are requirements of AS1670.1 and is compatible with the MX4428 ADR-M, F3200 (band 3 Instant Alarm) and F08 version 3.

Specifications

Operating Voltage	18 to 28Vdc
Quiescent Current	5µA max. @ 24Vdc
Alarm Current*	30mA max.
Alarm Current	1mA max @ 8Vdc
Alarm Voltage	14 to 16Vdc
Reverse Polarity Current	100mA max.
Reverse Polarity Voltage	0 to 1Vdc
Ambient Temp	-10 to +70°C Indoor only
Relative Humidity	10% to 95% (non cond.)
CSIRO ActivFire Listed	afp-1385

Part Numbers

SU0600	15V MCP (excl. backbox)
SU0632	Red Backbox
SU0615	Transparent Hinged Cover
515.001.025	Spare Glass (pk 5)

*Max. current must be externally limited

SU0631 Manual Call Point

The SU0631 Manual Call Point is supplied with one normally open and one normally closed contact. Selecting either the "Normally Open" or "Normally Closed" contact is easily achieved by simply connecting the terminal block to the required connection in the back of the MCP. Single pole changeover switching can be achieved with the use of two terminal blocks. The Call Point and Backbox are ordered separately. The call point is operated when the frangible glass element is snapped, releasing the MCP's micro switch, which signals an alarm to the fire panel.

Specifications

Max. Operating Voltage	30Vdc
Max. Switch Current	2A
Cable Termination	0.5 to 2.5 mm^2
Relative Humidity	0 to 95% (non/cond)
Ambient Temperature	-10°C to +55°C
Weight	110g (flush)
Ingress Protection	IP24D

Part Numbers

SU0631	Manual Call Point
SU0632	Red Backbox
SU0615	Transparent Hinged Cover
SC070	Spare Test Keys (pkt10)
515.001.025	Spare Glass (pkt 5)

See page 12 for MCP accessories

Weather STOPPER

STI6535 Weather STOPPER

The callpoint STOPPER provides protection from malicious or accidental activation of manual callpoints. Available for flush or surface mounted callpoints the 'STOPPER' is also available with optional high pitch sounder which is activated when the lid is lifted. An optional 'Break-Seal' fitting kit allows 'Break-Seals' to be used to provide extra protection.

IP036 Break Seal Kit

Specifications

	STI6535	STI3150
Dims (HWD)	210x137x57.5	254x178x86
Call Point Size	100x100x57.5	160x160x120
Ingress Protection	Weatherproof	

Part Numbers

515.001.033	IP036 Break Seal Kit
515.001.032	STI6533 Surface fit Weather STOPPER with sounder
515.001.035	STI3150 Weather Stopper II
515.001.036	STI6535 Weather Stopper

Weather STOPPER II

STI3150 Weather STOPPER II

The Weather STOPPER II extends the life of weather exposed callpoints, by offering protection against harsh conditions and environments, eg, oil rigs and ship decks. While offering environmental protection the Weather STOPPER II are constructed from polycarbonate which will also guard against tampering or accidental operation of devices.

SU0611 Waterproof Callpoint

This surface mounting Manual Call Point has a plastic coated frangible element to ensure safe and reliable operation, producing no dangerous glass shards. The SU0611 is an IP67 rated MCP wih a single pole changeover switch configuration.
SU0611 is operated by simply pressing on the centre of the frangible element until it snaps. A hammer, or other impact device, is not required. The snapped frangible element releases a microswitch, which signals an alarm at the CIE. It carries LPCB approval.

Specifications

Operating Voltage	230VAC (max.)
Operating Current	3A @ 230VAC (max.)
Dimensions (HWD)	125x125x80 mm
Ingress Protection	IP67
Not CSIRO ActivFire listed by Tyco	

Part Numbers

SU0611	MCP
515.001.025	Spare Glass (pk 5)
SU0622	Gasket Pack of 5

SU0612 Rainproof Callpoint

This surface mounting Manual Call Point has a plastic coated frangible element to ensure safe and reliable operation, producing no dangerous glass shards. The callpoint is operated by simply pressing on the centre of the frangible element until it snaps. A hammer, or other impact device, is not required. The snapped frangible element releases a microswitch, which signals an alarm at the CIE. The SU0612 provides IP55 protection for the terminal enclosure and IP55 for the switch. Ex rated devices are available. Contact TSP.

Specifications

Operating Voltage	230VAC (max.)
Operating Current	3A @ 230VAC (max.)
Dimensions (HWD)	123x123x80 mm
Ingress Protection	IP55
Not CSIRO ActivFire listed by Tyco	

Part Numbers

SU0612	MCP
515.001.025	Spare Glass (pk 5)
SU0623	Gasket Pack of 5

Manual Call Point Ancillaries

Unless stated the Tyco indoor manual call points are supplied as flush mount units. The Tyco range are approved for use with the standard backbox if surface mounting is required.

Part Numbers

SU0605	Spare glasses, WORMALD white English text on clear background (Pack 10)
515.001.025	Spare glasses, clear text on white background, no logo (Pack 5)

Part Number

SU0632	Standard Red surface mounting back box for CP200/500 & 900 indoor callpoints

Part Number

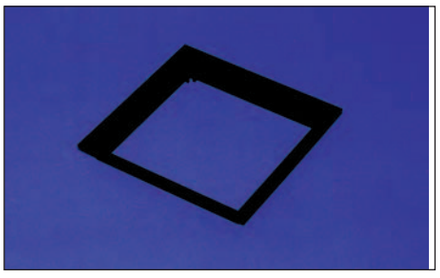
SC070	Packet of ten Test keys for Tyco indoor MCPs (SU0601 & SU0631)

Part Number

SU0615	Transparent hinged cover to suit all SUxxx callpoints (MCP not included)

Part Number

SR3T-P	Red surface mounting back box (for indoor callpoints) with terminals fitted.



Part Number

515.001.026	Black callpoint bezel for Tyco CP200/500/900

Tyco Sounder Base Applications Table

Product Code	**577.001.035**			
Description	601SB Collective			
c.i.e.	Collective only			
Powered From	24Vdc			
Detector required to Operate?	No			
Park Clip Colour	Green			
Current @ 68dBA (min. volume)	1.2mA			
Current @ 90dBA (max. volume)	6.8mA			
Current @ 100dBA (fixed volume)	-			
Dutch Slow Sweep7	Yes			
Temporal 4	Yes			
Slow Sweep3	Yes			
March Time Beep25	Yes			
March Time Beep26	-			
Fast Sweep2	Yes			
Temporal 3 (ISO)	Yes			
Alternating 211	Yes			
Alternating 29	-			
Continuous14	Yes			
Continuous	-			

2, 3, 7, 9, 14, 25, 26 = ROSHNI tone number * Slow sweep = 5 Hz **Fast Sweep = 15 Hz *** Continuous Sweep = 825 Hz

Addressable Responders

ADR-M Supports 15V Manual Call Point & Collective Detector range

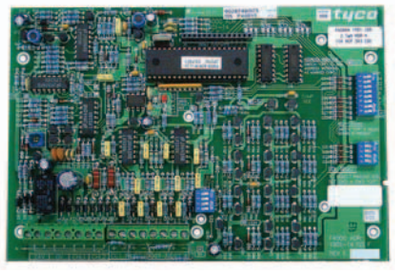
FP0755 ADR-M, 1901-198 4mA 15V MCP

The **FP0755** version of ADR supports the 15V MCP, the 614 series of detectors and all the other detectors from earlier versions of ADR, along with some new programmable circuit types.
The ADR-M and its new version software replaces the existing ADRs for standard production and can be purchased under part numbers listed. The existing ADR part numbers will still be available in low quantities for service replacements and upgrades. Please note that the new ADR-M software MUST NOT be installed in any existing 2.5mA or 4mA ADR PCBs as it will not work properly!

The **PA0844** version of ADR-M is used as a retrofit where existing detector circuits use a resistor ELD in the range of 1k5 to 3k3 ohms (restrictions apply), and Intrinsically Safe applications – since the intrinsically safe Active ELDs (EOL002ZEx) are no longer available for the standard ADR-M and the replacement units (EOL002B) are not intrinsically safe approved. The module must be set for passive ELD (SW2 off). As there are no R2 resistors fitted, these do not need to be cut.

Part Numbers

FP0755	ADR-M 1901-198 4mA 15V MCP in box
FP0574	ADR 2 cct Flameguard c/w RRM
PA0815	PCB 1901-198 ADR-M 4mA 15V MCP
PA0844	PCB 1901-200 ADR-M 2.5mA 3k3 EOL
SF0212	Software, ADR-M V2.21 OTP
FP0529	Empty ADR box



PA0844 ADR-M, 2.5mA 3k3 ELD for I.S. Detectors

Module Mounting Boxes

K2142 Double Gang Back Box

Specifications

Dimensions (HWD)	87x148x14 mm
Material	PC/ABS

Part Numbers

K2142	Plastic Back Box
517.035.011	Aluminium Back Box

M520 Module Cover

Specifications

Dimensions (HWD)	87x148x14 mm
Material	PC/ABS
Part Number	M520

FP0529 Responder Box showing modules fitted

Specifications

Dimensions (HWD)	240x185x53 mm
Material	1.2mm Galv. Steel
Part Number	FP0529

Multi Protocol Responder (MPR)

The MPR has the following features:
* Supports Series 130 loop & devices
* Supports 2 wire loop/lines up to 2km in length
* Up to 198‡ addressable devices per loop
* Supports all addressable devices previously supported by the AAR:-
  - C7xA and P7xA smoke detectors
  - ADU002
  - ADU003A
  - ADU004A
  - ADU006
  - SCI-2 Short Circuit Isolators
* Supports Olsen Z54A Addressable Bases
* Improved Analogue Loop fault tolerance. An open circuit on either wire, anywhere on the loop, will not affect operation of the devices on the loop. Also, open circuit of either wire produces a single event
* Up to 32 MPRs per responder loop
* Single PCB construction for easier maintenance and installation
* PCB fits into F3200 card rack for high density mounting - eg. F4000 19" rack cabinet

The MPR is hardware and software compatible with the AAR (2 wire mode only), and can replace an AAR running in 2 wire loop (line) mode with no re-programming of the F4000 panel.

‡ Up to 99 Detectors and 99 Devices

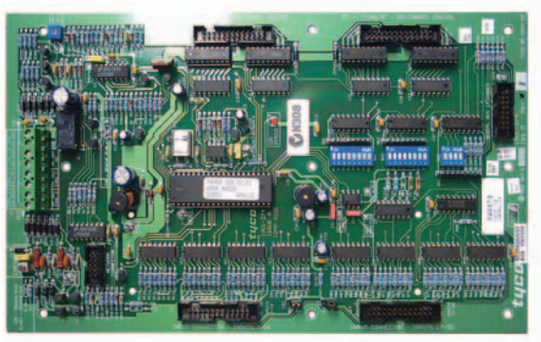
Part Numbers

FP0575	FP, MPR 1901-141 in box
PA0713	PCB Assy 1901-141 MPR
LT0139	MPR Technical Manual
LT0140	MPR Engineering Manual

Input/Output Responder (IOR)

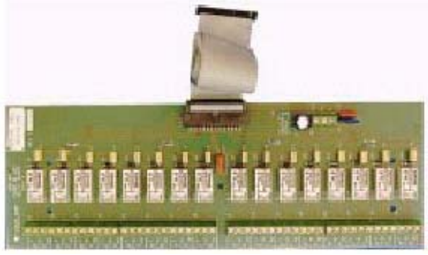
The IOR is a single responder which draws its DC operating power from, and communicates with the MX4428 Fire Indicator Panel via the 4 wire loop. Connection to the MX4428 loop is via demountable screw terminals. Field connection of inputs/outputs is provided by screw terminals on separate termination boards. These connect to the IOR by 26 way Flat Ribbon Cables (FRCs) which have to be ordered separately.

The IOR is configured by DIL switches for base address, number of equivalent ADRs, input type and number of output boards. The MX4428 Master is programmed as if the equivalent configuration of ADRs and Relay Responders (ARR) were present. The IOR inputs can be used for monitoring "clean contacts" open collectors or TTL outputs. The IOR outputs are open collector and can be used with an IOR Output Termination Board to switch LEDs, etc. Alternatively the IOR can connect directly to an MX4428 16 way Relay Board. There is a nominal 650mA current limited 24V output to power the LEDs, relay coils, etc. Please note that current to drive these outputs is drawn off the loop, unless supplied externally.



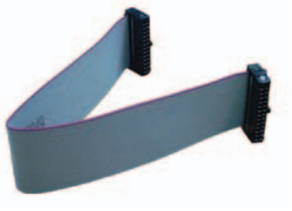
PA0473 IOR Controller Board 1901-72

Relay Board (IOR)



PA0470 16W Relay Board 1901-64 c/w LM0056

The 16 way Relay Boards may be connected to either or both of the Output connectors on the IOR to provide 16 or 32 clean contact relay outputs. A 1.4m 26 way FRC (LM0056) is supplied with the relay board for connection to the IOR



FRC 26W Style B for IOR
LM0044,45,46,56

These assembled 26 way FRCs are available to connect the IOR to termination boards. Cables should be selected according to the particular mounting requirements.

For more information, refer to the IO-NET section.

Part Numbers

Unprotected Termination Boards

PA0483	16W Unprotected Term.Bd, no resist.
PA0769	16W Unprotect. Term Bd c/w resist.

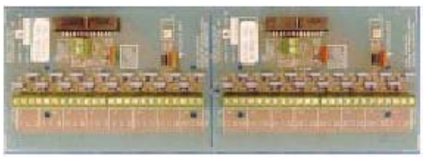
Looms & Cables

LM0044	FRC, 26W Style B, 2m
LM0045	FRC, 26W Style B, 5m
LM0046	FRC, 26W Style B, 0.5m

Protected Termination Boards

PA0474	32W Input Protect. Term. Board
PA0475	32W Output Protect. Term. Board

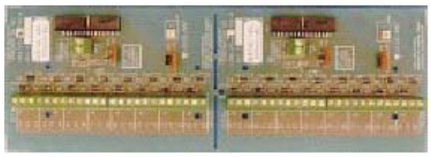
Input Termination Boards (IOR)



PA0474 IOR 32W Input Termination 1901-73-1

The IOR Input Termination Board allows termination of up to 1.5sq mm field wiring in screw terminals. The termination board is connected to the IOR using 26 way FRC (One FRC is required for each 16 input circuits). The termination boards are available for 16 or 32 inputs. A 32 way termination board is the same size as a 16 way relay board and fits the same mounting hole pattern. A 16 way termination board is half of a 32 way board.

Output Termination Boards (IOR)



PA0475 IOR 32W Output Termination 1901-73-2

The IOR Output Termination Board allows termination of up to 1.5sq mm field wiring in screw terminals. The termination board is connected to the IOR using 26 way FRC (one FRC is required for each 16 output circuits). The termination boards are available for 16 or 32 outputs. For mounting the PA0475 is the same as the PA0474.

Responder Relay Module (RRM)

The Responder Relay Module (RRM) is an optional add-on board to an ADR. When added the responder is referred to as an Advanced Relay Responder (ARR). It provides four relay outputs, which may be individually configured as supervised or not.
The RRM provides a current limited 24V output (100mA), which may be used to power external equipment, as long as they are wired through NO relay contacts. The RRM must be used on ADRs with software versions V1.01 or greater, to provide RRM present monitoring.
The RRM requires a 24 Vdc nominal power supply, although its circuit operates satisfactorily down to 13 Vdc.

Part Number

PA0453 PCB Assy 1901-15 RRM

MX4428/F4000 Loop Booster

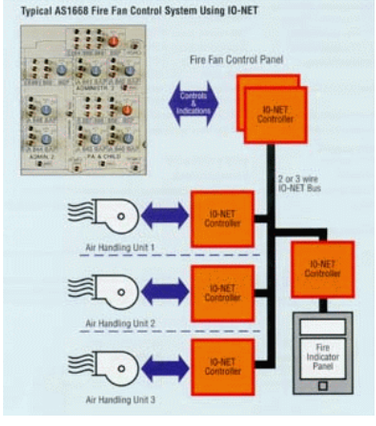
The MX4428/F4000 Loop Booster overcomes problems such as Responder loop voltage drop and excessive loop length that would otherwise necessitiate a restriction in responders or the use of thicker loop cable.
By providing additional power supply capacity to an MX4428/F4000 loop, the Loop Booster is a practical and cost-effective means of overcoming these problems, thus enabling extension of the loop length, additional Responders, or smaller cable size to be used. In fact, one loop Booster will allow three times the loop current, loop length, or 1/3 the cable resistance. The use of Loop Boosters in an MX4428/F4000 system completely overcomes loop voltage drop as a practical limit to system size and allows a loop to be extended until the 127 Responder limit is reached.
The Loop Booster contains its own batteries and charger and when placed in the loop, provides power to a section of the loop and monitors the other. If the voltage on the monitored side falls below 17.0V then the Loop Booster supplies power to this leg as well. It checks at regular intervals to see if the normally monitored leg can self-establish a voltage of greater than 17.0V.
The Loop Booster has an ADR and RRM built into it allowing fault and control signals to be conveyed to and from the FIP via the Loop communications. The Loop Booster is able to perform a local battery test and to energise the power supply for the monitored leg of the loop. It can transmit signals to the FIP (e.g. battery test fail, battery low, battery fail and/or charger fault) as well as a monitored leg voltage fail. Remote activation of the battery test and loop relay can be carried out at the FIP by using an ACZ and suitable output logic equations.

Specifications

Power	240 VAC +6%, -10% 50Hz, 150W
Battery Requirements	AS PER FIP
Operating Temperature	-5°C to +45°C
Relative Humidity	10% to 90% (n/cond)
Operating Currents	
Booster Board	40 mA nominal
Indicators	8 mA per LED
Output Relay Rating	5 A (Emergency Feed)
Output Terminals [1]	
+VNBF	27V nom, 1.6A fuse not battery backed
+VBF	27V nom, 1.6A fuse battery backed [2]
Material	1.6mm MS
Finish	Epoxy Paint
Dimensions (HWD)	680x470x167mm
Weight	16 kg (no batteries)
Max. Battery Size (HWD) (for each battery)	170x165x125mm
Part Number	FP0487

1. Outputs for wiring to relay contacts etc.
2. Battery charging capability is determined by:-
   - Booster operating current
   - ADR loop current
   - other standing loads

IO-NET



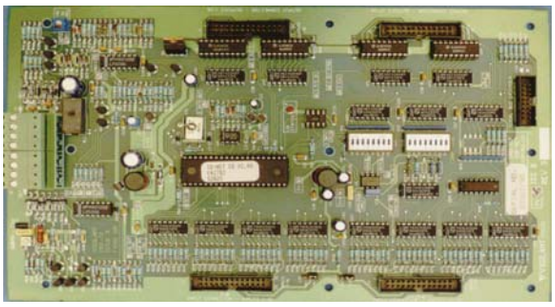
The IO-NET programmable controller is a stand-alone or networkable unit that can be used to provide similar functions to a traditional logic controller. It can also be programmed to monitor the F3200/MX4428 RZDU protocol or provide versatile AS1668 air-handling control and indication functions. Multiple IO-NET units may be connected together (2-wire bus) to provide low cost point-to-point or distributed telemetry for multiple locations. IO-NET can support at least 32 controllers on a 1mm^2 line up to 3km long. Modem and fibre optic options allow operation over longer distances or in "noisy" environments. The 32 inputs at each IO-NET module are transmitted to its pair for output on the 32 outputs, giving bi-directional transfer of information over the 2 wires. Multiple pairs may in fact be placed on the same physical 2 wires to save on cabling costs for large systems and allow easy expansion of existing systems.

This default mode of operation will only require setting up the DIP switches on the IOR, no factory or on-site programming is required.

Part Numbers

PA0498	PCB 1901-117 IO-NET Controller
PA0474	PCB 1901-73-1 IO-NET 32W Input
PA0475	PCB 1901-73-2 IO-NET 32W Output
PA0481	PCB 1904-100 RZDU/RS232 I/F
PA0483	PCB 1901-103 IOR Unprotected Term
PA0470	PCB 1901-64 16W Relay board
PA0700	PCB 1901-120 IO-NET Programmer
PA0769	PCB 16W Unprotected Term. & resistors
SF0239	IO-NET Controller software V2.01
LM0044	FRC 26W Style B, 2m
LM0045	FRC 26W Style B, 5m
LM0046	FRC 26W Style B, 0.5m
LM0056	FRC 26W Style B, 1.4m
LT0115	IO-NET User's Manual

IO-NET Controller



PA0498 IO-NET Controller

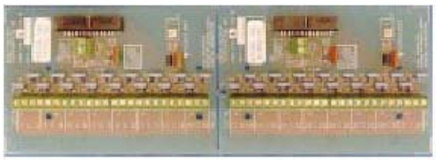
Each IO-NET Controller has 32 digital inputs and can provide up to 32 programmable outputs. From this starting point the system can be expanded up to a maximum of 128 Controllers on one IO-NET communications line. At least 32 Controllers can be supported on a 1mm^2 line up to 3 km long.
The IO-NET Programming Unit transfers the program to the IO-NET Controller PROMs. The Programming Unit is supplied complete with a cable to connect to a PC, the compiler programming software and the user manual. An external 24Vdc supply is required.
IO-NET is able to be programmed using SmartConfig Version 1.6 onwards.

IO-NET Programmer

PA0700 IO-NET Programmer

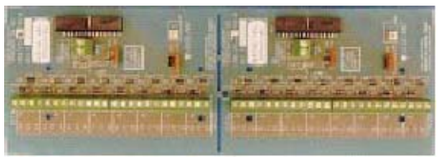
IO-NET 16 Way and 32 Way Protected Termination Boards

The 16 Input and 32 Input, along with the 16 and 32 Output Protected Termination Boards are used for connecting field wiring to the IO-NET Controller. These termination boards include transient suppression components to protect the IO-NET from electrical transients. They must be used to terminate all IO-NET Controller input cabling that extends beyond the IO-NET enclosure.



PA0474 IO-NET 32W Input

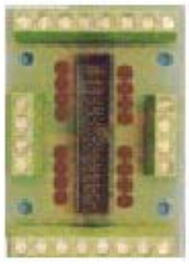
Specifications	
Cable Termination	1.5mm^2 max.
Dimensions	
16 Way	135 x 93 x 23 mm
32 Way	270 x 93 x 23 mm
Part Numbers	
PA0474	32W Input Protect. Bd
PA0475	32W Output Prot. Bd



PA0475 IO-NET 32W Output

IO-NET 16 Way Unprotected Termination Boards

PA0483

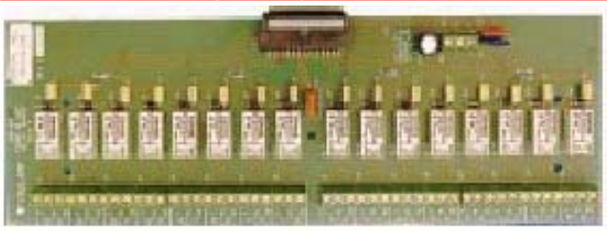


PA0769

Unprotected Termination Boards are small printed circuit boards providing direct screw terminations for 16 inputs or 16 outputs of an IO-NET Controller. No transient protection is provided so these boards should only be used where the wiring is not extended beyond the IO-NET Controller enclosure. Typical uses include connection of mimic lamps and control panel switches to an IO-NET Controller. A version of this board is available for connection to LEDs without their own current limiting. The current limiting 3k3 series resistors sets the current to approximately 7 mA from 24Vdc. High efficiency LEDs must be used.

Specifications	
Cable Termination	1.5mm^2 max.
Dimensions	69 x 46 x 18 mm
Part Numbers	
PA0483	16W Unprotected Term. Bd, no resistors
PA0769	16W Unprotect. Term Bd c/w resistors.

IO-NET 16 Way Relay Board



The 16 Way Relay Board has the same physical dimensions and footprint as the 32 Way Protected Termination Board. It comes complete with a 1.4 metre flat ribbon cable for connection to one of the IO-NET output connectors.

Specifications	
Relay Coil Current	12mA @ 24 Vdc
Relay Contacts	30V 2A resistive, 1A inductive
Contact Configuration	Single pole, changeover
Cable Termination	1.5mm^2 max.
Dimensions	270 x 93 x 25 mm
Part Number	PA0470

RZDU to RS-232 Interface Board

The RZDU to RS232 Interface is a small printed circuit board that converts Remote Zone Display Unit serial communications from a fire indicator panel into RS232 compatible signals. This module is required for an IO-NET Controller to receive information from an F3200/MX4428/F4000 fire alarm panel.

Specifications	
Operating Voltage	17 to 30 Vdc
Operating Current	5mA
Dimensions	270 x 93 x 25 mm
Part Number	PA0481

Analogue Addressable 130 Series Modules

ADS130 Short Circuit Isolator

The ADS130 short circuit isolator protects the MX4428/F4000 analogue loops against short circuits. When a loop short circuit occurs between ADS130s they disconnect the section of the cable containing the short, allowing the rest of the loop to function. ADS130s are usually placed between zones so that a short circuit will only affect one zone and any loss of detection capability will be minimised. The ADS130 isolators automatically connect the loop at power up and after removal of a short circuit. An in-built yellow LED provides a visual indication of isolator status.

Specifications	
Operating Voltage	15 to 32Vdc
Quiescent Current (max.)	300µA @ 24Vdc
Supply Current (shorted o/p)	11mA
ADS130s per MPR	15 max.
Max. no. Devices betw'n ADS	25
Humidity	10% to 95% (n/cond)
Ambient Temperature	-5°C to +45°C
Weight	140g
CSIRO ActivFire Listed	afp-1446
FPANZ Listed	SS/605
Part Number	ADS130

ADC130 Control Module

The ADC130 Control Module is used to switch external loads. The ADC130 has two modes of operation. In switched supply mode, it switches an external power source through supervised wiring to a load. By using an external relay, the power supply can also be supervised. In isolated relay mode, the module provides an isolated SPST relay.

The ADC130 incorporates a magnet actuated test that checks the operation of the module's electronics and fire panel interface. An inbuilt LED provides indication of module status. The fascia plate provides an aesthetic cover for the module when it is surface mounted.

Specifications	
Operating Voltage	18 to 28Vdc
Quiescent Current (max.)	250µA
Supply Current (max.)	6mA
Relay Contact Rating (max.)	
Resistive	2A 30Vdc
Inductive	1A 30Vdc
Supervised Line Length	100m
Cable Size	1 to 4 mm^2
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-5°C to +45°C
Weight	140g
CSIRO ActivFire Listed	afp-1446
FPANZ Listed	SS/604
Part Number	ADC130

ADM130 Monitor Module

The ADM130 is an addressable input module that allows the connection of (normally open) hard contact detection devices to MX4428/F4000 analogue addressable systems. The module's two wire input is supervised for open circuit faults. An LED indicator allows visual monitoring of the module's status. The ADM130 incorporates a magnet actuated test that checks the operation of the module's electronics and fire panel interface.An output is provided for connection to a remote LED indicator. Suitable remote indicators allow visual indication of the module's alarm status

Specifications	
Operating Voltage	15 to 28Vdc
Quiescent Current (max.)	250µA
Alarm Current (max.)	10mA
External Output Drive	5mA max.
Supervised Line Length	100m max.
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-5°C to +45°C
Weight	130g
CSIRO ActivFire Listed	afp-1446
FPANZ Listed	SS/601
Part Number	ADM130

ADM131 Mini Monitor Module

The ADM131 is an addressable input module that allows the connection of (normally open) hard contact detection devices to MX4428/F4000 analogue addressable systems.

The module's two wire zone input is supervised for open circuit faults. The ADM131 is easily addressed using two robust rotary switches.

Specifications	
Operating Voltage	18 to 28Vdc
Quiescent Current (max.)	250µA
Supervised Line Length	100m max.
Cable Length	150mm
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-5°C to +45°C
Weight	35g
CSIRO ActivFire Listed	afp-1446
FPANZ Listed	SS/602
Part Number	ADM131

ADM133 Micro Monitor Module

The ADM133 is an addressable input module that allows the connection of (normally open) hard contact devices to a Tyco MX4428/F4000 analogue addressable systems.

The module's two wire input is supervised for open circuit faults. An output is provided for connection to a remote LED indicator. Suitable remote indicators allow visual indication of the module's alarm status.

Specifications	
Operating Voltage	15 to 28Vdc
Quiescent Current (max.)	250µA
Alarm Current (max.)	6mA
Supervised Line Length	100m max.
Cable Length	150mm
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-5°C to +45°C
Weight	35g
CSIRO ActivFire Listed	afp-1446
FPANZ Listed	SS/603
Part Number	ADM133

Analogue Addressable 130 Series Detectors

The 130 series are a range of low profile Analogue Addressable fire detectors. These unobtrusively styled detectors have a number of unique design features to improve their operation, installation and ease of servicing. Using the MX4428 c.i.e., up to 99 detectors and 99 modules can be supported by one MPR loop module, with loop length up to 2000 metres. The advanced SmartSense Algorithm, unique to MX4428, significantly reduces response to non-fire phenomena.

C131A Ion Smoke

The C131A dual-chamber ionisation smoke detector contains a state-of-the-art sensing chamber and analogue communication electronics. Used in conjunction with the Vigilant MX4428 panel, the C131A has a high degree of false alarm immunity thanks to the advanced SmartSense algorithms.
The detector mounts on the Z131A or Z132A base and is designed to provide open area protection. Two LED's on each detector illuminate during alarm to provide 360° alarm indication. An optional remote LED can also be fitted
The indented circle on the cover on the C131A differentiates it from the visually similar P131A.

Specifications	
Operating Voltage	15 to 28Vdc
Quiescent Current (max.)	250µA
Alarm Current (max.)	10mA
External Output Drive (max.)	5mA
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-5°C to +45°C
Weight	160g
Remote Indicator	E500 Mk2 Series
CSIRO ActivFire Listed	afp-957
FPANZ Listed	VF/301
Part Number	C131A

P131A Photoelectric Smoke

The P131A photoelectric smoke detector contains a state-of-the-art sensing chamber and analogue communication electronics. Used in conjunction with the Vigilant MX4428 panel, the P131A has a high degree of false alarm immunity thanks to advanced SmartSense algorithms.

The detector mounts on the Z131A or Z132A base and is designed to provide open area protection. Two LED's on each detector illuminate during alarm to provide 360° alarm indication. An optional remote LED can also be fitted.

Specifications	
Operating Voltage	15 to 28Vdc
Quiescent Current (max.)	250µA
Alarm Current (max.)	10mA
External Output Drive (max.)	5mA
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-5°C to +45°C
Weight	170g
Remote Indicator	E500 Mk2 Series
CSIRO ActivFire Listed	afp-956
FPANZ Listed	VF/302
Part Number	P131A

T131A Heat

The T131A heat detector is a state-of-the-art dual thermistor detector with analogue communication electronics. Used in conjunction with the Vigilant MX4428 panel, the T131A has a high degree of false alarm immunity thanks to advanced SmartSense algorithms. It is panel programmable to either Type A (with Rate Of Rise) orType B (fixed temperature only) to maximise system design flexibility.
The detector mounts on the Z131A or Z132A base and is designed to provide open area protection. Two LED's on each detector illuminate during alarm to provide 360° alarm indication. An optional remote LED can also be fitted.

Specifications	
Operating Voltage	15 to 28Vdc
Quiescent Current (max.)	250µA
Alarm Current (max.)	10mA
External Output Drive (max.)	5mA
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-5°C to +45°C
Weight	140g
Remote Indicator	E500 Mk2 Series
CSIRO ActivFire Listed	afp-955
FPANZ Listed	VF/205
Part Number	T131A

P132A Laser Smoke

The P132A Addressable Laser Smoke Detector is a very high sensitivity smoke detector that utilises a laser photoelectric sensing chamber, providing significant improvements in signal-to-noise ratio compared with an LED light source. The detector is designed to provide open area detection for clean environments, or cubicle detection for high value equipment. The maximum number of detectors per loop is 99. The detector address is set by rotary decade switches on the back of the detector. Two indicating LEDs can be programmed via the FIP to blink as the detector is polled and show constant red when in alarm. The P132A Laser mounts to the Z131A base or Z132A Sounder Base, both of which incorporate a tamper resistance feature that can prevent removal of the detector without the use of a tool.

Specifications	
Operating Voltage	15 to 32Vdc
Quiescent Current	230µA to 330µA
Alarm Current (LED on)	6.5mA (max.)
Relative Humidity	10% to 93% (n/cond)
Ambient Temperature	0 to +40°C
Weight	150g
Dimensions	155 dia x 89 H mm
Sensitivity	0.6% to 4.5% Obs/m
CSIRO ActivFire Listed	afp-1438
FPANZ Listed	VF/334
Part Number	P132A

Z132A Sounder Base

The Z132A Sounder Base provides mounting facilities and an inbuilt audible alarm for the 130 Series detectors. The sounder actuates whenever its associated detector enters an alarm state, providing a 90dB signal at a distance of 3 metres. To ensure that the sounder operation does not interfere with normal detector operation, the Z132A requires a separate 24Vdc supply that is electrically and physically separated from the detector supply. For supervision of the 24V line, an ADM131 Monitor Module and 24V relay may be used. For activation of a group of sounders from any one group of detectors, an ADC130 Control Module and 24V relay is used.

Specifications	
Sounder Supply Voltage	17 to 32Vdc
Sounder On Current	15mA
Sounder Off Current	1mA
Loop Current (quiescent)	0µA
Loop Current (alarm)	700µA
Quiescent Current (max.)	250µA
Sounder Output	90dBA at 3m
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-5°C to +45°C
Weight	187g
CSIRO ActivFire Listed with 130 series detectors	
FPANZ Listed	VF/413
Part Number	Z132A

130 Series Detector Bases

The **SMB600** Mounting Base consists of the following parts:
1x Plastic surface mount base
2x #6 x 1" sheet metal screws
2x #8-32 x 1/2" screws
2x Plastic anchors

The **Z131A** Detector Base should be mounted on a flat surface with suitable fasteners.

Specifications	
Sounder Supply Voltage	17 to 32Vdc
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-5°C to +45°C
Weight	187g
CSIRO ActivFire Listed with 130 series detectors	
FPANZ Listed with 130 series detectors	
Part Numbers	
Z131A	Analogue Detector Base
SMB600	Series 130 Mounting Base

D51Z131 Duct Sampling Unit

The D51Z131 Duct Sampling Unit consists of a D51B duct housing fitted with a Z131 base in readiness for fitting an analogue addressable P131 photoelectric smoke detector. The DSU is designed to sample air in air conditioning ducts and pass the air through the smoke detector. The D51B is fixed on the outside of the duct to be sampled, allowing easy access for detector servicing and replacement of the dust filter. To cater for most duct sizes, a sampling tube extension is available in 3 metre lengths. The Tyco E500 Mk2 Series Remote Indicators can be used for remote indication of an alarm.

Specifications	
Duct Pressure*	-1.15 to +3.0 kPa
Sampling Tube Length	160mm minimum
Max. Duct Width	1.8m
Remote Indicator	E500 Mk2 Series
Not CSIRO ActivFire Listed	
Part Numbers	
D51Z131	Z131 Base fitted
D51L	Baffle box of 10
D51F	Filter box of 10
D51T3	3m Sampling Tube
D51K100	Sampling Tube End Cap (packet of 10)

*AS 1603.13-1998 test

Simplex 4100U Analogue Addressable Fire Panel (c.i.e.)

4100U

The Simplex Fire Products 4100U is an analogue addressable fire alarm system that provides extensive and powerful features to satisfy a wide variety of applications and site requirements. On-site programmability allows mapping logic for inputs and outputs, custom labelling, and later revisions. Detector and control point expansion is available up to 1000 points.
For quantities exceeding this, multiple panels can be networked together to form a 4120 network system.
CSIRO ActivFire Listed afp-395 (4100)
afp-1165 (4100/4120)
afp-1682 (4100U)

Part Numbers

Panels

SZ9028	4100U Stock Panel 28U

Fire Panel Front

4100-0401	8 Red LED Module
4100-0402	16 Red/Yellow LEDs
4100-0403	8/8 Mom. Switch/Red LEDs
4100-0404	8/16 Maint. Sw/Red-Grn LEDs
4100-0405	8/16 Mom. Swi/Red-Ylw LEDs
4100-0406	8 Yellow LED Module
4100-0420	A/C Reset Switch Module
4100-0450	LCD Mounted In RTU
4100-0450R	AS1603 LCD in RTU (19" RAC)
4100-9826AK	AS4428 Upgrade Kit for AS1603.4 Simplex Classic Style Panel
4100-9827AK	AS4428 Upgrade Kit for AS1603.419" Rack cabinet

Fire Panel Rear

4100-MXP	4100MXP MX Resp on 1U brkt
4100-0110	Mapnet 2 Addressable Loop
4100-0111	Mapnet 2 QUAD Isolator
4100-0113	RS232 Modem Interface
4100-0122	Rem I/F Card for Miniplex RTU
4100-0154	VESDA HLI
4100-0157A	8 AMP Power Supply / Charger (AS4428 approved)
4100-1020	2 AMP Vigilant 1948 PSU / Charger (AS4428 approved)
4100-0301	64/64 Led Switch Controller
4100-0302	24 point I/O Module
4100-0304	Remote Unit Interface
4100-3003	8XSPDT, 3A, 24Vdc Relay mod
4100-3024	24 I/O Relay m/b + (4100-0302)
4100-4321	6 Supervised Relays
4100-5004	8 AZF Monitor Zone
4100-0451	Panel Mounted Printer
4100-CPU	CPU Module
4100-0160	Fire Panel Internet Interface Module

Manuals

LT0280	4100 AS1603.4 Operator's 4100-M001
LT0281	4100/4120 AS1603.4 Install 4100-M002
LT0282	4100/4120 AS1603.4 Tech 4100-M003
LT0290	4120/2500 NDU Operator's 4100-M004
LT0293	4100 AS4428.1 Operator's 579-314
LT0294	4100/4120 AS4428.1 Install 579-315
LT0295	4100/4120 AS4428.1 Technical 579-316
LT0277	4100 EWIS Operator's 4100-M010A
LT0278	4100 EWIS Installation 4100-M011
LT0279	4100 EWIS Technical 4100-M012
LT0298	24 Point Graphic I/O Mod Installation
LT0303	GP Bracket Utilisation Drawing
LT0307	Field Wiring Diagrams

Options

4100-9256	2 unit expansion rack 15U200
4100-9257	4 unit expansion rack 28U310
4100-9258	6 unit expansion rack 40U310
4100-9259	8 unit expansion rack 40U310
4100-0401	8 red LED module
4100-0402	16 red/yellow LED
4100-0403	8/8 Mom. switch/red LEDs
4100-0404	8/16Maint. switch/red-grn LEDs
4100-0405	8/16 Mom. switch/red-yel LEDs
4100-0406	8 yel LED module
4100-0420	A/C reset switch module
4100-0450	4100 LCD in RTU
4100-9826A	4100 AS4428 u/g for AS1603 FIPs
4100-0410	PA microphone & keyswitch
FP0935	4100U-S1 ASE Door Kit
FP0937	4100U-S1 PPU/AIU Door Kit
KT0419	3U Self-Adhesive Document Holder

Features

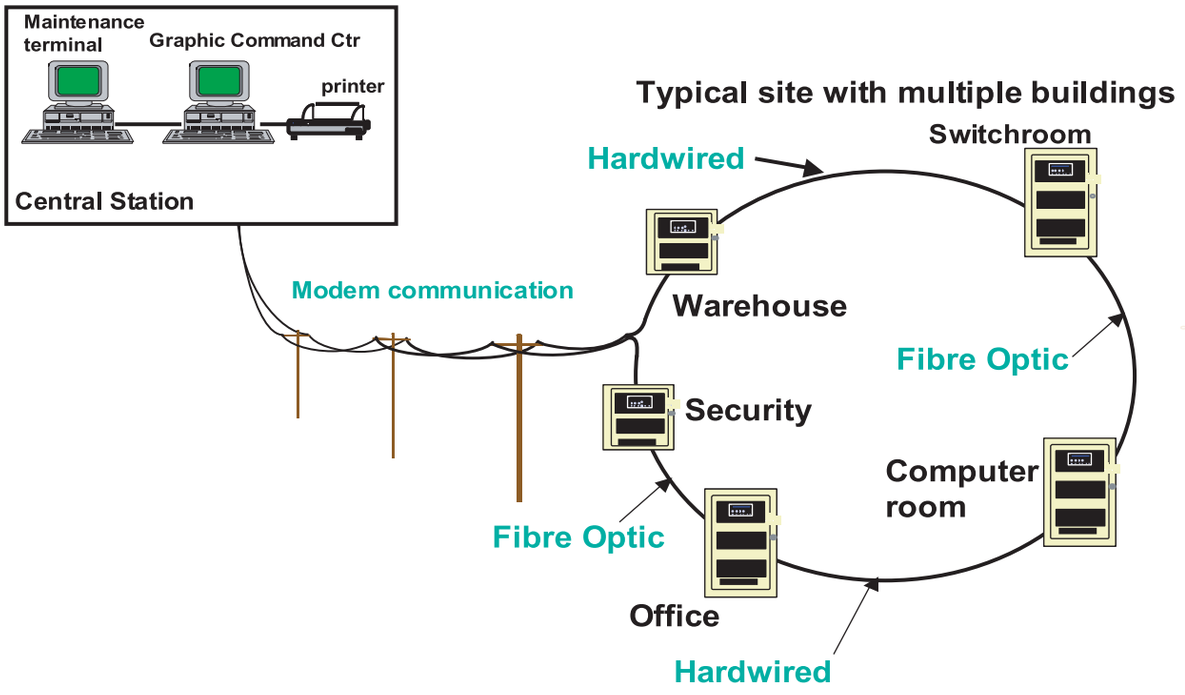
- Easy expansion with addressable loop and conventional zone cards
- On-site programmable for a wide variety of applications
- Supports on-site upload & download of panel program
- Supports conventional detector inputs and MAPNET and IDNet analogue addressable loops
- 127 devices per MAPNET loop, 250 devices per IDNet loop
- Up to 30 loops per 4100U, 2,000 points in total
- Wide range of addressable devices - detectors, sounder bases, input/output modules and 4-20mA analogue input module
- AS 1668 Fan Control module (4 fans) with rotary switches and fan status LEDs
- 9A System Power Supply (SPS) module includes built-in IDNet analogue loop driver
- Remote MINIPLEX Transponders and serial annunciators
- Networkable into large systems (4 networks of 99 panels)
- Dial-in service modem (option)
- RS232 interfaces for PC annunciators and remote printers (option)
- Panel mount printer (option)
- Four operator access levels
- 1200 event historical log (separate alarm/fault logs)
- Walk test and individual point disconnect/disable
- Programmable alarm verification, output logic control, alarm thresholds, network operation and annunciation
- SafeLinc Internet Interface Card available for remote access via client LAN
- High level links to EWIS, BMS and BACnet
- 19" rack compatible cabinet range - 18U, 21U, 28U & 40U cabinet configuration

Simplex 4100 Network Systems

Features

- Communicates Information along remote Fire Alarm Control Panel locations (defined as Network Nodes)
- Initiates Alarm Silence, Acknowledge and Reset
- Displays status of selected circuit points, point lists and network nodes
- Investigates specific point status details
- Declares system alarm from Control Panels
- Network Nodes include:-
  - 4100 series Fire Alarm Control Panels
  - 4100 series Network Processing Units (NDU), Network Display Units (2500NDU) and MINIPLEX® and Universal Transponders (UT)
  - 4190 series Graphic Command Centers
- Retrofit into existing 4100 and 2120 systems
- TrueAlarm Sensor Operation:-
  - Read status of TrueAlarm Analogue detection sensors at multiple locations
  - Remote or local sensitivity selection
- Style 7 wired communications:-
  - Single wire pair between nodes
  - Up to 5km between nodes with 1.0 mm^2 twisted shielded wire
- Optional Fibre Optics communications
- Full Network communication supervision:-
  - Network level diagnostics
  - LED Status indications on interface board
- Set host function accesses remote node data
- Remote dial-in modem for off-site data access

Flexible Network Communications



4100U-S1

The Simplex® 4100U-S1 is a cost competitive, out-of-the-box addressable system that is based on the established power and flexibility of the Simplex 4100 series of products.

4100U-S1 Operator Keypad

The entry level Simplex 4100U-S1 is supplied configured as a single loop analogue addressable fire alarm system providing a low cost solution for smaller sites requiring addressable fire alarm technology.
For typical applications such as nursing homes, offices, factories and small shopping centres, the 250 device capacity is ideally sized. Where additional capacity is required, the Simplex 4100U-S1 can be expanded to cater for medium sized installations, such as a university campus or an industrial site.

Features

- Easy expansion with up to 2 IDNet addressable loops, programmable on-site with 250 devices per loop
- Wide range of addressable devices - detectors, sounder bases, input/output modules and 4-20mA analogue input module
- Supports on-site upload & download of panel program
- Optional AS 1668 Fan Control module (4 fans) with rotary switches and fan status LEDs
- 9A System Power Supply (SPS) module includes built-in IDNet addressable loop driver
- Supports remote serial LCD annunciators
- Networkable into large systems using optional RS485 or fibre optic network media cards
- Optional RS232 interfaces for High Level Interface for BMS, VESDA, QE90, BACnet and PC annunciators and remote printers
- Four operator access levels
- 1200 event historical log (separate alarm/fault logs)
- Walk test and individual point disconnect/disable
- Programmable alarm verification, output logic control, alarm thresholds, network operation and annunciation
- SafeLincl Internet Interface Card available for remote access via client LAN
- 19" rack cabinet

Fire Panel

FP0934	4100U-S1 Single Loop AS 4428 Base Panel

Expansion Modules

4100-5004	Collective zone module; 8 zone circuits/module; Supports standard 20V detectors plus normally open contact devices
4100-3003	8 Point Auxiliary Relay Module; 8 CPU controlled auxiliary relays SPDT contacts rated for 3 amps @ 24Vdc or 30VAC
4100-4322	6 Circuit Supervised Signal Module; 6 Style Y (class B) circuits per module
4100-0113	RS-232/2120 Communications Module; Provides two RS-232-C outputs for remote printers and/or CRT; can be configured for communication with a host 2120 system; or as a Computer Port for communications to a remote system ie BMS or BAS Systems
4100-6014	4120 Modular Network Interface Module; requires two media modules, either RS485 Communications Media Card Option or Fibre Optics Media Card Option
4100-6056	RS-485 Wired Media Module mounts on 4100-6014
4100-6057	Fibre Optic Media Module mounts on 4100-6014
4100-3101	IDNet Addressable Loop Module; supports up to 250 IDNet Addressable devices or TrueAlarm Analogue sensors
4100-1282	8 Switch /16 Red/Yellow LED module, provides 8 sets of AZF indications and controls
4100-1289	64/64 LED / SWITCH Controller Interfaces up to 64 LEDs and 64 switches to the master controller for front panel annunciation. Required for expansion above 32 AZF zone controls
4100-0154	High Level Interface (HLI) to VESDA® LaserPLUS and LaserSCANNER
4100-ME0456	4100U 4x AS1668 Fan Control Module
4100-0766K	T-GEN 50 on Amplifier Bracket
ME0460	T-GEN 50 Rotary Switch no Bracket
ME0490	T-GEN 50/4100U PA Microphone with extended lead

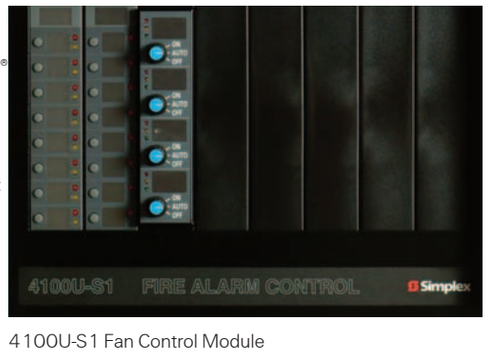
Manuals

LT0393	4100U-S1 Brigade I/F Kit Install
LT0394	4100U-S1 Install & Maintenance
LT0395	4100U-S1 Operator's

4100-0766K T-GEN 50 on Amplifier Bracket

ME0460 T-GEN Rotary Switch no Bracket

ME0490 T-GEN 50 4100U PA Mic, extended lead



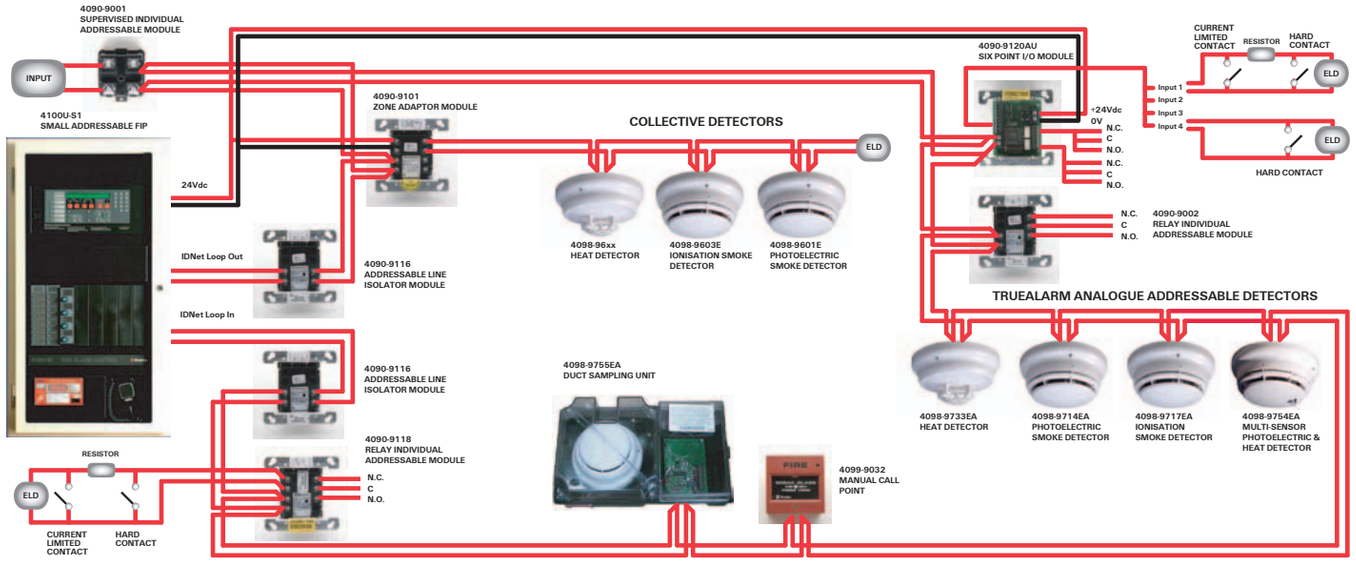
4100U-S1 Fan Control Module

Configurable

The Simplex 4100U-S1 standard configuration includes a 250 device capacity addressable loop, 3 supervised outputs, plus 16 zones of AS 4428 compliant indication and control. This can be easily upgraded as the project's needs change by adding modules such as an optional brigade signalling kit. Need to increase the panel's capacity to 500 addressable devices and 32 zones? It only requires an IDNet card and 2 additional 8 Zone LED/Switch modules that can all be fitted on site in less than 10 minutes. A maximum of 64 zones can be utilised, except where a T-GEN 50 is fitted, when 40 zones can be utilised.

Programming software allows you to panel upload and download, import and export panel data with Microsoft Excel and generate panel label inserts. Addressable modules include 4 input/2 output, with current limited sensing, line isolator, power isolator and multi-sensor with selectable (patented) detection algorithms. Each module only occupies one IDNet address.

4100U-S1 System Diagram



FP0937 4100U-S1 PPU/AIU Door Kit

FP0937 comprises:
- 1x 4U hinged door & spacer bracket, connector strip, label, & wiring fitted
- 4x M6 screws/washers/cage nuts for mounting door
- 5x Cable ties, adhesive cable tie holders for fixing wiring
- 1x Green earth lead + nut, washer for door earth
- 4x 1.25" PK screws, plastic spacers for mounting PPU

4100-ME0456 4100U-S1 Fan Control Module

The 4100-ME0456 is a 4100U style Switch/LED display module designed specifically for fan control. It complies with the requirements of AS 1668.1-1998. It has rotary swithces and LEDs for 4 sets of fans. In order to accomodate the required rotary switches, the front plate is joggled forward so that it protrudes through the trim.

FP0935 4100U-S1 ASE Door Kit

FP0935 comprises:
- 1x 4U hinged door with ASE cover and barrel nuts fitted
- 1x 3 way & 1 x 2 way connector for ASE
- 1x FP0740 FAS interface module with red, yellow and white wires
- 1x pair of red & black wires for ASE to 4100U-S1 dc power supply
- 4x M6 screws/washers/cage nuts for mounting door
- 5x Cable ties, adhesive cable tie holders for fixing ASE wiring
- 1x Green earth lead + nut, washer for door earth
- 2x M4x16 screws + washers for ASE mounting

TrueAlarm Addressable Loop Cards

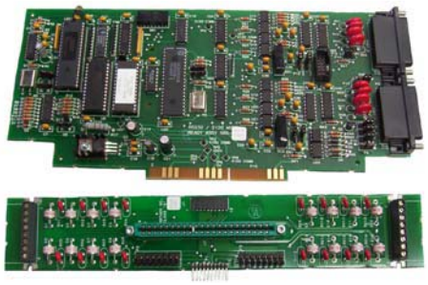
TrueAlarm System Operation
The 4100 MAPNET II Addressable Loop Card communicates with TrueAlarm smoke and temperature detectors. Every four seconds, smoke detectors transmit an output value based on their smoke chamber condition. The 4100 CPU maintains a current value, peak value and an average value of each detector's output. Status is determined by comparing the current detector value to its average value. Tracking this average value as a continuously shifting reference point filters out environmental factors that cause shifts in sensitivity.

Programmable Sensitivity
The sensitivity of each detector can be field programmed at the 4100 Control Panel for different levels of smoke obscuration (in percent) or for specific heat detection levels. In order to evaluate whether the sensitivity should be revised, the peak value is stored in memory and can be easily read and compared to the alarm threshold directly in percent. TrueAlarm heat detectors can be selected for rate-of-rise detection as either 8.3°C or 11.1°C per minute with an independent fixed limit of 58°C or 68°C. TrueAlarm operation gives the 4100 system the ability to automatically indicate when a detector is almost dirty, dirty, and excessively dirty. TrueAlarm has the ability to maintain the sensitivity level of each detector. Modular TrueAlarm detectors use the same base and different detector types (photoelectric smoke, ionisation smoke, or heat detector) can be easily interchanged to meet specific location requirements. This feature also allows intentional detector substitution during building construction. When conditions are temporarily dusty, instead of covering the smoke detectors(causing them to be disabled), heat detectors may be installed without reprogramming the control panel. Although the control panel will indicate an incorrect detector type, the heat detector will operate at a default sensitivity to provide heat detection for building protection at that location.

Displaying TrueAlarm Data
TrueAlarm data can be displayed on the system LCD, on a remote maintenance terminal, or printed on a remote printer. With the proper operator access, a TrueAlarm Service Report can be generated to list the specific details of each TrueAlarm device. This report, as well as the Status Report, can either be displayed on the remote maintenance terminal or captured permanently by using a remote 80 character printer. This information is available at the system LCD by identifying the specific point of interest and reading one point at a time.

VESDA High Level Interface

Simplex FIP with panel mounted VESDA interface 4100-0154K



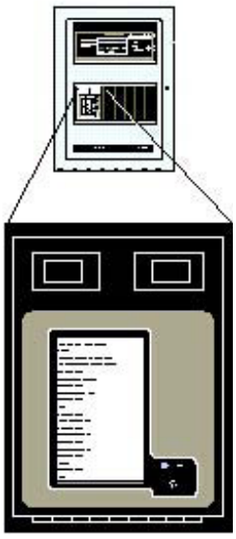
Simplex/VESDA High Level Interface (HLI) allows Simplex addressable fire detection panels to gather and process status information from VESDA LaserPLUS and LaserSCANNER high sensitivity air aspiration smoke detection systems. Hardware requirements include an Intelligent Interface Module installed in the fire alarm control panel and an HLI Module installed in the VESDA smoke detection equipment.
The combination of VESDA smoke detection and the extensive features of the Simplex addressable panel allows mission critical and high value facilities to be equipped with a low level smoke detection system that can provide very early warning of the presence of incipient fire conditions.

Pictured at left are the 4100-0154K PCBs. The Motherboard (lower - fixed in the 4100 FIP) and Interface Module (upper - fitted into Motherboard) facilitate the communication interface to the VESDA detector

Specifications	
Operating Voltage	18 to 32Vdc*
Current	132mA
Communications	RS-232, 9600 baud, 6m max
Space (4100/4120)	Plugable module requires 51mm int. rack width
Space (4020)	Flat module 133x267(WH)
Relative Humidity	10% to 95% (non cond.)
Ambient Temp	0°C to +49°C
Weight	81g
Part Numbers	
4100-0154K	4100 Panel Mount Module
VHX-0400	VESDA Mounted Module (Current - 70mA)

* MAPNET II addressable loop voltage

4100-0451K Panel Mount Printer

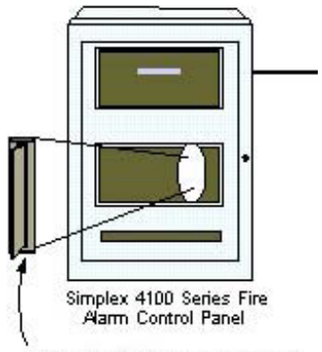


The 4100-0451K panel mount printer provides a convenient and compact location for creating hard copy records of system activity. Alarm, trouble, and supervisory conditions, as well as other site-specific system messages can be printed, depending on the individual system requirements. Printer operation is fast and quiet, allowing system events to be recorded with minimal operator distraction. Recorded events stored on the internal paper take-up are readily accessible by unwinding the paper from its take-up reel and then rewound using the line feed switch. Paper removal and replacement is easily accessed by opening the two latches at the top of the printer cover and pivoting the assembly forward on its bottom mounted hinges.

Specifications	
Model	4100/4120-0451
Operating Voltage	24 Vdc (Loop)
Current	
Standby	70 mA
Printing	800 mA
Communications	Internal RS-232
Mounting	
Width Requirement	152 mm (3 Module Widths)
Depth	102 mm
Paper (1 roll included):	
Type	Thermal
Width	60 mm
Length	49 m
Replacement Paper	4190-9803 (1 Roll)
Print Characteristics	
Characters	11 x 28 dot matrix
Image Colour	Black
Density	6 Lines per Inch
Paper Speed	1.3 in/sec
Print Speed	312 cps
Running Noise	55 dB Maximum
Print Direction	Bi-Directional
Print Width	40 Column
Exposed Print	20 Lines
Operating Temperature	0°C to 49°C
Relative Humidity	10 to 85% (non cond.)

Simplex Addressable MAPNET II Modules

4100-0110 Addressable Modules



Panel mounted 4100-0110 module

Model 4100-0110 addressable modules communicate with remote addressable devices to provide initiation, notification, and control. Operating over a two wire MAPNET II circuit, individual initiating devices such as smoke and heat sensors, manual fire alarm stations, and sprinkler flow switch contacts can communicate their identity and status.
Individual addressability allows the location and the condition of each device to be displayed on the 4100 control panel and on system annunciators. Additionally, notification appliance circuits (horns, bells, strobes, etc.) as well as other control circuits (fans, dampers, etc.) may also be individually controlled.

Up to a combined total of 127 addressable monitor and control devices may be intermixed on the same common pair of wires. Multiple 4100-0110 modules may be installed to accommodate a system capacity of up to 1000 addressable devices (control panel dependent).

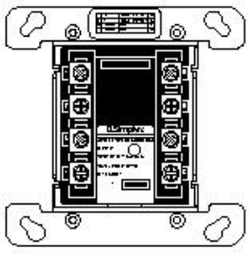
MAPNET II operation continuously interrogates each addressable device on its communication channel for status changes. Two-way data communication are supported over a multi-drop, "T-tapped" pair of wires for any combination of up to 127 monitor and control points. The digital poll/response techniques used ensure high supervision integrity and will report alarm and trouble conditions to the control panel.

4100-0111 Fault Isolator 2190-9169

The 4100-0111 MAPNET II fault isolator module allows an addressable interface module to be wired with up to four isolated circuits of Class B or Class A operation. This provides isolation of a circuit with a shorted line without interfering with the MAPNET II communication to devices on the other circuits. Operation involves continuously monitoring the shorted lines and automatically restoring normal communications when the shorted line condition has been corrected. The module also contains a trouble LED per circuit for ease in locating the faulty circuit. Each fault isolator module requires four consecutive MAPNET II device addresses to be dedicated for its operation to advise the control panel of the circuit fault location. Line powered isolator modules provide bi-directional short circuit protection for MAPNET II communication lines. When properly located, remotely mounted isolators can optimise communication integrity by creating device groups. Any group with short circuited wiring can be isolated, allowing communications to continue to the other groups. These remote isolators are typically wired such that a Class A loop is available to feed Class B wiring runs, or connected as an entire Class A circuit.

2190-9169 for surface mount (plate is 109mm sq.)

2190-9173 2 Point I/O Module

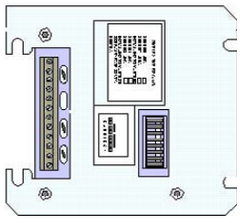


The 2190-9173, 2-Point I/O module allows a Simplex MAPNET II communication channel to monitor an input contact closure and control an output relay from a single compact module. Module power is supplied from the MAPNET II communications channel, eliminating the need for separate power wiring. The monitor and control points can be applied for a variety of associated or independent operations. Flexible programming abilities at the host panel can provide the association logic required for a wide variety of fire or utility operations

Specifications	
Operating Voltage	24 to 40Vdc*
Address Assignment	2 addresses req'd
Dimensions (HWD)	105x105x35mm
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	0 to +49°C
Part Number	2190-9173

*MAPNET II

2190-9156 Zone Adaptor Module - Monitor

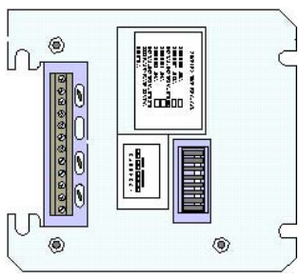


Monitor ZAMs are used when the fire detecting devices or supervisory switches are mounted separately from the addressable electronics. It provides status monitoring and supervision to the device circuit zone and is used for circuits with non-addressable detectors and for other contact closures eg., waterflow and tamper switches or non-addressable manual stations.

Specifications	
Operating Voltage	24 to 40Vdc*
Address Assignment	1 addresses req'd
Supervisory Current	20mA @ 24Vdc
Alarm Current	90mA @ 24Vdc
Dimensions (HWD)	105x105x35mm
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	0 to +49°C
Part Number	2190-9156

*MAPNET II

2190-9162/2190-9164 Zone Adaptor Module - Signal and Control



Signal ZAMs are used to supervise and operate 24 Vdc notification appliances, speakers, and telephone circuits. Output capacity is up to 2 A @ 24 Vdc, or 50 W of 25 VRMS speakers, or up to 3 simultaneously activated firefighter phones. The signal ZAM is available for either Style Y/Class B or Style Z/Class A operation for notification appliance circuits.

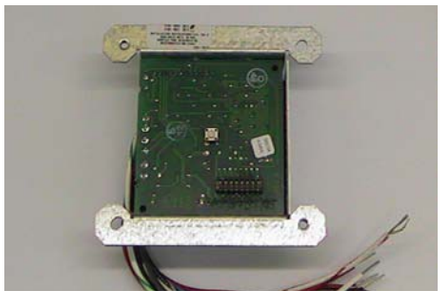
Part Numbers	
2190-9162	Signal & Control ZAM Style Y Flush
2190-9164	Control Relay ZAM DPDT Flush

Specifications	
Operating Voltage	24 to 40Vdc*
Supervisory Current (24Vdc)	15mA (9159-9162)
	10mA (9163/9164)
Alarm Current (24Vdc)	65mA (9159/9160)
	40mA (9161-9164)
Dimensions (HWD)	105x105x35mm
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	0 to +49°C

*MAPNET II

Simplex Addressable MAPNET II/IDNet Modules

4190-9050 Analogue Monitor Zone Adaptor Module



Simplex AMZs provide an accurate, multi-featured 4-20mA interface for connecting analog sensors to Simplex addressable fire detection panels. The panel monitors the sensor and annunciates whenever a selected threshold level or fault condition is observed. Typical applications include: gas, air, liquid temperature, humidity, and air velocity sensing. The maximum distance from AMZ to a sensor is 1km. Each AMZ requires an address and up to 100 AMZs can be connected per panel.

Specifications	
Operating Voltage	18 to 32Vdc*
Sensor Output	Switched input voltage
Sensor Current	400mA (max.)
Basic AMZ Current	30mA
Sensor Loop Current	20mA (max.)
Fault Current	5mA
2098-9808 LED Annun.	3mA
Relative Humidity	10% to 90% (n/cond)
Ambient Temperature	0 to +38°C
Part Number	4190-9050

*MAPNET II

4090-9001 Individual Addressable Module

The 4090-9001 IAM has both power and communications supplied by a two-wire IDNet circuit. It provides location specific addressability to a single initiating device (such as single station smoke detector alarm contacts or heat detector contacts) or multiple devices at the same location by monitoring normally open dry contacts and the wiring to an end-of-line resistor. Closure of the monitored contacts initiates an alarm or other response as programmed at the 4100 FIP. An open in the monitored circuit wiring will cause a fault to be reported. Selections can be made at the control panel to maintain the alarm condition if the initiating device contacts are momentary, such as from a rate-of rise heat detector, or to track the device contact status

Specifications	
Operating Voltage	24 to 40Vdc*
Dist. IAM to Contacts	152m w/o protect. 122m with 2091-9044 over voltage protectors
IDNet Wiring	762m from FIP; 3048m total
Supervisory Resistor	6k8 Ohm 0.5W
Current Limit. Resistor	1k8 & 4k7Ohm 0.5W
Dimensions (HWD)	40x44x32mm
Relative Humidity	10% to 93% (n/cond)
Ambient Temperature	0 to +49°C
Part Number	4090-9001

*IDNet, 1 address per unit

2975-9257 MAPNET II ZAM Mounting Box

Boxes for mounting Zone Adaptor Modules (ZAMs) are available in 2 sizes. Both boxes are of welded steel construction, galvanised for corrosion protection. The ZAM boxes both feature round and eccentric knock-outs for cable entry on each surface.

Specifications	
Dimensions (mm)	120 sq. x 54 deep
Volume	688cc
Material	Welded Steel
Part Numbers	
2975-9257	Box
2975-9258	Cover

Simplex Addressable IDNet Modules

4090-9002 Relay IAM (Individual Addressable Module)

The 4090-9002 Relay IAM allows the c.i.e. to control a remotely located Form "C" Relay contact using IDNet addressable communications for both data and module power. Typical applications are for switching local power for control functions such as magnetic door holders, or control of HVAC components, pressurisation fans, dampers, etc. Relay contact status is also communicated to the c.i.e. The address is set by DIP switch under the resealable label.

Specifications	
Comms Power[1]	24 to 40Vdc w/data
Relay Contact Ratings SPDT	
	0.5A @120VAC[2]
	2A@24Vdc[3]
	1A@24Vdc[4]
Current Limited Op	1k8/4k7 0.5W
Dimensions (HWD)	105x105x35mm
Ambient Temperature	0 to +49°C
Relative Humidity	10% to 93% (n/c)
Part Number	4090-9002

1. IDNet communications with data
2. Transient suppressed load
3. Inductive load
Note: Loop powered 2 wire device

4090-9101 Zone Adaptor Module (ZAM) - Monitor

The 4090-9101 Zone Adaptor Module Monitor ZAM allows a 2-wire circuit of collective smoke or heat detectors to be interfaced on to the IDNet loop.

Up to 20 collective heat and smoke detectors can be monitored by a 4090-9101 Monitor ZAM. The address is set by DIP switch under the re-sealable label.

Note the 4090-9101 requires a separate 24Vdc power supply to power the collective circuit.

Specifications

Comms Power[1]	24 to 40Vdc w/data
Operating Voltage	18.9 to 32Vdc
ZAM Current @ 24VDC[2]	
Quiescent	16mA max.
Alarm	72mA max.
Supervision Resistor	3k3 Ohm 1W
Dimensions (HWD)	105x105x35mm
Ambient Temperature	0 to +49°C
Relative Humidity	10% to 93% (n/c)
Part Number	4090-9101

1. IDNet Communications with data
2. Actual current value is determined by total device requirements

4090-9116 Analogue Addressable Line Isolator

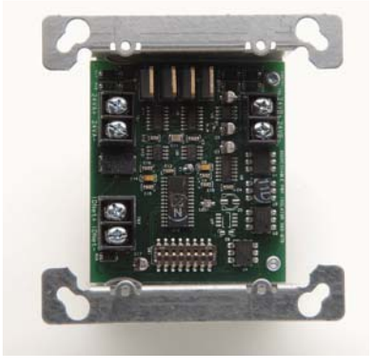
The 4090-9116 Isolator provides IDNet communications isolation, improving installation convenience and system integrity. Isolation is automatically activated when an output short circuit is detected and the condition is reported to the c.i.e. Circuit isolation can also be selected manually from the 4100U c.i.e. to enable partial loop testing. If the output wiring is acceptable, the isolator will connect the rest of the circuit. If the output wiring is shorted, the isolator remains isolated. The address is set by DIP switch under the re-sealable label.

Specifications

Comms Power[1]	24 to 40Vdc w/data
Dimensions (HWD)	105x105x35mm
Ambient Temperature	0 to +49°C
Relative Humidity	10% to 90% (n/c)
Part Number	4090-9116

1. IDNet communications with data

4090-9117 Analogue Addressable Power Isolator



The 4090-9117 Power Isolator provides monitoring and short circuit protection for 24Vdc power wiring to IDNet addressable devices. In the event of a short circuit, it opens a two-pole electronic switch, isolating both power circuit conductors. This function can also be selected from the c.i.e. The isolator reports to the c.i.e. when it is in isolation mode. It also reports the extent of shorted wiring by identifying the addresses of non-communicating devices

Specifications

Comms Power[1]	24 to 40Vdc w/data
Current Rating	2A@32Vdc max.
Input Current	10mA@24Vdc
Dimensions (HWD)	105x105x35mm
Ambient Temperature	0 to +49°C
Relative Humidity	10% to 90% (n/c)
Part Number	4090-9117

1. IDNet communications with data

4090-9118 Relay IAM (Individual Addressable Module) with T-Sense Input

The 4090-9118 Relay IAM with T-Sense allows a 4100U IDNet communication channel to monitor two input contact closures with one point and control an output relay with the other point, yet occupy a single loop address. Power is supplied from the IDNet communications channel, eliminating the need for separate power wiring. The input circuit and relay operation are controlled independently and may be disabled separately. Applications include water flow and tamper switch monitoring and control and damper position monitoring and control

Specifications

Comms Power[1]	24 to 40Vdc w/data
Relay Contact Ratings SPDT	
	0.5A @120VAC[2]
	0.25A@120VAC[3]
	2A@30Vdc [2]
	1A@30Vdc[3]
Input	N/O, dry contacts
Current Limited Operation	1k8/4k7 0.5W
Dimensions (HWD)	105x105x35mm
Ambient Temperature	0 to +49°C
Relative Humidity	10% to 90% (n/c)
Part Number	4090-9118

1. IDNet communications with data
2. Resistive Load
3. Inductive Load

Note: Loop powered 2 wire device

4090-9119 Relay IAM (Individual Addressable Module) with Unsupervised Input

The 4090-9119 allows a 4100U IDNet communication channel to monitor an unsupervised input contact with one point and control an output relay with the other point, yet occupy a single address. The input circuit and relay operation are controlled independently and may be disabled separately. Module power is supplied from the IDNet communications channel eliminating the need for separate power wiring. The address is set by DIP switch under the re-sealable label.

Specifications	
Comms Power[1]	24 to 40Vdc w/data
Relay Contact Ratings SPDT	
Non power limited	0.5A @120VAC[2] 0.25A@120VAC[3]
Power limited	2A@30Vdc [2] 1A@30Vdc[3]
Input	N/O, dry contacts
Dimensions (HWD)	105x105x35mm
Ambient Temperature	0 to +49°C
Relative Humidity	10% to 95% (n/c)
Part Number	4090-9119

1. IDNet communications with data
2. Resistive Load
3. Inductive Load
Note: Loop powered 2 wire device

4090-9120 Six Point I/O Module with T-Sense Inputs and Relay Outputs Module

The 4090-9120 allows 4100U IDNet communication channel to monitor four T-sense input circuits and control two output relays from a single module requiring a single address. Power is supplied by a separate 24Vdc connection to a listed fire alarm power supply. The input circuits and output relay operation are controlled independently and may be disabled separately. Point association is determined at the 4100U host panel. At the 4100U, the device address is designated as a single hardware location. Each of the four input circuits monitors for continuity to an end-of-line resistor and can differentiate between a short circuit contact closure and a current limited contact closure. Two input supervision resistors are required per T-sense input.

Specifications	
Comms Power[1]	24 to 40Vdc w/data
Operating Voltage	18 to 32Vdc
Operating Current	30mA@24Vdc
Relay Contact Ratings SPDT	
Non-power limited	0.5A @120VAC[2] 0.25A@120VAC[3]
Power limited	2A@30Vdc[2] 1A@30Vdc[3]
Supervision Resistor	6k8 Ohm 0.5W
Current Limited Operation	1k8/4k7 0.5W
Input	N/O, dry contacts
Dimensions (HWD)	105x105x35mm
Ambient Temperature	0 to +49°C
Relative Humidity	10% to 90% (n/c)
Part Number	4090-9120

1. IDNet communications with data
2. Resistive Load 3. Inductive Load
Note: 4 wire device; requires separate 24Vdc and IDNet communication loop

2975-9006 IDNet ZAM Mounting Box

Boxes for mounting Zone Adaptor Modules (ZAMs) are available in 2 sizes. Both boxes are of welded steel construction, galvanised for corrosion protection. The ZAM boxes both feature round and eccentric knock-outs for cable entry on each surface.

Specifications	
Dimensions (mm)	101 sq. x 54 deep
Volume	490cc
Material	Welded Steel
Part Numbers	
2975-9006	Box
2975-9260	Cover

4099-9032 Manual Call Point

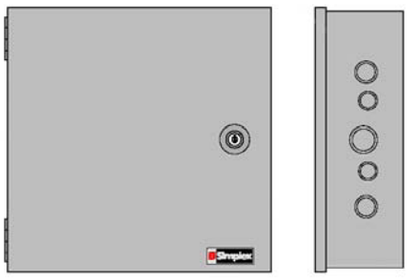
Specifications	
Comms Power[1]	24 to 40Vdc w/data
Dimensions (HWD)	86x87x35mm
Ambient Temperature	-9°C to +70°C
Relative Humidity	10% to 95% (n/c)
CSIRO ActivFire listed	afp-1691
Part Numbers	
4099-9032	IDNet & red LED
4099-9032N	MAPNET II, no LED
515.001.025	Spare Glass (pk 5)
SR3T-P	Backbox c/w Terminals

1. MAPNET II or IDNet communications with data

The 4099-9032 addressable Manual Call Point (MCP) provides a means to manually initiate a fire alarm condition to the 4100U c.i.e. via the IDNet channel. The IDNet channel provides the communication link and power between the call point and 4100U. Activation of the MCP requires the frangible element to be broken, which causes contacts on a microswitch to close, initiating an alarm condition. Call Point reset requires the fitting of a replacement frangible element. The MCP features an integral red LED status indicator. The Simplex 4099-9032NL MCP is connected to Simplex c.i.e. via MAPNET II and does not have a status indicator

Simplex Ancillaries

4190-9008, BACpac™ Portal



The 4190-9008 BACpac portal provides a supplementary communications interface that converts computer terminal information from a compatible Simplex FIP into the building automation protocol of BACnet. With this portal, status information from the FIP can be provided to other components of the building automation network with the detail and information format required. This allows the other systems to properly respond to fire alarm system activity in addition to the primary fire alarm response that is under the control of the c.i.e.

Specifications

Input Power	100mA@240VAC 50Hz
Data Input from FIP	RS232 ASCII
Data Output	RS232 BACnet
Operating Temperature	0°C to +45°C
Reletive Humdity	10% to 95% (non/cond)
Cabinet (HOFFMAN)	A-HE12x12x4
Dimensions (HWD)	314x313x105 mm

2081-9027 Isolated Loop Circuit Protector

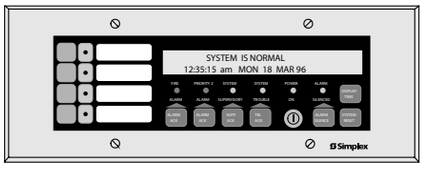
Electrical transients caused by lighting or by disturbances on high voltage power lines are conditions that require low voltage wiring circuits to be adequately protected. This protection is most effective when placed at the location where such circuits leave or enter the building. The simplex 2081-9027 Isolated Loop Circuit Protector (ILCP) is designed to protect Simplex Fire Alarm circuits from those transients induced on wire runs that are routed to the building externally. Because of its small package size, it can be easily mounted at the location that achieves maximum protection.

Specifications

Line to Line	38Vdc, 28VAC RMS
Line to Ground	38Vdc, 35VAC RMS
Shield to Ground	48Vdc, 33VAC RMS
Current Each Leg	200mA max.
Resistance	3 Ohm per line*
Response Time	$1x10^{-9}$s (line-line) $25x10^{-9}$s (line-gnd)
Max. Current (line-line)	2000A (10x50µs pulse)
Max. Current (line-gnd)	2000A (8x20µs pulse)
Max. Current (shield-gnd)	5000A (10x50µs pulse)
Dimensions (LWD)	625x35x27mm

* Signal Input to Signal Output

4603-9101 Serial LCD Annunciator

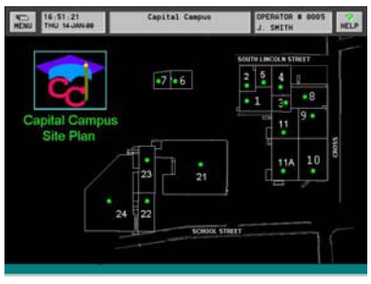


The Simplex 4603-9101 LCD annunciator provides remote annunciation and control using an 80 character, back-lit, alphanumeric, LCD readout. Information is presented in clear, descriptive English language and includes: point status (alarm, trouble, etc.), alarm type (smoke detector, manual station, etc.), number of system alarms, supervisory conditions, and troubles, and a custom location label. Communications require a single twisted, shielded pair that supports other styles of Simplex serial annunciators on the same wire pair. Alarm, Supervisory, and Trouble conditions are also indicated by dedicated LEDs and a tone-alert. Each condition has a dedicated acknowledge push-button switch that silences the tone-alert but leaves the LED on until all conditions in that category are restored to normal. Switch operation is either globally or individually acknowledgeable, determined by the control panel operation. Repeated operation of the appropriate acknowledge switch will scroll the LCD display showing activity in the sequence of occurrence. The tone-alert also sounds to indicate the operation of any of the push-button switches

Specifications

Operating Voltage	24Vdc, Loop Supplied
Operating Current	170 mA
Operating Temp	0 to 49°C
Relative Humidity	10% to 90% (non-cond)
Standard Trim	Steel, Painted Beige
Optional Trim	Brushed Aluminium 4603-9111
Trim Dimensions(HW)	114 x 300 mm

Simplex Information Management System (IMS)



4190 IMS Graphics Systems provide annunciation, status display, and control for Simplex 4120 Networks using a Windows® 2000 based graphical interface with a high resolution, colour display. Response buttons with realistic icons provide control switches specific to the operation being performed. Point capacity is capable of up to 50,000 network points or point groups (lists). Up to four 4120 Network loops can be interfaced, allowing for significant future expansion. Multiple IMS units can be installed on the same network for redundancy or to accommodate vectored point type annunciation where points are routed to the appropriate IMS depending on type, location, or other criteria. A separate IMS can also be dedicated as a maintenance/engineer's terminal for performing higher level network investigations and modifications.

Part Numbers

4190-8601	IMS Software package
4190-6030	IMS Network RS-485 Module
4190-6031	IMS Network Modular Card
4190-0142	Wired media card RS-485
4190-0143	Fibre Optic media card

TrueAlarm® Addressable Detectors

4098-9754EA Photoelectric & Heat Multi-Sensor

TrueAlarm multi-sensor 4098-9754EA combines the TrueAlarm photoelectric smoke sensor with a fast-acting and accurate TrueAlarm thermal sensor to provide both features in a single sensor/base assembly. Analog information from each sensor is digitally communicated to the control panel where it is analysed.

Photoelectric sensor input is stored and tracked as an average value with an alarm or abnormal condition being determined by comparing the sensor's present value against its average value. Thermal data is processed to look for absolute or rate-of-rise temperature as desired.

Monitoring each photoelectric sensor's average value provides a software filtering process that compensates for environmental factors (dust, dirt, etc.) and component aging. The result is a significant reduction in false or nuisance alarms caused by shifts in sensitivity.

Specifications

4098-9754E	
Operating Voltage (MAPNET II)	24 to 40Vdc
Operating Current (MAPNET II)	500µA (max)
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	0 to +50°C
Sensitivity (at c.i.e.) with 4098-9795E	4 and 5%Obs/m
Alarm Current (sounder on)	17mA @ 24Vdc
Sounder Power (external)	18 to 32Vdc
Sound Pressure Level	88dBA @ 3m
CSIRO ActivFire Listed	afp-1361
Part Numbers:	
4098-9754EA	Detector
4098-9796E	Base
4098-9795E	Sounder Base
4098-0027	Guard

*MAPNET II or IDNet auto select w/data

4098-9714EA TrueAlarm Photoelectric Smoke

The 4098-9714EA Photoelectric smoke detector contains a state-of-the-art sensing chamber and analogue communication electronics. Used in conjunction with the Simplex 4100 panel, the 9714E has a high degree of false alarm immunity thanks to advanced algorithms.

The detector mounts on the 4098-9789 addressable base or 4098-9794 sounder base. An optional remote LED can also be fitted.

Specifications

Operating Voltage	24 to 40Vdc*
Quiescent Current (max)	100µA
Alarm Current-relay active	24mA
External Output Drive (max)	5mA
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-9°C to +50°C
Air Velocity	0 to 610m/min
Sensitivity	4 to 6% Obs/m
CSIRO ActivFire Listed	afp-1225
Part Number	4098-9714EA

*MAPNET II or IDNet auto select w/data

4098-9717EA TrueAlarm Ionisation Smoke

The 4098-9717EA Ionisation detectors use a single radioactive source with an outer sampling chamber and an inner reference chamber to provide stable operation under changes in environmental conditions eg., temperature and humidity. Smoke and invisible combustion gases can freely penetrate the outer chamber. The air in both chambers is ionised by a small radioactive source causing a very small current to flow in the circuit. The presence of combustion particles causes a change in the voltage ratio between chambers, which is measured by the electronics in the base and digitally transmitted to the CIE for processing.

Specifications

Operating Voltage	24 to 40Vdc*
Quiescent Current (max)	400µA
Alarm Current-relay active	24mA @ 24V
External Output Drive (max)	5mA
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	0 to +50°C
Air Velocity	0 to 61m/min
Sensitivity	0.4 MIC X nom.
Source	Americium241
CSIRO ActivFire Listed	afp-1246
Part Number	4098-9717EA

*MAPNET II or IDNet auto select w/data

Simplex VLC-600 TrueAlarm LaserCOMPACT™

The VLC-600 TrueAlarm LaserCOMPACT detector has been specifically designed to provide all the benefits of aspirating smoke detection, including very early warning, in single small areas and where space is a premium. The VLC-600 communicates directly with the Simplex Fire Products 4100/4020/4100U c.i.e., detecting smoke by using proven VESDA aspirating technology, dual stage filtration technology in combination with the versatility of the TrueAlarm addressable protocol. The VLC-600 utilises a standard VESDA pipe design in accordance with the Aspire design tool. Refer to the VESDA section for information about accessories.

Specifications

Operating Voltage	18 to 30Vdc
Operating Current	225mA
Alarm Current	245mA
Operating Temperature	
Sensor Ambient	-10°C to 39°C
Sampled Air	-20°C to 60°C
Relative Humidity	10% to 95% (n/cond)
Alarm Sensitivity	0.05 to 12%obs/m
Coverage Area	500 m^2
Dimensions (HWD)	225x225x85mm
Weight	1.9 kg
Remote Indicator	2098-9808
CSIRO ActivFire Listed	afp-1572
Part Number	VLC-600

4098-9733EA TrueAlarm Heat Detector

TrueAlarm heat detectors are self-restoring and provide rate compensated, fixed temperature sensing, selectable with or without rate-of-rise temperature sensing. Due to its small thermal mass, the detector accurately and quickly measures the local temperature for analysis at the c.i.e. Rate-of-rise temperature detection is selectable for either 8.3°C or 11.1°C per minute. Fixed temperature sensing is independent of rate-of-rise sensing and programmable to operate at 57.2°C or 68°C. In a slow developing fire, the temperature may not increase rapidly enough to operate the rate-of-rise feature, however an alarm will be initiated when the temperature reaches its rated fixed temp. setting.

Specifications	
Operating Voltage	24 to 40Vdc*
Quiescent Current (max)	400µA
Alarm Current (max)	10mA
External Output Drive (max)	5mA
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	0 to +50°C
CSIRO ActivFire Listed	afp-1202
Part Number	4098-9733EA

*MAPNET II or IDNet auto select

4098-9789EA TrueAlarm Analogue Addressable Detector Base

TrueAlarm detector bases contain integral addressable electronics that constantly monitor the status of the detachable photoelectric, ionisation, or heat detectors. Each detector's output is digitised and transmitted to the system CIE every four seconds. Since TrueAlarm detectors use the same base, different detector types can be easily interchanged to meet specific location requirements, for example, during building construction, or when conditions are temporarily dusty. Instead of covering the smoke detectors(causing them to be disabled), heat detectors may be installed without reprogramming the CIE. Although the CIE will indicate an incorrect detector type, the heat detector will operate at a default sensitivity maintaining building protection at that location. The 4098-9789EAP can be used in areas that may experience an increased moisture level, eg under eaves.

Specifications	
Operating Voltage	24 to 40Vdc*
Quiescent Current (max)	400µA
Alarm Current (max)	3.2mA
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	0 to +55°C
CSIRO ActivFire Listed	afp-1225 & 1246
Part Numbers	
4098-9789EA	TrueAlarm Base
4098-9789EAP	Moisture Protected TrueAlarm Base

*MAPNET II or IDNet auto select

4098-9794EA TrueAlarm Analogue Addressable Sounder Base

The TrueAlarm sounder base has a built-in Piezoelectric sounder that provides a high 90dBA output with low 17mA current requirements. Used with the interchangeable TrueAlarm detectors (photoelectric, heat, or ionisation) the sounder can be powered from 24 Vdc or from a compatible Notification Appliance Circuit (NAC) and synchronised coded/temporal coded by communications* or by the NAC. The sounder can be manually activated from the CIE. Analogue detector information is digitally communicated to the control panel via MAPNET II™ or IDNet™, two-wire communications**. Detector information is processed by the CIE to determine detector status. The sounder base has a built-in magnetic test feature and is for use with Simplex CIEs model 4010/4020/4100/4120, and Universal Transponders. Optional accessories include remote alarm LED indicator on single gang plate and an alarm LED tracking relay.

Specifications	
Sounder Operating Voltage	24 to 40Vdc*
Relay Voltage	18 to 32Vdc
Quiescent Current (max)	270µA
Alarm Current (max)	17mA
Sound Pressure Level	90dBA @ 3m
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	0 to +55°C
CSIRO ActivFire Listed	afp-1246
Part Number	4098-9794EA

*MAPNET II or IDNet auto select

4098-9793EA TrueAlarm IDNet Isolator Base

The 4098-9793 isolator base accepts Simplex TrueAlarm analog sensors and provides communications isolation to improve installation convenience and increase system integrity. An internal isolation relay allows a compatible c.i.e. to separate shorted communications wiring from functioning wiring to optimise the available sensors or other IDNet addressable devices. The isolator base's status is communicated to the FIP, allowing it to assist in identifying the location of the shorted wiring. During installation, earth faults frequently occur. Finding these faults normally requires extensive wiring disconnection. With the 4098-9793 isolator base, earth faults on the IDNet communications lines can be quickly located to assist in their repair and to restore the system wiring to normal.

Specifications

Operating Voltage	24 to 40Vdc*
Input Voltage	18.9 to 32Vdc
Current (max.@ 24Vdc)	16mA (supervisory)
	72mA (alarm)
Supervisory Resistor (9101)	3k3 Ohm 1W
Dimensions (HWD)	105x105x35mm
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-9°C to +50°C
Part Number	4098-9793EA

*IDNet, 1 address per base

4098-9755EA Duct Sampling Unit

The TrueAlarm duct sampling unit detects the presence of smoke in air conditioning or ventilating ducts. Sampling tubes are installed into the duct and air is directed to a 4098-9714EA smoke sensor mounted in the housing.

These duct housings provide the high reliability performance of TrueAlarm analog sensing featuring programmable sensitivity, consistent accuracy, environmental compensation, status testing, and monitoring of sensor dirt accumulation.
The TrueAlarm Duct Sampling Unit require only two wires for both communications and power.

Specifications

Operating Voltage	18 to 40Vdc*
LED Current	600µA**
Air Velocity	1.5 to 20 m/s
Relative Humidity	10% to 95% (non-cond.)
Operating Temperature	0 to +50°C
4098-9753 with auxiliary relay	
Relay Coil Voltage	18 to 32Vdc
Quiescent Current	240µA @ 24Vdc
Alarm Current	32mA @ 24Vdc
Contact Rating	1A @ 28Vdc (pwr limit)
Contact Rating	0.5A @ 120VAC (resist)
CSIRO ActivFire Listed	afp-1354
Part Number	4098-9755EA

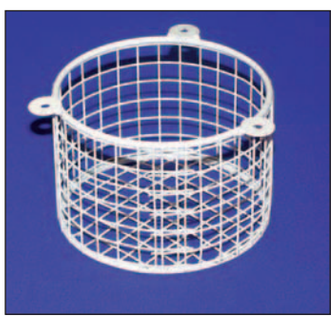
* MAPNET II
** No impact on alarm current

Detector Accessories & Remote Indicators

Accessories

PA0838 ZAU401 Zone Adaptor Unit
The ZAU401 (Rev 2) can be thought of as a single zone circuit module that can be added to different panels to make them compatible with specific detectors. For example, it can be used with the S231i+ flame detector. (Refer PBG0080). In addition, the AZC characteristics of the ZAU401 make it particularly suitable for Intrinsically Safe applications when used with I.S. barriers (refer PBG0081). The ZAU401 (Rev 2) can support up to 2mA of quiescent detector current and uses a 3k9 5% ELD resistor. The detectors must provide current limiting in alarm, or a series resistor must be included to limit the alarm current to below 100mA or lower if the detector has a lower maximum alarm current rating. Its output voltage in alarm (to the panel) is compatible with most panels, and the ELD used (panel side) is that from the original panel. It operates directly off the 24V panel supply, and draws approximately 20mA in the normal condition. The ZAU401 monitors the voltage provided by the panel to its Zone+ input, and when this disappears during a reset operation the ZAU401 turns off the supply to its detectors – thus resetting them as well.

Wire Guard



W500 Series detector cages are available in a range of sizes to cater for most of the detectors that are available through Tyco Safety Products. These white powder coated steel protective cages are suitable for applications where unprotected devices would be vulnerable to accidental damage.

Part Numbers

W500	120mm dia x 80mm deep
W502	195mm dia x 120mm deep
W504	130mm dia x 105mm deep
W508	82mm dia x 110 deep (to suit T54B)

Round Remote Indicators

The E500 Mk2 range of remote indicators provide remote indication of an alarm condition on a fire detector. They are used where the fire detector is installed in an inaccessible location, and indication of alarm must be provided in an easily accessible area. For example, where the detectors are in roof spaces or cupboards, under the floor, or in hotel rooms, and indication is required in the room or corridor.

Specifications

Operating Voltage	4.5 to 30Vdc
Alarm Current (min.)	1.6mA
Alarm Current (max.)	25mA@45°C
	15mA@75°C
Luminous Intensity	as per AS2362.25
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-5°C to +75°C

Part Numbers

E502	Fire Alarm
E521	Fire Alarm in Concealed Space
E523	Fire Alarm in Room
E524	Fire Alarm Above
E525	Fire Alarm in Duct
E526	Fire Alarm in Roof
E529	Fire Alarm in Cupboard

The 2098-1xxx range of remote indicators provide remote indication of an alarm condition on a fire detector. They are used where the fire detector is installed in an inaccessible location, and indication of alarm must be provided in an easily accessible area. For example, where the detectors are in roof spaces or cupboards, under the floor, or in hotel rooms, and indication is required in the room or corridor.

Specifications

Operating Voltage	4.5 to 30Vdc
Alarm Current (min.)	1.6mA
Alarm Current (max.)	25mA@45°C
	15mA@75°C
Luminous Intensity	as per AS2362.25
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-5°C to +75°C

Part Numbers

2098-1110	Fire Alarm in Roof Space
2098-1111	Fire Alarm in Concealed Space
2098-1112	Fire Alarm in Cupboard
2098-1113	Fire Alarm Room
2098-1114	Fire Alarm in Return Air
2098-1115	Fire Alarm in Duct
2098-1116	Blank

Rectangular Remote Indicators

The E500 Mk2 range of remote indicators provide remote indication of an alarm condition on a fire detector. They are used where the fire detector is installed in an inaccessible location, and indication of alarm must be provided in an easily accessible area. For example, where the detectors are in roof spaces or cupboards, under the floor, or in hotel rooms, and indication is required in the room or corridor.

Specifications

Operating Voltage	4.5 to 30Vdc
Alarm Current (min.)	1.6mA
Alarm Current (max.)	25mA@45°C
	15mA@75°C
Luminous Intensity	as per AS2362.25
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-5°C to +75°C

Part Numbers

E542	Fire Alarm
E551	Fire Alarm in Concealed Space
E553	Fire Alarm in Room
E554	Fire Alarm Above
E555	Fire Alarm in Duct
E556	Fire Alarm in Roof

Latching Remote Indicators

The E500 Mk2 range of latching remote indicators provide latching remote indication of an alarm condition on a fire detector. They are used typically where a T54B probe type fire detector is installed (which may be in an inaccessible location), and indication of alarm must be provided in an easily accessible area. For example, where the detectors are in roof spaces or cupboards, exhaust hoods etc and indication is required in the room or corridor.

Specifications

Operating Voltage	4.5 to 30Vdc
Alarm Current (min.)	1.6mA
Alarm Current (max.)	25mA@45°C
	15mA@75°C
Luminous Intensity	as per AS2362.25
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-5°C to +75°C

Part Numbers

E561	Fire Alarm in Concealed Space
E573	Fire Alarm in Room
E574	Fire Alarm Above
E575	Fire Alarm in Duct
E566	Fire Alarm in Roof Space

Fire Panel Ancillaries

AAM2 Alarm Acknowledge Module

The AAM2 Alarm Acknowledge Module provides a facility to locally annunciate a smoke/CO detector alarm, and for the occupant to acknowledge and clear a false fire alarm without the fire brigade being called. The AAM2 has no sounder and is used with a detector mounted in a sounder base. The AAM2 is usually installed in a single occupancy unit (apartment, flat or single-person's quarters) along with 1 or more non-latching smoke/CO fire detectors. When an alarm is detected the sounder in the detector base and the red LED in the AAM2 operate and the occupant has (typically) 30 seconds to acknowledge the alarm. This starts a further time delay (typically 1-3 minutes), during which they must clear the smoke to avoid calling the fire brigade. If either time delay elapses and smoke is still present, then the fire panel goes into alarm and the brigade is called. As standard the AAM2 comes without a face plate, these must be ordered separately. Two different face plates are currently available:
The AAM2 is compatible with the MX4428/F4000 and Simplex 4100 FIPs. Refer to LT0304, AAM2 Installation Instructions.

Specifications	
Operating Voltage	2-28Vdc
Quiescent Current	0µA
LED Current	2-20mA
Operating Temperature	-5°C to +45°C
Operating Humidity	10% to 95% R.H (n/cond)
Weight (typical)	100g
Approvals	CSIRO FTS-136
Time Limit	Panel Programmable

FP0894
The AAM2 can be used with the FA2317 face plate for general alarm indication, annunciation and acknowledgement, eg, a Nurses Station. The FA2317 face plate has text labelling "Press to Acknowledge Fire Alarm". The AAM2 can be wired up to the fire panel so the LED lights on alarm and an external sounder operates as well. Pressing the button silences the buzzer and turns off the LED.

Part Number	
FP0894	Alarm Acknowledge Module AAM2 with FA2317 Faceplate

FP0895
The AAM2 can be used with the FA2318 face plate to make an Alarm Acknowledgement Module, as FA2318 contains the additional text information and space for the investigation time to be filled in on-site. The AAM allows the resident of a Sole Occupancy Unit (SOU) or apartment to acknowledge and clear a false fire alarm without the fire brigade being called.

Part Number	
FP0895	Alarm Acknowledge Module AAM2 with FA2318 Faceplate

ME0420 AAM2 Alarm Acknowledge Module (no sounder) is the basis for the AAM2. It comprises a blank faceplate and backplate with PCB. A faceplate with the required text is added to make up an AAM2 ki. The complete AAM2 unit is ordered as either FP0894 or FP0895.

AAM4 Alarm Acknowledge Module

The FP0842 Alarm Acknowledge Module provides a facility to locally annunciate a smoke/CO detector alarm, and for the occupant to acknowledge and clear a false fire alarm without the fire brigade being called. The AAM4 with an inbuilt sounder is usually installed in a single occupancy unit (apartment, flat or single-person's quarters) along with 1 or more non-latching smoke/CO fire detectors. When an alarm is detected the inbuilt sounder and red LED in the AAM4 operate and the occupant has (typically) 30 seconds to acknowledge the alarm. This starts a further time delay (typically 1-3 minutes), during which they must clear the smoke to avoid calling the fire brigade If either time delay elapses and smoke is still present, then the fire panel goes into alarm and the brigade is called. The AAM4 is compatible with the MX4428/F4000 and Simplex 4100 FIPs. Refer to LT0276, AAM4 Installation Instructions.

Specifications	
Operating Voltage	18-28Vdc
Quiescent Current	0µA
Alarm Current (max)	23mA Sounder On
Alarm Current (max)	15mA Sounder Off
Operating Temperature	-5°C to +45°C
Operating Humidity	10% to 95% R.H (n/cond)
Weight (typical)	100g
Approvals	CSIRO FTS-136
Time Limit	Panel Programmable
Part Number	FP0842

V-Modem

V-Modem is an intelligent RS232 2400 baud modem that can be programmed to operate over either dial-up PSTN (Public Switched Telephone Network) lines or leased lines. It is designed to allow fire alarm equipment that is normally connected using RS232, RS485 or similar to operate over much longer distances, or to be accessed via a dial-up PSTN connection.

A range of special V-Modems are available to provide signalling of up to 7 voltage free signals from one location to another (point to point). These consist of a sender (with inputs) and a receiver (with relay outputs) and operate over different types of communication media. These may be supplied under other part numbers as they may be built up in cabinets with PSUs, etc. The sender SM0247 and its reciever SM0248, sends 6 inputs to 6 relays, PF input to relay, comms fail output at sender and receiver. It uses built-in VF modem and requires a 2-wire full duplex (bi-directional) link using copper wire, leased line or other derived audio circuit. The sender SM0278 and its reciver SM0279, sends 6 inputs to 6 relays plus comms fail output at receiver. It uses RS232 port, requires single direction (Sender to Receiver) link using RS232, RS485, fibre optic cable, or a derived RS232 link that supports 9600 baud, 8 data bits plus even parity.

Specifications	
Operating Voltage	9.5 to 29Vdc
Power Consumption	1.2W
Operating Current	50mA @24V, 100mA @ 12V
Inputs/Outputs	
Connections	RS-232, RJ-45
Monitor Mode	9600, 8, no parity, 1
Modem Mode	19200/9600/4800/2400 /1200 8, no parity, 1
Operating Temp	-5°C to +45°C
Relative Humidity	< 95% (non-cond.)
Dimensions	100 x 174 x 78 mm (HWD)
Part Number	
FP0778	V-Modem
LM0164	Loom RJ45 to DB25M 2.5m
LM0165	Loom DB25F to DB9F 2m
LM0166	Loom RJ45 to DB9F 2.5m
LM0168	Loom DB9M to 4W Molex
LT0243	V-Modem User's Manual

Telepager Interface (TPI)

The Telepager Interface (TPI) receives alarm and fault events from an MX1, F3200, F4000, MX4428, NDU, NLDU or PTM fire panel, or from 16 digital inputs, and selectively generates text messages to alphanumeric pagers or text message capable (SMS) mobile phones to notify users of the events. Programming determines which zone events to send to which users.

Features

- Connects to MX1, F3200, F4000, MX4428, NDU, NLDU or PTM
- 16 Digital Inputs
- Automatically sends text messages on panel or input changes of state
- Unrecognised strings can be sent to specially mapped agents
- Supports alphanumeric pagers and SMS-capable cell phones
- In-built GSM or CDMA data modem, or external modem, or direct connection to paging system
- Uses PET/TAP protocol to paging system
- Dial-in access for programming and diagnostics
- Different zone events can be sent to different users
- 60 users on pagers/cell phones
- Available as packaged unit with mains PSU or radio data modem, or board set
- Valid SIM card & coverage req'd for GSM version
- Billing acct & coverage req'd for CDMA version

Specifications	
PSU Mains Voltage	240Vac (50 Hz) (+6%, -10%)
Power Consumption	(mains) 5W
Nom. Output Voltage	(+V) 13.7V
Nom. +VNB Voltage	14.4V
Quiescent Current	95mA (typ) battery (mains off)
CDMA/GSM ext. PSU	10-28Vdc 480mA
Dimensions (HWD)	295x240x80 mm
Part Numbers	
FP0711	TPI in cabinet c/w PSU
FP0867	TPI in cabinet c/w GSM phone, no PSU
PA0640	PCB only

RS485 Network Interface

The PA0711 is used to interface an F4000 FIP with the RS485 network. The RS485 Communication Board is mounted on the modem connector, located at the top of the F4000 Main Board.

PA0711 RS485 Comms PCB 1901-139-1 Plug-on (Modem connection to F4000 Main Board - external power)

The PA0712 is used to convert between RS485 and RS232 level signals. Because RS485 links can be much longer than RS232, the PA0712 is mainly used to transmit serial data over long cables between devices which have RS232 serial ports (eg between the F4000 printer port and the printer). It can also be used to interface a PC with the RS485 network. PA0712 comes with LM0065, a 500mm long cable with both a IBM PC RS232 DB9 socket and plug fitted.

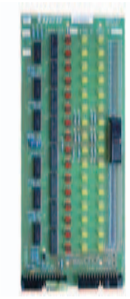
PA0712 RS485 to RS232 PCB 1901-139-2 (RS232 to RS485 - external power)

The PA0773 is used to interface an F3200 FIP, MX4428 FIP, PTM, NLDU, MODBUS BRIDGE, RDU or NDU with the RS485 network. This RS485 Communication Board is mounted on four metal stand-offs, which are used for earthing the PCB. This RS485 board connects to the controller board via a 10 way FRC, which is also used to power the RS485 Board.

PA0773 RS485 Comms CMOS PCB 1901-139-3 FRC Only (FRC connection - including power)

LED Display Extender Kits

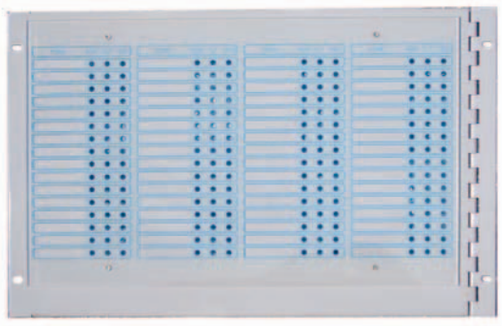
Optional Additional LED Display
Increasing the number of LED zone displays on either an F3200 or MX4428 requires 1 x ME0060 plus 1 x FZ3031 plus 1-3 x FP0475 as required.
The 7U Parallel LED Display mounts directly below the standard 4U LCD. The Zone LEDs are Alarm (Red); Fault (Yellow); Isolated (Yellow) with a Zone name space of 10mm x 60mm per zone on a paper label; eg. 2 lines of 23 characters at 10 per inch.



PA0454 16 Zone Display Board

FP0475 Display Extender Kit includes PA0454, LM0046 0.5m FRC, standoffs, power leads, diffuser, Zone name label master

FZ3031 Display Extender Kit includes FP0475 with LM0092 1.2m FRC in place of LM0046 - use as first (LHS) display board



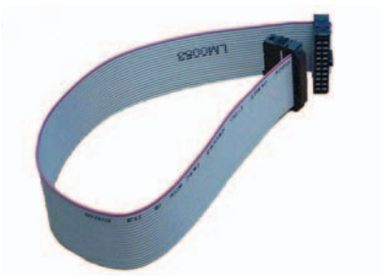
ME0060 7U Inner Display Door 1901-75 includes M6 screws, flat washers & cage nuts. It mounts up to 4 16 LED display boards.

LM0049 Loom FRC 26W Style B 0.25m

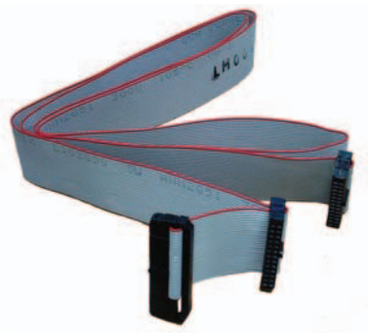
Looms and Cables

Looms and Cables

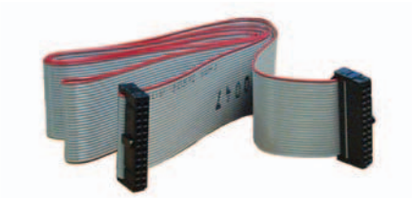
LM0041 MX4428/F4000 Cable Programming Port to DB9 serial 1888-58
LM0042 MX4428/F4000 Cable Programming Port to DB25 serial 1888-62



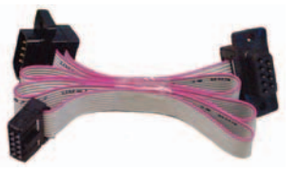
LM0053 Loom FRC 20W Style A 0.3m



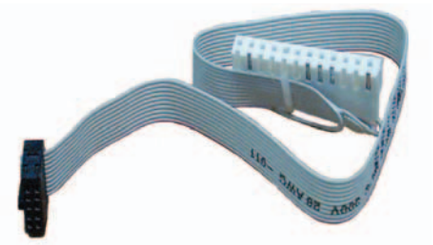
LM0092 Loom FRC 26W F3200 MkII Controller to First Display 1.25m



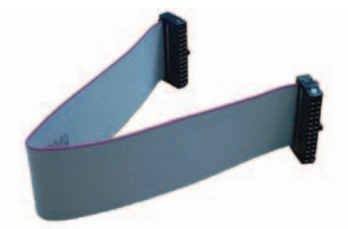
LM0047 Loom FRC 26W Style D 1.3m QE90 TRAN8872



LM0065 RS-485 Comms 10W FRC to DB9



LM0185 MX4428 Molex to CMOS/RS-232 1901-214



LM0049 Loom FRC 26W Style B 0.25m

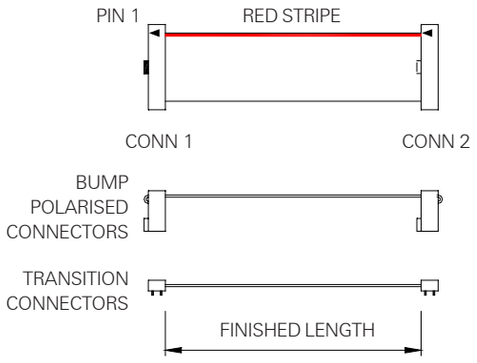
LM0076 ECM Prog DB9F to DB9F

LM0195 4100 MAPNET Power Harness

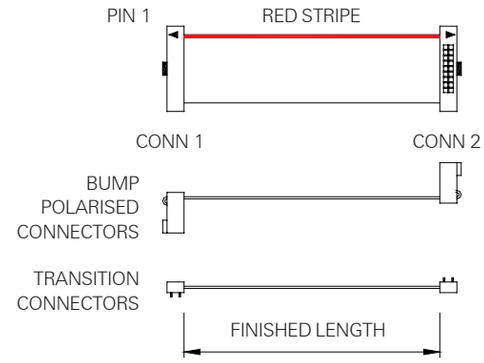
Loom Style Types

Notes
1. The loom style connector types, cable cut length and cable style are specified in the loom routing.
2. The cut length for a flat ribbon cable (FRC) will generally be 'Finished Length' plus 50mm to allow for wastage.
3. Both 'Bump Polarised' sockets and 'Transition' connectors are illustrated. Looms can have combinations of these connectors.

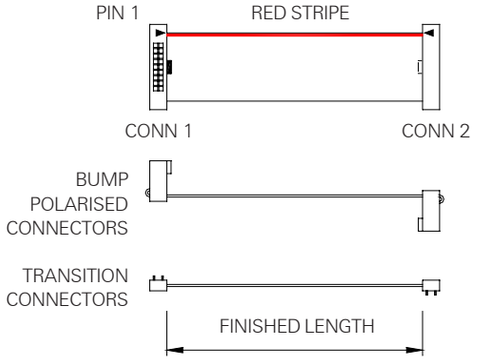
STYLE A



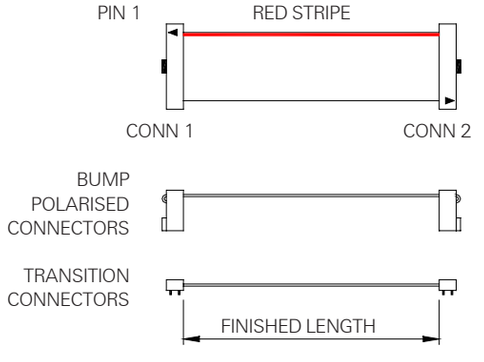
STYLE B



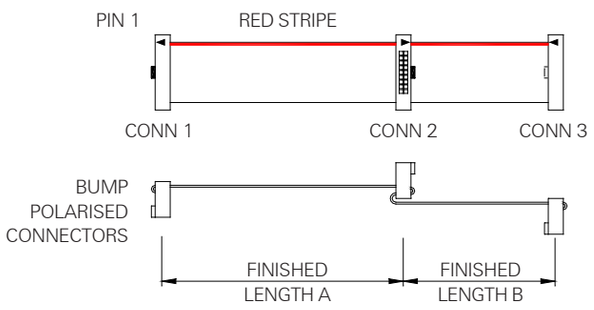
STYLE C



STYLE D



STYLE E



Looms and Cables

ITEM CODE	EXTENDED DESCRIPTION	APPLICATION
LM0061	LOOM 1830-43 1830 MODEM TO 16 WAY FRC & DB25 PLUG	1830 MODEM
4100-KT0490K	4100U XSPS POWER SUPPLY LOOM & HARNESS KIT	4100U
LM0192	MAINS LEAD 4100-0157A	4100U
LM0194	LOOM 4100 DOOR SWITCH LOOM & ASSY 003-018	4100U
LM0195	LOOM MAPNET POWER HARNESS	4100U
LM0223	BATTERY LEAD SET 4100-0157AK	4100U
LM0288	LOOM ASE CNI-403ME SIGNAL CABLE 1963-80	ASE
LM0293	LOOM ASE G18 RADIO MODEM RF CABLE	ASE
LM0092	LOOM FRC 26W STYLE E F3200 MKII CTL TO 1ST DISP 1931-88 1.25M	F3200
LM0103	LOOM F3200 MCP+MICRO SWT LOOM 1931-97	F3200
LM0152	LOOM FRC 10W ECM/F3200 NETWORK X-OVER 0.7m	F3200
LM0104	LOOM F4000 MCP + MICRO SWT LOOM 1901-196	MX4428/F4000
LM0151	LOOM F4000 RING NET UPGRADE 1901-201	MX4428/F4000
LM0185	LOOM F4000 MOLEX TO CMOS/RS232 1901-214	F4000
LM0043	LOOM QE90 EXTENDER 699-090-1 FRC 20W 0.07M	QE90
LM0047	LOOM QE90 TRAN8872 TWISTED FRC 26W STYLE D 1.3M	QE90
LM0076	LOOM ECM PROG DB9F - DB9F 1922-25	QE90
LM0101	LOOM QE90 FRC 26W STYLE E 0.45M	QE90
LM0077	LOOM RZDU RS232 ECP H/LVL LNK 1922-26 1M	RZDU
LM0078	LOOM RZDU RS232 ECM H/LVL LNK 1922-27 3M	RZDU
LM0164	LOOM V-MODEM RJ45-DB25 MALE PLU 1963-55	V-MODEM
LM0165	LOOM V-MODEM PRG LD LM0164-DB9F 1963-55	V-MODEM
LM0166	LOOM V-MODEM RJ45-DB9 FEM PLUG 1963-55	V-MODEM
LM0168	LOOM V-MODEM DB9M TO 4W MOLEX 1963-55	V-MODEM
LM0041	LOOM F3200/F4000/FP4000/MX4428 PROG TO 9 PIN SERIAL 1888-58	
LM0042	LOOM F3200/F4000/FP4000/MX4428 PROG TO 25 PIN SERIAL 1888-62	
LM0065	LOOM RS485 COMMS BD FRC 10W - DB9 1901-174	
LM0131	LOOM SERIAL PRINTER CABLE DB9(M) TO DB9(M) + DB9(F)	
LM0138	LOOM DB9M-DB9F PINS STRAIGHT THROUGH 1.8M	
LM0161	LOOM FRC 10W STYLE A 0.1M	
LM0172	LOOM FRC 10W STYLE A 0.25M	
LM0084	LOOM FRC 10W STYLE B 0.35M	
LM0093	LOOM FRC 10W STYLE C 0.25M	
LM0091	LOOM FRC 10W STYLE C 0.5M	
LM0193	LOOM FRC 14W STYLE A 0.45M	
LM0107	LOOM FRC 16W STYLE C 0.7M	
LM0053	LOOM FRC 20W STYLE A 0.3M	
LM0048	LOOM FRC 20W STYLE B 0.25M	
LM0072	LOOM FRC 20W STYLE C 0.35M	
LM0083	LOOM FRC 20W STYLE C 0.7M	
LM0073	LOOM FRC 20W STYLE C 1.45M	
LM0049	LOOM FRC 26W STYLE B 0.25M	
LM0046	LOOM FRC 26W STYLE B 0.5M	
LM0056	LOOM FRC 26W STYLE B 1.4M	
LM0044	LOOM FRC 26W STYLE B 2.0 M	
LM0045	LOOM FRC 26W STYLE B 5.0M	
LM0098	LOOM FRC 34W STYLE B 0.8M	
LM0060	LOOM FRC 34W STYLE B 1.2M	
LM0143	LOOM FRC 34W STYLE B 1.7M	

AS1668 Controls and Gas Controls

AS1668 Control Module Kits

The AS 1668 modules/kit consist of small PCBs that are fitted with the required components for several different AS1668 control and indication configurations.

A three position rotary switch gives control of the appropriate fan, by selection of OFF, AUTO, or ON (from left to right). Three LEDs give indication of STOP, FAULT, and RUN conditions. These are coloured green, yellow, and red respectively.

For maximum flexibility, a number of common AS1668 type control circuits can be achieved by using KT0113 module using different wiring configurations, and/or by minimal PCB modification (ie. the cutting of two components).

Circuit Type	3
Module Type Number	3
AZCs Used	2
Open Collectors Used	2
Relays Used	2
Load Current (max.)	1A
Load Supervised Option?	Yes
Fail Safe Load Option? (non- supervised load)	Yes
Air Flow Switch Supervised?	Yes
Fault If Not Running?	Yes
Fault If Not Stopped?	Yes
Fault After Delay?	Yes
Programmable Switch Logic?	Yes
Load RUN State Programmable?	Yes
All LEDs Programmable via Logic?	No

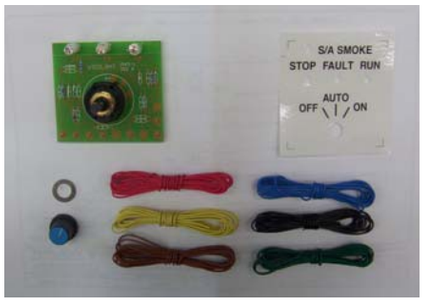
* 1 Open Collector OR 1 Relay output (as available)
** Open Collector = 0.1A maximum
Relay Contacts = 1A maximum

While the kit was primarily developed by TSP to simplify factory assembly of AS1668 panels, it is available to purchase for fitting to panels in the field.

Refer to the relevant Product Bulletins and manual LT0159 for further information regarding AS1668 kits.

Part Numbers

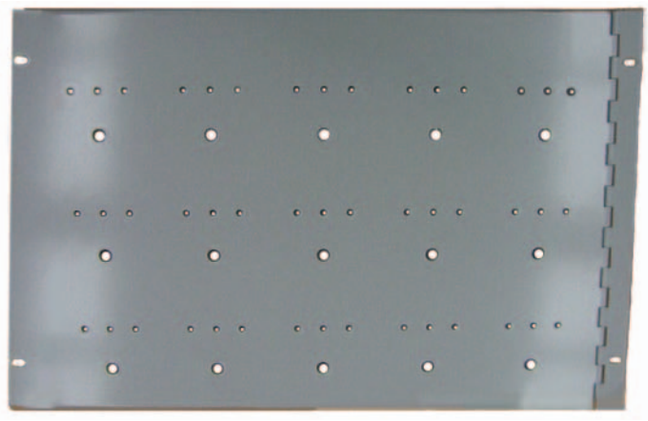
FZ9011	7U Door 19" Rack, 5 x AS1668 Controls
FZ9012	7U Door 19" Rack, 15 x AS1668 Controls
KT0113	Kit, 1945-1-3 AS1668 Control Module Type 3
KT0478	Kit, AS1668 5 way Fan Control Module



KT0113 Kit, AS1668 Control Module Type 3

KT0478 Kit, AS1668 5 way Fan Control Module
Includes PCB, 5x switch knobs and caps, 5x panel labels, 2x 26W FRC 2m cables, LT0368 instructions

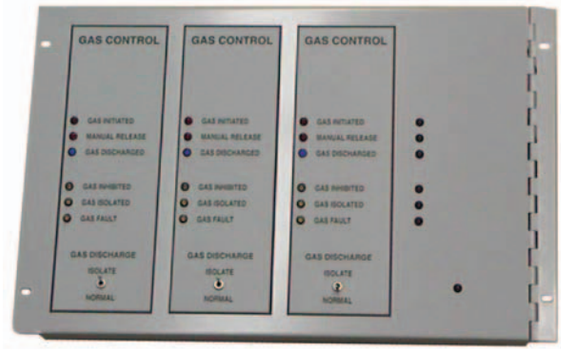
FZ9011 7U Panel with 5 AS1668 Fan controls



FZ9012 7U Panel with 15 AS1668 Fan Controls

Gas Control Modules

FP0570 Local Gas Control Station - Automatic.
Local Gas Control Stations are used in gaseous fire extinguishing systems to provide local area manual control of a release. The automatic version includes a Gas Inhibit switch, buzzer and LED, whereas the manual version does not.



ME0440 3 Zone Gas Flood 7U Door and Loom

ME0441 4 Zone Gas Flood 7U Door

ME0442 1 Zone Gas Flood 1U Door and Loom

Gas Control Modules provide indication and control of 1-4 zones of gas extinguishing on F3200 and MX4428 c.i.e. They are pre-wired modules (requiring appropriate input/output modules). The modules have a 12 way screw terminal block for easy termination of the field wiring for the Local Gas Control Stations, gas discharged pressure switch, warning signs and gas release output. The connection for the Alert/Evacuate warning signs is a 2-wire polarity switched output that supports up to 10 AVI Mk2 units. All outputs can be supervised (this requires appropriate programming and configuring in the panel). The gas control modules provide LEDs for each gas zone to indicate:

- Gas Initiated (red)
- Manual Release (red)
- Gas Discharged (blue)
- Gas Inhibited (yellow)
- Gas Isolated (yellow)
- System Inoperative (yellow);

A Gas Discharge Isolate switch that physically isolates both poles of the gas release actuator output is also provided for each gas zone.

Part Numbers	
FP0570	1937-3-1 Local Gas Control Station - Auto
FP0572	1937-3-2 Local Gas Control Station - Manual
ME0438	1 Zone Gas Flood 7U Door & Loom
ME0439	2 Zone Gas Flood 7U Door & Loom
ME0440	3 Zone Gas Flood 7U Door & Loom
ME0441	4 Zone Gas Flood 7U Door & Loom
ME0442	1 Zone Gas Flood 1U Door & Loom

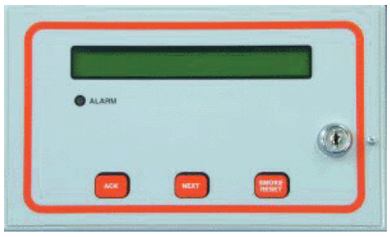
Vigilant Remote Annunciators

Compact Firefighter Facility

The Compact Firefighter Facility (FF) is a compact fire alarm repeater panel for use as a remote brigade access point to a networked fire alarm system. It provides an AS4428.1 compliant alphanumeric display of alarm information on a 2 line by 40 character LCD with a simple keypad. It is compatible with the Panel-Link Network and associated range of networked fire alarm systems, eg., MX4428, F4000, and F3200. The Compact FF is able to display alarms and selectively control fire alarm panels connected to the network.

Specifications	
Operating Voltage	9.6 to 28.8Vdc
Current (maximum)	380mA @ 9.6V
	180mA @ 27V
Network I/F	RS-485 (panel-link)
Programming I/F	DB-9 male RS232
Rating	IP41
Cabinet (surface)	250x150x50mm HWD
(flush)	301x192x75mm HWD
Weight	2.5kg
Part Numbers	
FP0865	Compact FF surface mount
FP0866	Compact FF flush mount
LM0076	DB9F-DB9F prog. cable

Nurse Station Annunciator (NSA)



The Nurse Station Annunciator is a compact fire alarm repeater panel for use by non-technical staff. It provides alphanumeric display of alarm information on a 2 line by 40 character LCD with a simple keypad. It is compatible with the Panel-Link Network and associated range of networked fire alarm systems, eg., MX4428, F4000 and F3200. The NSA is able to display alarms from all fire alarm panels connected to the network and this may be modified by programming to determine which alarms are displayed and what user responses are available.

Specifications	
Operating Voltage	9.6 to 28.8Vdc
Current (maximum)	380mA @ 9.6V
	180mA @ 27V
Network I/F	RS-485 (panel-link)
Programming I/F	DB-9 male RS232
Rating	IP41
Cabinet (surface)	250x150x50mm HWD
(flush)	301x192x75mm HWD
Weight	2.5kg
Part Numbers	
FP0880	Nurses station, flush mount
FP0881	Nurses station, surface mount
LM0076	DB9F-DB9F prog. cable

AS 4428 Network Display Unit (NDU)

FP0794 4U 19" Rack NDU Module

The NDU is a fire alarm repeater panel compatible with the Panel-Link Network and the associated range of networked fire alarm systems (eg. MX4428, F4000, F3200). It provides alphanumeric display of alarms on a 2 line by 40 character LCD and keypad. The NDU is able to display alarms and status, and control all fire alarm panels connected to the network.

This may be modified by programming to achieve a variety of display and control facilities. Its compact "slimline" cabinet style has a flush mounting option, optional full cabinet complete with MAF relays and power supply, or 19" rack module. Local call point input, optional individual zone LED displays are all fully field programmable including: site name text, zone name text, selective display of alarms based on source panel and group membership. Analogue addressable fire alarm point text displayed, database save and restore to laptop/computer, event logging to history file and optional printer.

Part Numbers	
FP0790	NDU, AS4428, MAF, PSU, full cab
FP0791	NDU, AS4428 Slimline surf. mnt
FP0792	NDU, AS4428 Slimline flush mnt
FP0794	NDU, AS4428 4U, 19" rack module

Specifications	
Power Supply	External 24Vdc
Quiescent Current	19mA
Alarm Current	78 mA
Inputs	
RDU MCP	Supervised, 10k ohm EOL
RZDU Comms	F3200/F4000 compatible
Outputs	
Printer	Pseudo RS232, Xon/Xoff, 300 to 9600 baud
LED Display/Relay	33 (max) external boards
Display Type	FFCIF to AS 1603.4
LCD	2 lines of 40 characters,
LEDs	FFCIF, status std; opt zone LEDs
Operating Temp	-5°C to +45°C
Relative Humidity	10% to 95% (n/cond)
Cabinet Size	177 x 450 x 50mm HWD
Shipping Weight	3 kg
CSIRO ActivFire Listed	afp-789

AS 1603.4 Remote Display Unit (RDU)

FP0559 4U Slim Line Wall Mount

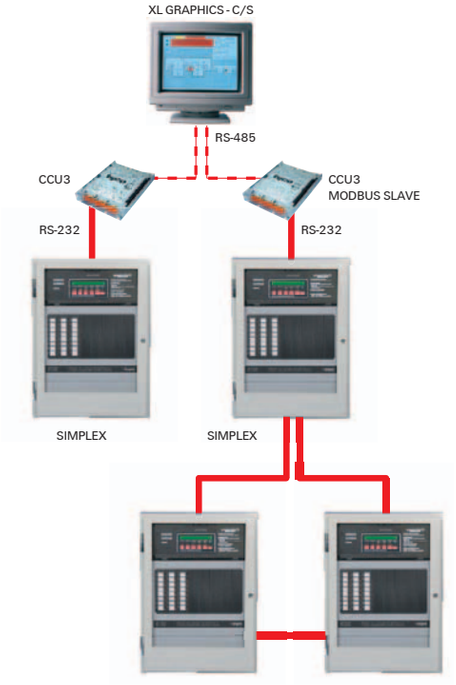
The RDU is a non-networked remote display that offers a flexible range of options. It can be programmed to process any selected zones from one F4000, MX4428 or F3200, with no requirement for these to be in a contiguous group. In this way each RDU in a large system can be assigned to display exactly the zones required at that location. It is compatible with existing systems because the text messages displayed on the LCD are programmed locally. It also supports the up-load of zone description from the fire panel. The RDU can be used to add LCD facilities to any existing Vigilant F4000 compatible fire alarm system. This achieves enhanced operation with an LCD even for existing fire alarm systems which do not have an LCD at the main fire indicator panel.

Specifications	
As per AS 4428 NDU	
Part Numbers	
FP0558	RDU, Full Cabinet
FP0559	RDU, Slimline, wall mount
FP0731	RDU to NDU upgrade kit
FP0772	RDU, Slimline flush mount
KT0177	Upgrade kit (1931-2-2 cont.)
LT0133	Operator's manual
LT0148	Install & program manual
SF0179	Software RDU V2.11

Graphics

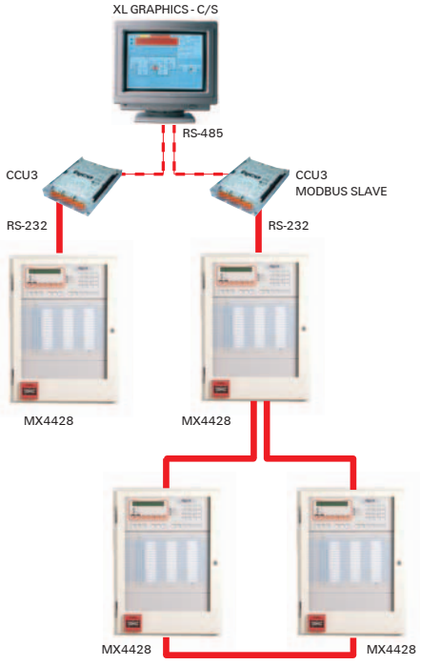
CCU1 Communications Control Unit CCU3

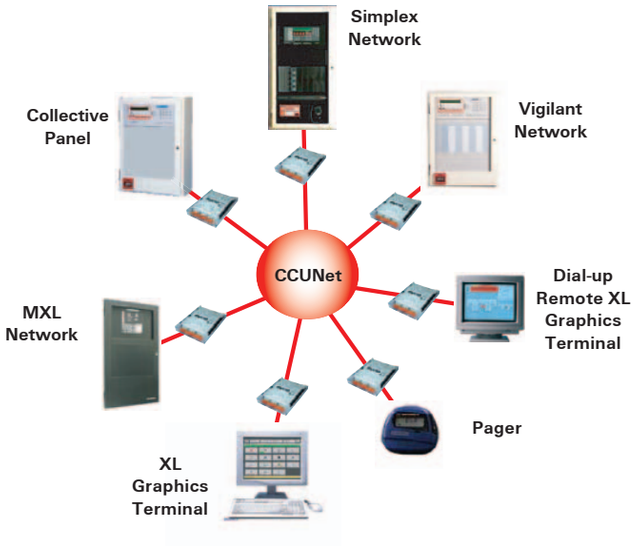
A network of Communications Control Units (CCU), called a CCUNet, can be used to connect multiple fire indicator panels and other supported devices to a central colour graphics system. This provides system wide control and annunciation of multiple fire detection systems. The CCU Network system and fire indicator panels are interconnected via dual redundant communication loops. The redundant network can be used to transparently route information around breakages and failures in the network. Event annunciation information from the fire panels is simultaneously routed via both the network CCUNet links.



Two methods of connecting CCU3/C-4100MB to Simplex c.i.e.

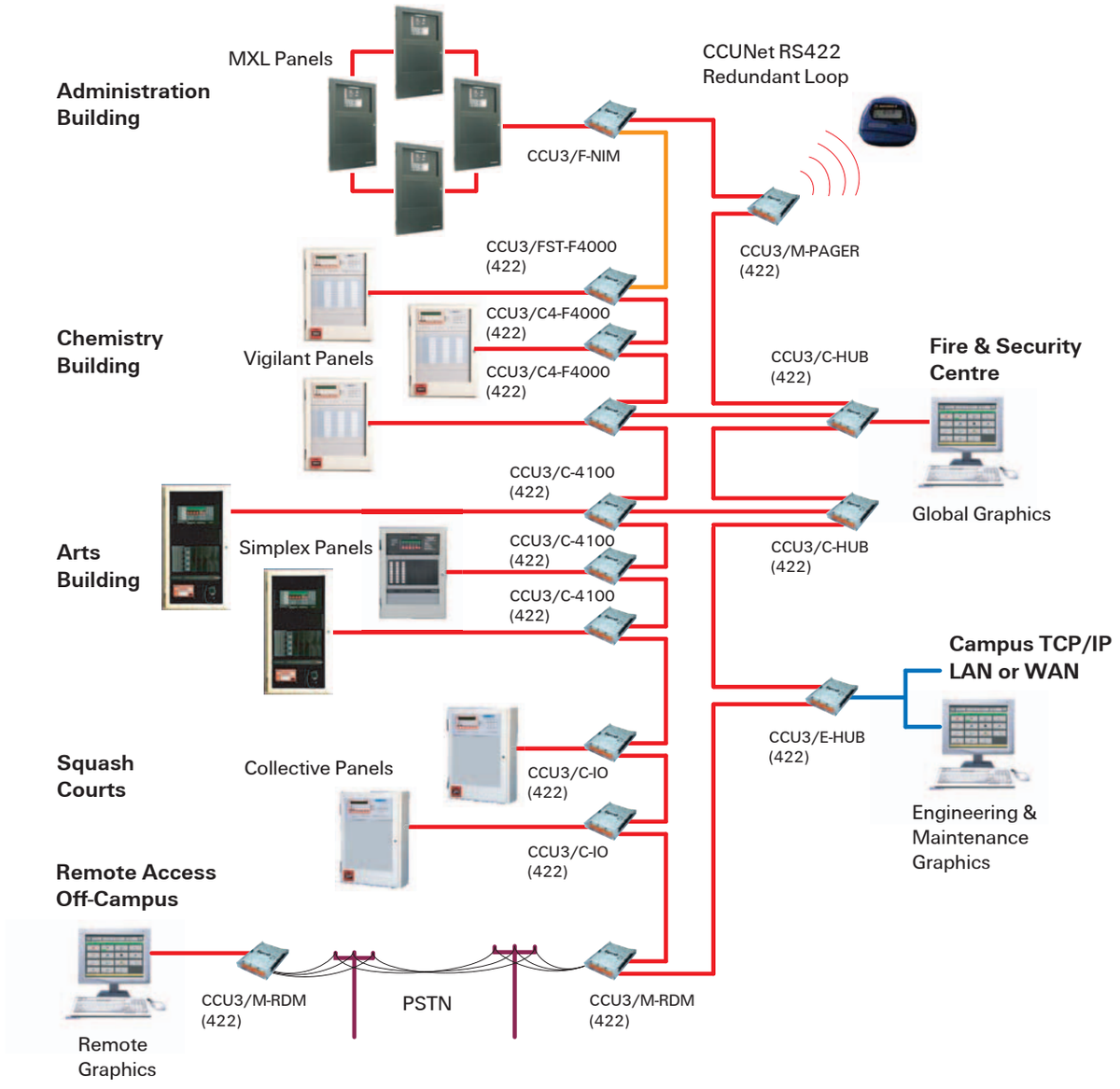
Two methods of connecting CCU3/C-MXMB to Tyco MX4428 c.i.e.





The CCUNet has the capability to integrate numerous fire panel networks into one simple colour graphics interface.

Example CCU System Diagram



This example shows several buildings on a university campus each with their own different fire panels, linked together via CCU3s to a CCUNet by 2 loops.

XL Graphics

XL Graphics continually monitors life safety system events such as alarms and provides vital assistance to operators and emergency services personnel. XL Graphics represents the very latest in interactive graphics technology, combining ease of use and programming in one software package. Utilising a combination of symbols, floor plans, pictures and text, XL Graphics displays the precise location of the fire and gives instructions on what emergency action should be taken. A detailed map of the area affected can be printed automatically for use by personnel responding to an emergency. Prompt response to a fire emergency, with the correct action, provides the opportunity to reduce financial loss and improve life safety. XL Graphics is compatible with the MX4428/F4000, F3200, QE90, Simplex 4100 and MXL Control Panels.

Warning Systems

QE90

The Vigilant QE90 Emergency Warning and Intercommunication System (EWIS) is designed to facilitate the orderly evacuation of a building in the event of an emergency. Integrating a flexible alarm and voice warning system with a dedicated emergency intercom system, the QE90 allows fire wardens or emergency services personnel to easily control and coordinate rapid building evacuation. QE90 meets the installation requirements of control and indicating equipment AS 1670.4, complies with equipment standard AS 2220.1 and supports the ISO 8201 T3 evacuation signal and strobe pattern.

Features

- Modular system is readily expandable
- Networked systems for site-wide interconnection
- High level input from compatible FIPs
- Choice of amplifers providing a wide range of output power
- Optional standby amplifiers with automatic changeover
- Visual alarm outputs
- Factory programmable evacuation sequences
- Standard or custom voice messages (on-site recordable)
- Wiring supervision for amplifiers, speaker lines, visual alarm outputs, FIP inputs, MCP inputs, power supplies, WIP circuits and ECP interconnection
- Duplicated communications links between equipment locations
- Music & non-emergency paging (with emergency override)
- Paging console available for non-emergency paging
- Non-emergency voice messages
- Range of attractive 19" rack cabinets
- QECOST Software Tool for Windows assists the purchaser to specify and estimate the cost of a QE90 system
- Complies with EWIS standard AS 2220.1-1989
- Supports ISO8201 T3 evacuation signal
- CSIRO ActivFire listing number afp-524
- FPANZ listing number VF/406

Factory-Programmable Facilities:

- System configuration
- Control relay outputs
- Special cascade sequences
- Warden zones
- FIP/ emerg. call point input to zone mapping
- Special digitised voice messages

Basic System Comprises:

- Master Emergency Control Panel (MECP) complete with full control facilities for both Emergency Warning and Emergency Intercommunication Systems
- Individual amplifier(s) per zone
- Alert/ Evacuate tones with automatic digitised voice message
- Emergency public address
- Standard automatic alarm cascade sequence
- 3 WIP circuits per zone
- Full supervision of speaker, WIP and strobe lines with visual indications and sounder
- Fire alarm inputs (one per zone)
- Master background music (BGM) input
- One BGM override output per amplifier
- Integral 24 Volt battery charger
- Storage for stand-by batteries

Site-Programmable Facilities:

- Time delays
  - Alarm to Alert delay
  - Alert to Evacuate delay
  - Cascade step interval
- Alert/ Evacuate/ PA groups
- Background music zone selection
- Individual zone isolation
- Cascade enable/ disable
- Service fault history recall/ clear
- Redirection of Master WIP to field WIP (optional)
- Operation of non-emergency Paging Console to perform WIP, BGM and general indication functions

STOCK QE90 EWIS PANELS ARE AVAILABLE - QS1000

Supplied in a standard pre-programmed configuration suitable for applications requiring no more than 10 zones of 50 watts. They are aimed primarily at projects requiring a basic format and quick delivery.

Optional Extra Facilities:

- More than 3 WIP circuits per zone
- Secondary Emergency Control Panel(s)
- Remote amplifier racks
- Multiple FIP/ emergency call point inputs per zone
- Emergency call point inputs
- 2 or 3-wire WIP/ emergency call point inputs
- Strobe (visual) alarm outputs (T3 option)
- Programmable relay outputs eg.
  - Evac fault
  - Any alarm
  - Fault or alarm
  - BGM override
  - Auto/ Man/ Isol.
  - WIP fault
  - WIP handset off hook
- Emergency control panel lighting
- Special cascade sequences
- Automatic test sequence
- Warden zones to alert wardens of alarm in another area
- Monitor zones to repeat the highest priority signal that other nominated zones are receiving
- After-hours timer input to override cascade
- Custom digitised voice messages (multiple languages available)
- Stand-by amplifier(s) with automatic changeover
- Distributed amplifier system
- Inter-ECP WIP calls (for systems with more than one ECP)
- Remote WIP phones via derived circuits (eg. fibre optics, radio)
- WIP calls redirected to PABX, radio, or other WIP
- Remote WIP control panel
- Individual zone BGM inputs
- Remote BGM control panel
- Paging console programmable to also perform WIP control and BGM control functions
- Paging chimes
- PABX paging interface
- Local zone non-emergency paging
- Event-logging printer
- High-level data links
- Networking
- Computer colour graphics SECP

Specifications

Panel size	18U	21U	28U	40U	Double 28U	Double 40U
Height (mm)	885	1050	1330	1865	1330	1865
Width (mm)	575	575	575	575	1150	1150
MECP Depth (mm)	380	350	380	380	-	380
SECP Depth (mm)	205	-	205	205	205	-
Maximum number of zones with						
10W RMS Amps	8	20	20	40	-	80
25W RMS Amps	6	10	10	20	-	40
50W RMS Amps	4	10	10	20	-	40
100W RMS Amps	2	5	5	10	-	20
200W RMS Amps	2	2	2	4	-	8
Amplifier configurations can be mixed 10, 25, 50, 100, 200 Watt						
Speaker Line Voltage	100V RMS at rated power output					
WIP Zones (maximum)	10	18	20	42	-	90
SECP Zones (maximum)	1-18	-	19-34	35-42	43-74	75-90
Special or larger system configurations are available on request						
Cabinet Material	1.6mm mild steel					
Cabinet Finish	Baked epoxy					
Colour	Cream Wrinkle BFF998CW (special colours available on request)					
Operating Temperature	-5°C to +45°C					
Operating Humidity	up to 95% RH (non condensing)					
Power Supply	230VAC +10% -11%, 50Hz					

A combined QE90/Fire Panel is available. Contact Simplex Fire Products for more information.

Refer to page 89 for a sample QE90 Configuration Sheet. These must be submitted with each QE90 order for both new panels and updates to existing panels. Refer to the relevant TSP Product Bulletin for guidance on completing the configuration sheet.

QE90 Ancillaries & Spares

FP0539 Paging Console

One or more Tyco FP0539 Paging Consoles may be used with a QE90 system. Each console gives selective zone paging for up to 30 zones. These zones do not need to be the same as evacuation zones. Programming of any combinations of amplifiers into paging zones can be done by Tyco Safety Products. If the system has more than 30 paging zones, then more than one Paging Console can be used at the same location to address the zones. The top of the Paging Console is removed to obtain access to the terminations. Only one microphone is required and it must be ordered separately.

Specifications	
Power Consumption	<50mA (no zones select.) <150mA (all zones select)
Output Voltage	300 to 700mV
Microphone Voltage	1 to 100mV
Frequency Response	100 to 10kHz ±3dB
Distortion	10mV input, <2%
Dimensions (HWD)	80 x 410 x 210mm
Weight	4kg
Part Numbers	
FP0539	Paging Console
SU0168	Gooseneck Microphone
SU0169	Desktop Microphone

FP0902 PC Paging Console

The PC-based Paging Console allows announcements to be made to up to 480 QE90 zones from a single Windows 2000/XP workstation, without requiring a separate physical paging console. The PC Paging Console interfaces a PC and microphone to the QE90 system. Control of paging individual or grouped evacuation zones is provided by software. Where the SU0168 microphone is used, the "Press To Talk' button on the PC screen is used when a paging announcement is to be made. When using the SU0169 microphone it is necessary to use the PTT button on the microphone.

Specifications	
Platform	Windows 2000, XP
Capacity	Supports 480 QE90 zones and 10 user programmed groups of zones
Connection	via audio and comms, PC required with 2 free RS232 ports
Dimensions (HWD)	310 x 238 x 105mm
Part Number	FP0902

Hand Held Microphone with Press to Talk

The handheld dynamic microphone is fitted with a press-to-talk button. It is suitable for plugging into T-Gen 50 and QE90 to provide emergency PA and recording of digitised speech message. Two models are available; ME0213 has a DIN plug for use on older QE90 ECP9002.
ME0290 has a flat plug for use on T-GEN and QE90 ECP9702.

Part Numbers	
ME0213	Microphone c/w DIN plug for QE90 ECP9002
ME0290	Microphone c/w flat plug for T-GEN and QE90 ECP9702

SU0168 Gooseneck Microphone

The SU0168 Gooseneck Paging microphone is a dynamic microphone with a cardioid polar pattern. This elegant gooseneck microphone features smooth, brilliant sound with excellent ambient noise control and feedback rejection. Its screw base is suitable for mounting on equipment or permanent desk mounting . The slimline design of this microphone makes it ideal for custom paging consoles. Supplied with 200mm flying leads and mounting kit for FP0539 Paging Console.

Specifications	
Polar Pattern	Cardioid (unidirectional)
Output Impedance	600 Ohm balanced at 1kHz
Rated Sensitivity	-80dB (1kHz, 0dB=1 V/Pa)
Frequency Response	150Hz-12KHz
Part Number	SU0168

SU0169 Desktop Microphone

The SU0169 Paging microphone is a desktop dynamic microphone with a cardioid polar pattern. It features a short-off press to talk switch with an open-off type extra switch. It has low handling noise and a 600 ohm balanced output impedance. Compatible with the FP0539 Paging Console.

Specifications	
Polar Pattern	Cardioid (unidirectional)
Output Impedance	600 Ohm balanced at 1kHz
Rated Sensitivity	-58dB (1kHz, 0dB=1 V/Pa)
Frequency Response	100 Hz to 10kHz
Cable	2 core shielded plus 2 core
Cable Length	2.5m
Termination	5 pin DIN plug
Dimensions (HWD)	215 x 100 x 150mm
Weight	440g
Part Number	SU0169

EA0404 WIP Phone

Designed specifically for use in Emergency Warning Systems, Warden Intercom Points (WIPs) are used to communicate between floor wardens and the main Emergency Evacuation Panel. When the handset is lifted, the Firephone automatically rings the Emergency Evacuation Panel. When the Panel calls the WIP, the call tone sounds through the speaker in the body of the phone. When the handset is lifted, it automatically switches from the speaker in the body to the speaker in the handset. The firephone is compatible with the Vigilant QE90 Emergency Intercommunication System.

Specifications

Call Tone	> 80dB 1W/1m
Terminations	Screw Terminals
Material	Red ABS
Dimensions (HWD)	210 x 80 x 72mm
Weight	410g
CSIRO ActivFire Listed	afp-524
Part Number	EA0404

EA0412 WIP Phone Surface Mount Enclosure

EA0412 is designed for use in Emergency Warning Systems, for providing Warden Intercom Points (WIPs) protection against impact.
The enclosure door is held closed by a magnetic catch. The enclosure is finished in red powder coat.

Specifications

Material	Mild Steel
Finish	Red powdercoat
Dimensions (HWD)	386 x 156 x 155mm
Weight	1.8 kg
Part Number	EA0412

SU0608 Evacuation Manual Call Point

The SU0608 MCP is surface mounting, with a plastic coated glass element to ensure reliable, safe operation. It is coloured white (for EWIS applications) to be used where a fire alarm system does not exist. The call point is operated when the glass element is snapped, releasing the MCP's micro switch, which signals an alarm to the EWIS panel. The element is snapped by pressing on its centre – a hammer, or other impact device, is not required.

Specifications

Max Current	Resistive 8A @ 30Vdc Inductive 3A @ 30Vdc
Contact Resistance	100mOhm. (max)
Legend	Emergency Alarm
Ambient Temp	-30 to +70°C
Relative Humidity	95%(non cond.)
Part Numbers	
SU0608	White MCP & Backbox
515.001.025	Spare Glass (pk 5)

STI-CIS Analyser and STI-CIS TALKBox

The STI-CIS Analyser measures the speech intelligibility of a fire alarm evacuation signal. To measure overall speech intelligibility, the STI-CIS Analyser uses the STI measurement method to factor in the effects of the warning system, room acoustics (reverberations and echoes) and background noise.
The STI-CIS Analyser comes equipped with its own microphone and LED display and has buttons to activate dBA and CIS measurements. There is provision for a PC interface (RS-232) for use with the STI-CIS Noise Effect Correction Software Tool.

The TALKBox is used to send the STI-PA test tone into the fire alarm warning system. It interfaces with the system through its microphone input. A line-level output is also available for systems with direct line inputs. The TALKBox comes equipped with its own CD player and speaker. The CD player has controls to Play, Rewind, and Fast Forward the CD with STI-PA test tone (supplied). However, pressing Play on the CD player is all that is required to play the test tone once you insert the STI-PA Test Tone CD into the CD player. Power is supplied to the TALKBox through a DC power supply (connected to the Ext. Power socket) or batteries. The TALKBox operates a minimum of 18 hours on eight AA alkaline batteries.

Specifications - Analyser

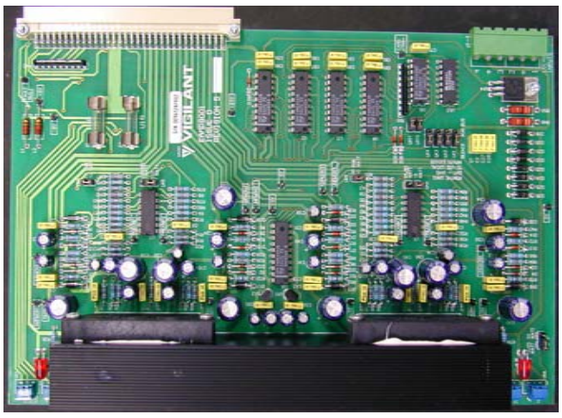
Ambient Temp	0 to 50°C
Power Supply	8 x AA batteries/AC adaptor
Dimensions (HWD)	410 x 250 x 70mm
Weight	160g

Specifications - TALKBox

Power Supply[1]	12Vdc, 190mA via 8 x AA batteries or AC adaptor at 500mA (12Vdc, tip positive)
SPL Output	0 dB to 100 dBA (STI-PA test tone)
Ambient Temp	0 to 50°C
Dimensions (HWD)	470 x 360 x 180mm
Weight	520g
Part Numbers	
STI-CIS	Analyser & TALKBox Kit

1. 92dB(A) STI-PA tone out

QE90 Spares - Amplifiers



PA0650 EAMP9001
4x10W / 2x25W Zone Power Amp PCB

PA0688 1923-19
Microvac Mic Pre-Amp PCB

PA0647 AMP200
200W Amplifier Module PCB

PA0690 HAMP9308
2x50W Amplifier Module PCB

QE90 Spares - Transformer Modules

PA0691 HTRN9308-1
2x50W Transformer Module PCB
PA0695 HTMS9408-2
2x50W Transformer Music Switching Module PCB

PA0692 HTRN9308-2
1x100W Transformer Module PCB
PA0696 HTMS9408-2
1x100W Transformer Music Switching Module PCB

PA0648 TRAN200
200W Transformer PCB

QE90 Spares - Transformer Modules

PA0792 TRAN9705-2
4x25W Transformer Module c/w Relays PCB

PA0794 TRAN9705-4
2x25W Transformer Module c/w Relays PCB

PA0795 TRAN9706-1
4x10W Transformer Module without Relays PCB

PA0796 TRAN9706-2
4x10W Transformer Module c/w Relays PCB

QE90 Spares - Interface Modules

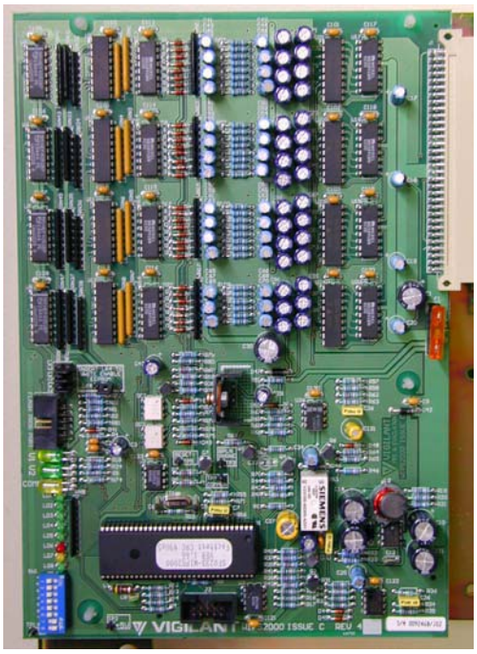
PA0657 SE9004 Signal Interface PCB

PA0621 RWIF9803
Remote WIP Interface PCB

PA0649 SPIF9709
SECP Panel Interface

PA0481 RZDU/RS232
Interface PCB 1901-100

QE90 Spares

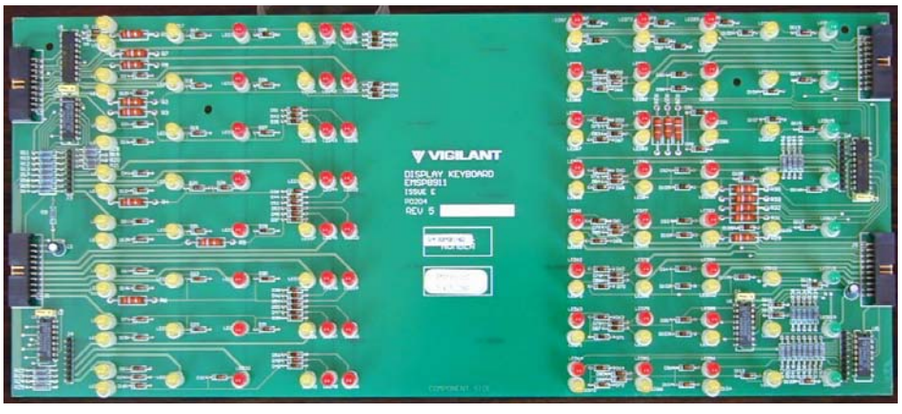


PA0642 WIPS2000
WIP Slave 0V Ref Inputs PCB

PA0689 WLED9307
QE90 WIP Flashing LED PCB

PA0622 MWIP9903
8 Circuit WIP Module PCB

PA0643 ECP9702-1
3 WIP/Zone Control PCB



PA0653 EMSP8911-2
3 WIP/Zone Display Keyboard

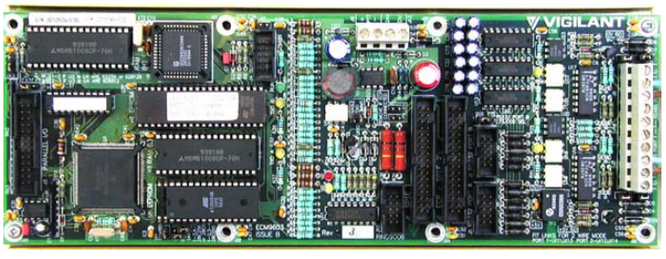
PA0916 WTRM2000
WIP Termination PCB

QE90 Spares - Communications

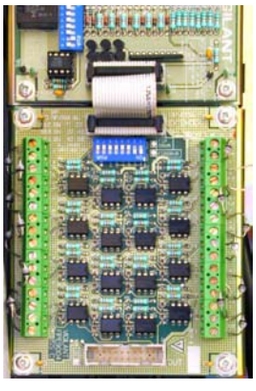
PA0646 ALIM9706
Audio Line Isolator PCB

PA0697 STRM9502
Strobe/Relay Module (WEB) PCB with AS 2220/ISO 8201 Selection

PA0651 FIB8910
FIP/BGA Master PCB



PA0698 ECM9603
Evac Communications Module PCB

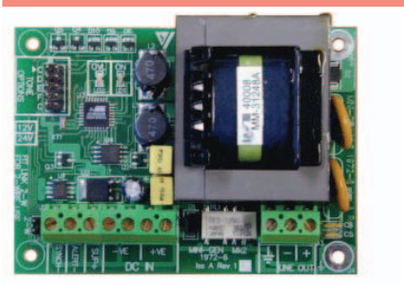


PA0652 FIPE9004
FIP/BGA Extension PCB

PA0758/759 EMUX9601
Multiplexer 16/60s Speech PCB with AS 2220 and ISO 8201 Selection

Warning System Generators

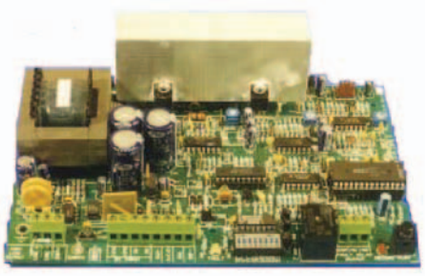
Mini-Gen Mk2



The Mini-Gen Mk2 has been designed to connect directly to Tyco/Vigilant fire alarm panels, but may be connected to other suitable panels. It utilises the fire alarm panel's warning system output supervision to supervise the wiring (from the panel to the unit and from the unit to the speakers) for open and short circuit faults. Mini-Gen is available in 12V and 24V versions and has in-built software allowing link selection to configure the Alert and Evacuate signal type and timing including keywords and voice message.

Specifications	
Speaker Line Output	100V
Load	20W max per unit
Warning Signals	AS 2220, ISO 8201
Other Tone	RH3
Dimensions (LWH)	93x67x35mm
FPANZ Listed	VF/419
Part Numbers	
4100-0895K	Simplex (on Amp bracket)
PA1025	12V Mk2
PA1026	24V Mk2

T-GEN 50



The T-GEN 50 tone generator and Public Address amplifier module generates emergency warning signals for alarm and evacuation systems where a full EWIS to AS 2220 or AS 1670.4 is not required. T-GEN 50 provides 50 watts rms of alarm tone into a 100 volt line. Different tones can be selected including the AS 2220 Alert and Evacuate signals and the ISO 8201 Evacuate tone. T-GEN 50 provides fault supervision, Public Address facilities and recorded speech message generation. Readily available accessories ensure that installing the T-GEN 50 is quick and easy.

Specifications	
T-GEN 50 (20 - 28V)	
Power Output (@ 27Vdc)	50W (rms) tone, 25W (rms) speech
Warning Signals	AS 2220, ISO 8201
Other Tones	RH3, HeeHaw, Wail
PCB Dimension (LWH)	125x195x55mm
FPANZ Listed	VF/416
Part Numbers	
PA0766	PCB Assy 1955-1-3, ISO 8201, Aust & NZ voice
PA0886	Bell, Aust & NZ voice no tone
FP0698	T-Gen 50 3U rack mtg
ME0289	T-Gen 50 1U rack mtg control panel
ME0290	Handheld Microphone
ME0291	T-Gen 50 A/I/E sw & brkt
ME0292	T-Gen 50 box, 003 lock

ME0289 T-GEN50 1U Rack Mounting Control Panel (incl. switch, loom & hardware) PA0766 not included.

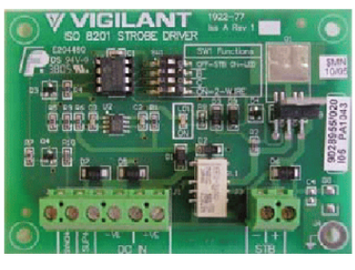
FP0698 T-GEN50 3U Rack Mounting Panel (includes PA0766)

ME0291 T-GEN50 Auto/Isol/Evac Sw & Brkt

A standalone tone generator and PA announcement system can be constructed by using the T-GEN mounted in a cabinet (eg, **ME0292**), together with the **ME0291** Auto/Isolate/Evacuate switch, and the **ME0290** microphone. A suitable power supply is also required, (eg Series 1948 24V 2 Amp (**FP0766**) and 2 x 6.5 Amp hour batteries - this is the same size as the T-GEN box).

ME0292 T-GEN50 Cabinet

ISO 8201 Strobe Driver Module



The ISO 8201 Strobe Driver generates an ISO 8201 compliant "T3" pattern for the Multi-Candela strobe 4906-9104.

It connects directly to a supervised relay output of a fire alarm panel and drives one or more lines to strobes with a synchronised T3 pattern.

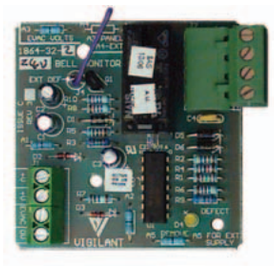
The fire alarm panel's output supervision supervises the wiring from the panel to the strobes. The output signals of up to 5 modules can be synchronised.

Four standoffs are supplied for mounting.

Specifications	
Operating Voltage	17 - 30Vdc.
Operating Current	25mA.
Quiescent Current	Nil.
Output Strobe Current	2A max.
Dimensions	93 x 67 x 9.5 x 20 mm
Mounting Pattern (mm)	Ø4 x 4 holes, 83 x 57
Operating Temp	0°C to + 45°C
Relative Humidity	0% to 95% (non-cond.)
Indicators	On (Red) [1]
Part Number	PA1043

1. This LED will flicker in time with the output cadence

Bell Monitor



The Bell Monitor 1864-32 is a small module designed to provide open and short circuit fault (defect) supervision of an evacuation circuit of an automatic fire alarm system, as required by NZS 4512 and AS 1670.1. It can be used to supervise the evacuation circuit wiring of older fire alarm panels that do not have this capability built in. Also, because it contains its own evacuation circuit relay, it can be used to extend or increase the evacuation load capability of fire alarm panels that already have built in evacuation wiring supervision.

Specifications	
Operating Voltage	24V±20%
Operating Current	4mA (8mA LED on)
Evac cct sup current:	1.3mA
Evac cct sup voltage:	13V[2]
Evac sys voltage[3]	30Vdc max.
Evac sys current	5Adc resistive max.
Dimensions (HWD):	62 x 62 x 29 mm
FPANZ Listing	VF/606
Part Number	PA0494

2. Across 10k EOL 3. If separate from panel

Warning System Ancillaries

4906-9104 Synchronised Strobe

The 4906-9104 Multi-Candela strobe is a high output xenon strobe capable of signalling evacuation using the ISO 8201 "T3" temporal pattern, as required by AS1670.4-2004 and AS 1670.1-2004. It is ceiling mounted and produces white light with a link-selectable intensity of 15cd, 30cd, 75cd or 110cd. It is controlled by either the ISO 8201 Strobe Driver Module (PA1043) or a QE90 STRM Strobe Relay Module. A 24V output cannot be used.

Specifications	
Operating Voltage	16-33Vdc
Average Current[1]	41 to 164mA
Luminous Intensity[2]	15 to 110 cd
Operating Temperature	0°C to +50°C
Relative Humidity	10% to 93% (non-cond.)
Dimensions (LWD)	121x75x67mm
Housing Colour	White
Strobe Light Colour	White (Clear)
Part Numbers	
4906-9103	Wall Mount
4906-9104	Ceiling Mount

1. Current depends on intensity 2. Selectable: 15, 30, 75, 110 cd

EA0301/2

Specifications	
Operating Voltage	24Vdc
Operating Current	80mA
Flash Rate	130 fpm
Flash Energy	0.6J
Protection	IP55
Dimensions	100 dia x 80 mm
Weight	160g
Part Numbers	
EA0301	Amber AX-35
EA0302	Red AX-35

EA0305/6

Specifications	
Operating Voltage	24Vdc
Operating Current	400mA
Flash Rate	90 fpm
Flash Energy	3.15J
Protection	IP55
Dimensions	100 dia x 94 mm
Weight	230g
Part Numbers	
EA0305	Amber
EA0306	Red

DLE201215A/R

Specifications	
Operating Voltage	24Vdc
Operating Current	600mA
Flash Rate	120 fpm
Luminous Intensity	100 Cd (Amber)
Power	15W
Protection	IP65
Ambient Temp	-20°C to +55°C
Dimensions	160 dia x 175mm
Weight	450g
Part Numbers	
DLE201215A	Amber
DLE201215R	Red

ESS7010R

Specifications	
Op. Voltage	20 to 28Vdc
Op. Current	250mA @24Vdc
Flash Energy	5J
Flash Rate	1Hz
Operating Temp	-25°C to +55°C
Relative Humidity	up to 90% (n/c.)
Ingress Protection	IP55
Dimensions (HWD)	86x86x83 mm
Weight	200g
Part Number	ESS7010R

EA0313

Specifications	
Op. Voltage	20 to 30Vdc
Inrush Current [1]	290mA
Op. Current [1]	160mA
Flash Energy	2.6J
Operating Temp	-30°C to +60°C
Relative Humidity	10 to 95% (n/c.)
Dimensions (HWD)	250x150x80mm
Weight	450g
Part Number	EA0313

1. Ratings at 24Vdc

Where two distinct visible signals are required, the Tyco EA0313 Dual Strobe unit is available. The dual strobes operate at 24 volts and provide a 2.6 Joule output. The strobes may be powered in tandem over a two wire circuit or independently over a 4 wire circuit.

40020

Specifications	
Op. Voltage	20 to 30Vdc
Inrush Current [1]	290mA
Op. Current [1]	140mA
Flash Energy	2.6J
Operating Temp	-5°C to +60°C
Relative Humidity	10 to 95% (n/c.)
Dimensions (HWD)	180x130x85mm
Weight	350g
Part Number	40020

1. Ratings at 24Vdc

The 40020 is designed to be mounted on an external wall. It is weather resistant and made of fire resistant ABS. Screws and caps are supplied.

ESS7111XR

Specifications	
	ESS7111XR
Op Voltage	24Vdc
Op Current	270mA
Dims (mm)	Ø165 x 246
Protection	IP67
Material	Aluminium
Approval	CENELEC EExdIICT4
Part Number	ESS7111XR

The ESS7111XR is a CENELEC approved EEx d IIC T4 device that is capable of automatically synchronising its flash rate with other adjacent beacons. The flash intensity is rated at 5 Joules. It features an adjustable stainless steel mounting bracket and is rated to IP67.

ESS7010ISR

Specifications	
Op. Voltage	10 to 28Vdc[1]
Op. Current	25mA @24Vdc
Flash Energy	5J
Flash Rate	120 fpm
Operating Temp	-40°C to +60°C
Relative Humidity	up to 90% (n/c.)
Ingress Protection	IP56
Dimensions (HWD)	86x86x93 mm
Weight	400g
Part Number	ESS7010ISR

1. Via zener barrier

The ESS7010ISx is an EExia rated LED warning light. It is rated ATEX EExia IIC T4, certificate ITS02ATEX2006.

HS-15EEXIINT 100V Line Ex Rated Horn Speakers HP-20EEXIINT

EX II 3 G
Certified by/Certification code/Number: NEMKO / EEx nA II T6 / 03 ATEX3286

Specifications	HS-15EEXIINT	HP-20EEXIINT
Line Voltage	100V	100V
Power Rating	15 W	20 W
Power Taps	0.8,2,4,5,7.5,15	1.5,2,5,6,10,20
SPL 1W/1m	107 dB	110 dB
SPL @ rated power	118 dB	122dB
Eff. freq. range(Hz)	370-7000	310-8000
Dispersion (-6dB 1&4kHz)	150° / 40°	115° / 30°
Material	Alum.	Polyamide
Weight	2.8 kg	2.3 kg
IP-rating	IP67	IP67
Ambient Temp	-50 to +50°C	-50 to +150°C
Dimensions (dia x L)	163x247	237 x 286
BASEEFA / Ex ds IIB+H2 T6 / Ex 81218		
Part Numbers	HS-15EEXIINT	HP-20EEXIINT

EX II GD Zone 22
Certified by/Certification code/Number: NEMKO / EEx nA II T3 / Nemko 03ATEX3568

EA0013 100V Line 10W Horn Speaker

This ABS horn speaker is designed primarily for distributed paging systems where a high degree of speech articulation and program clarity is paramount. Typical applications include schools, train/bus stations, airports, car parks and plant rooms. An adjustable power tap switch is provided, as is a 22µF bipolar isolation capacitor to permit line monitoring function when employed with Warning System installations. A 4 core loop-through flying lead is provided.

Specifications	
Power Rating	10W
Power Taps	1.25, 2.5, 5, 7.5, 10W
Sound Pressure Level	104dB, 1W@1m 114dB, 10W@1m
Frequency Response	300Hz to 13kHz
Isolation Capacitor	22µF Bipolar
Dispersion Angle	110°
Dimensions (L x dia)	255 x 180 mm
Ingress Protection	IP66
Part Number	EA0013

EA0016 100V Line 20W Horn Speaker

This plastic horn speaker is designed primarily for distributed paging systems. The speakers have clear speech reproduction to ensure intelligibility of announcements. Power taps are adjustable to suit the power rating of the amplifier or the area to be covered. The speakers are fitted with a 22µF bipolar capacitor for line monitoring and a 4 core flying lead for loop-in and loop-out connections. Each speaker has nickel-chromium plated mild steel hardware included, making them ideal for aquatic centre installations.

Specifications	
Power Rating	20W
Power Taps	5, 7.5, 10, 15, 20W
Sound Pressure Level	108dB 1W @ 1m 121dB 20W @ 1m
Frequency Response	275Hz to 10kHz
Isolation Capacitor	22µF Bipolar
Dispersion Angle	70°
Dimensions (dia x L)	212 x 285 mm
Ingress Protection	IP66
Part Number	EA0016

EA0017 100V Line 30W Horn Speaker

Ideal for harsh industrial environments this 30W horn speaker is constructed from spun aluminium painted in an industrial grade epoxy. This model features screw terminal connections eliminating the need for soldering. Power taps are selected by an inbuilt switch, adjustable with a screwdriver. Includes a universal swivel mounting bracket.

Specifications	
Power Rating	30W
Power Taps	5, 10, 15, 30W
Sound Pressure Level	125dB 30W @ 1m
Frequency Response	300Hz to 14kHz
Dispersion Angle	110°
Dimensions (dia x L)	270 x 350 mm
Weight	2.6 kg
Ingress Protection	IP65
Part Number	EA0017

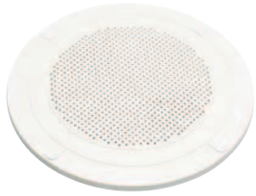
EA0005 'One Shot' 100V Line Speaker

The 'One Shot' PA speaker and grille is designed to install easily into 10 to 13mm gyprock/plaster/ acoustic ceilings. Simply drill the required size hole, terminate the wiring and push the speaker into the ceiling until it snaps into place. They are designed to meet the requirements of AS2220.1, with a transformer cover and 22µF capacitor. The transformer has 5 power taps from 0.33 to 5W and a 4 way terminal block.

Specifications	
Power Rating	5 Watts
Power Taps	0.33, 0.66, 1.25, 2.5, 5W
Sound Pressure Level	92dB 1W @ 1m
Frequency Response	100Hz - 15kHz
Ceiling Cutout	140mm diameter
Part Number	EA0005

EA0006/7 - 100V Line Ceiling Recessed Speakers

EA0006 Speaker



Speaker Grille

EA0007 Speaker

Specifications - EA0006	
Power Rating	10W rms
Driver Impedance	8 Ohm
Power Taps	0.33, 0.5, 1, 2.5, 5W
Sound Pressure Level	92dB 1W @ 1m
Frequency Response	75Hz to 20kHz @-6dB
Line Voltage	100V
Directivity @ 2kHz	160°
Size	diameter 100mm
Part Numbers	
EA0102	Grille
EA0104	Screw Covers pkt 80

The Tyco EA0006 and EA0007 speakers feature a tapped line transformer with cover, 5 position terminal strip and line supervisory capacitor. EA0006 is a 100mm diameter cone speaker suitable for concealed mounting in ceilings. EA0007 is a 200mm diameter cone speaker suitable for recessed mounting. Both speakers comply with the electrical safety requirements of AS 60950.

Specifications - EA0007	
Power Rating	10W rms
Driver Impedance	8 Ohm
Power Taps	0.33, 0.5, 1, 2.5, 5W
Sound Pressure Level	93dB 1W @ 1m
Frequency Response	50Hz to 20kHz @-6dB
Line Voltage	100V
Directivity @ 2kHz	140°
Size	diameter 200mm
Part Numbers	
EA0101	Grille
EA0104	Screw Covers pkt 80

EA0700 100V Line Surface Mount Speaker

This fitting has been designed to mount directly to the underside of concrete slabs or inaccessible ceilings. The housing is mounted to the surface using concealed internal fixings. Once mounted, the grille and speaker assembly simply screws to the housing. Cable entry can be either from the rear, or via surface mounted conduit (four 19mm conduit knockouts are provided). It is ideal for use in plant rooms, warehouses, shopping centres etc. The 100mm speaker is fitted with a transformer with taps of 0.33 to 5W on 100V line PA systems. A 4 way wire protected terminal strip and a 22µF bi-polar capacitor for line monitoring applications is included.

Specifications	
Power Rating	5W
Power Taps	0.33, 0.66, 1.25, 2.5, 5W
Sound Pressure Level	87dB, 1W @ 1m
Frequency Response	100Hz - 20kHz
Dimensions	220 dia x 55H mm
Part Number	EA0700

100V Line Audio Attenuators

A2245 10W Models and 40W Models

A2339 100W

These 100V line audio attenuators install in a standard electrical flush box or mounting block. Screwdriver terminals enable a simple and neat connection. Models for 10W ,40W and 100W are available with an override relay facility. With fire evacuation systems it is necessary to override the attenuator setting to broadcast an announcement at full volume. The override relays can be configured to operate in two modes. The standard mode requires 24Vdc applied to the relay coil to override the volume setting. The fail-safe mode requires 24Vdc to allow the attenuator to operate normally.

Specifications			
Power Rating (100V line)	10W	40W	100W
Attenuation (dB)	0 to 26.3		0 to 33
Relay Override			
Operation Voltage	24Vdc typical		
Wall Box Size	1 gang	1 gang	2 gang
Part Numbers	A2245	A2255	A2339

Multi-Tone Sounder

576.501.005 Multi-Tone with IP45 protection

576.501.016 Multi-Tone with IP66 protection

Specifications	
Operating Voltage	9 to 30Vdc
Operating Current	7mA (24Vdc - ISO 8201 T3 tone)
Sound Pressure Level	103 dB(A) (T3 tone)
Size (H x Dia)	75(97*)x90 mm (*deep base)
Operating Temp	-40°C to +70°C
Ingress Protection	IP45 or IP66
Part Numbers	576.501.005 or 576.501.016

Squashni Sounder

The Squashni electronic sounder is the original ceiling sounder for use as a universal fire detector platform or as a stand alone sounder complete with blank cover. It comes preset to tone 3 with a volume control and is fully compatible with Roshni tones, synchronised start.

Specification	
Operation	Continuous
Operating Voltage	10 to 28Vdc
Current	18mA (tone 3)
Starting Current	30mA for 2ms
Starting Time [1]	1.5ms
Sound Output [1]	87 to 102dB@1m
Tones	28
Synchronisation	Synchronised start
Operating Temperature	-40°C to +80°C
Line Monitoring	Reverse polarity
Ingress protection	IP54
Dimensions (mm)	112 dia x 30 deep
Weight	155g
Part Number	310-16F

1. Tone dependant

GX93 Mini Horn Sounder

The GX93 is ideal for applications where a dependable alarm signal is required in hotels, dormitories, apartments, and other installations.

The unit is shipped with link J1 inserted for ISO 8201 T3 Temporal pattern tone. Remove J1 for continuous horn signal. The GX93 is intended for indoor installation only. This appliance is not weather-proofed for outdoor applications.

The GX93 is available in red or white versions.

* The sound output for the Temporal 3 tone is rated lower; the time the horn is off is averaged into the sound output rating. While the horn is producing a tone in the Temporal 3 mode its sound pressure is the same as the continuous mode.

Specifications	
Operating Voltage	8 to 33Vdc
Alarm Current	22mA (24Vdc)
Sound Pressure Level	
Continuous Tone	77 to 85dB @ 3m
Temporal 3 Tone	75 to 81dB @ 3m*
Operating Temperature	0 to +49°C
Dimensions	
GX-93R	122x53x19mm (HWD)
GX-93W	114x72x13mm (HWD)
Part Numbers	
GX93R	Red Mini Horn Sounder
GX93W	White Mini Horn Sounder

DB3 Flameproof Horn Sounder

The DB3 Horn Sounder is a high power device designed for use in potentially explosive atmospheres and harsh environments. Stainless steel screws and sinter are incorporated to ensure a corrosion free product. A tapered flamepath is used. The DB3 sounder volume is adjustable from 93dBA at 50mA** to 115dBA at 350mA**

**Input current is measured with 24V input voltage, tone 970Hz continuous

Approvals	
CENELEC	EN50014,18,19
BASEEFA	Cert No BAS00ATEX2097X EExd IIC 100°C (-55 to +55°C amb) T5 Zone 1 & Zone 2
UL Listed	Class 1 Div 2, Groups A-D Class 1 Zones 1 & 2, AExd IIC T4 Listing No E203310
GOST	1Exd IIC T4 & 1Exde IIC T4 Certificate No A-0759

Specifications	
Operating Voltage	24Vdc
Rated Current*	380mA @ 24Vdc
Sound Pressure Level*	115dBA ± 3dBA
Tones	27 user selectable
Cable Entries	1 x 20mm EExd
Terminals	6 x 2.5mm^2
Temperature	
EExd	-20°C to +55°C
UL	-55°C to +55°C
GOST Exd	-20°C to +50°C
Weight	6kg
Ingress Protection	IP66
Part Number	576.501.043

* tone dependent

FP0875 Isolation Amplifier

The FP0875 Isolation Amplifier connects to an existing 100V speaker line and reproduces this signal at up to 50W load on a separate supervised 100V line. It is suitable for use with speech and music as well as with warning tones. The 100V output line from the amplifier is electrically isolated from the input 100V line, so noise or other signals on the output line are kept separate and do not affect the input line. The Isolation Amplifier requires a nominal supply of 27Vdc.

Specifications	
Supply Voltage	19.6V to 28.8Vdc
Quiescent Current	57mA[1]
Active Current	2.2A (50W @ 27Vdc)
Input Signal	100V rms @ 1W max.
Output Voltage	100V rms
Output Power	50W rms[2] / 25W[3]
Dimensions (HWD)	240x295x80 mm
Part Number	FP0875

1. No speech or background music
2. Tones 3. Speech/music

200mm Motorised Bell

Features

- CE marked
- Low cost
- Extra high 94dBA/m
- Slim profile (53mm)
- Fully suppressed and polarised
- Quick and easy to install

Specifications	
Operating Voltage	24Vdc
Rated Current	30mA @ 24Vdc
Sound Output	95dBA @ 1m
Operating Temp	-10°C to +50°C
Colour	Red
Weight	1420g
Part Number	BELL01

Audio Visual Indicators (AVI)

FP0853 AVI MK2 2 LINE RED Shown with FA2301 Facia

Specifications

Operating Voltage	19 to 28Vdc
Current (@24Vdc)	
1 Line & tone	45mA
2 Lines & tone	62mA
3 Lines & tone	80mA
4 Lines & tone	97mA
Luminance	300cd/m2 - 1Hz Flash
Sound Pressure	90dBA @ 1m axial
Dimensions (HWD)	206x316x85 mm

Designed to comply with AS1603.11

Part Numbers

FP0853	AVI Mk2 2 line red
FP0854	AVI Mk2 3 line yellow
KT0292*	Exp Kit: red LED PCB + hardware
KT0293**	Expansion Kit: red double sided
FA2300	'FIRE ALARM EVACUATE AREA' 2 line red
FA2301	'FIRE ALARM DO NOT ENTER' 2 line red
FA2302	'DO NOT ENTER CO2 GAS DISCHARGED' 3 line red
FA2303	'DO NOT ENTER FM-200 GAS DISCHARGED' 3 line red
FA2304	'DO NOT ENTER INERGEN GAS DISCHARGED' 3 line red
FA2306	'CO2 SYSTEM INOPERATIVE' 3 line yellow
FA2307	'FM-200 SYSTEM INOPERATIVE' 3 line yellow
FA2308	'INERGEN SYSTEM INOPERATIVE' 3 line yellow
FA2310	'WARNING FIRE DOOR CLOSING' 3 line red
FA2476	'EXTINGUISHING SYSTEM INOPERATIVE' 3 line yellow

*adds a 3rd LED board to make 3 line red sign

** adds 2nd cover & base with 2 LED boards for ceiling mounted double sided 2 line red sign

The AVI Mk2 is an illuminated warning sign that produces distinct audible and visual indication of an emergency. It is designed for use with fire alarm or gaseous fire extinguishing systems, or other applications where clear audio-visual warning is required. On activation, the AVI's internal LEDs illuminate the lettering on the 2 or 3 line sign faceplate/s and the internal loudspeaker produces either ISO 8201 or AS 2220 audible warning signals. The internal speaker has a link selectable Quiet option that reduces the tone volume by 10dB.

Configuration Options

Illumination of the top and bottom sign sections and selection of the tones to be used is field programmable using internal links. This way, the AVI can readily display either two-stage or alternate warnings. Up to four lines of text may be accommodated on the faceplate, although use of two or three lines is standard. For situations with low ambient light, the sign illumination can be reduced by removing a resistor in each LED Board driver. This also reduces current consumption. Expansion options include an LED board kit to convert a red 2-line unit to 3-line and a back-box kit to expand a red 2-line unit to ceiling mounted, double sided format.

Several AVIs may be synchronised by connecting the 'Sync' terminals (an additional wire is required between units).

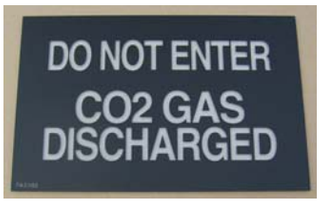
FP0854 AVI MK2 3 LINE YELLOW

KT0292 AVI MK2 EXPANSION RED LED PCB & HARDWARE

KT0293 AVI MK2 RED DOUBLE SIDED EXPANSION KIT

FA2300 AVI MK2 FACIA & DIFFUSER,FIRE ALARM,EVACUATE AREA

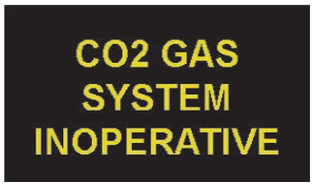
FA2301 AVI MK2 FACIA & DIFFUSER,FIRE ALARM,DO NOT ENTER



FA2302 AVI MK2 FACIA & DIFFUSER,DO NOT ENTER,CO2 DISCHARGED

FA2303 AVI MK2 FACIA & DIFFUSER, DO NOT ENTER, FM-200 GAS DISCHARGED

FA2304 AVI MK2 FACIA & DIFFUSER, DO NOT ENTER, INERGEN GAS DISCHARGED

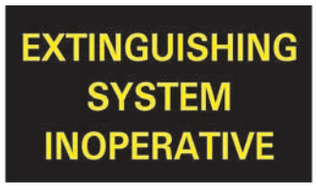


FA2306 AVI MK2 FACIA & DIFFUSER,CO2 GAS SYSTEM INOPERATIVE

FA2307 AVI MK2 FACIA & DIFFUSER, FM-200 GAS SYSTEM INOPERATIVE

FA2308 AVI MK2 FACIA & DIFFUSER, INERGEN GAS SYSTEM INOPERATIVE

FA2310 AVI MK2 FACIA & DIFFUSER, WARNING FIRE DOOR CLOSING



FA2476 AVI MK2 FACIA & DIFFUSER,EXTINGUISHING SYSTEM INOPERATIVE

Batteries and Power Supplies

Batteries

Part Number	Model No.	Voltage (V)	Ah	Dimensions (mm)			Weight (kg)	CSIRO Listing
				Length	Width	Height		
-	LA12-1.2	12	1.2	97	47.5	55	0.65	afp-1558
-	LA12-4	12	4	90	70	106	2.1	afp-1558
PS1270	LA12-7	12	7	150	65	98	2.8	afp-1558
PS12120	LA12-12	12	12	151	98	98	4.7	afp-1558
PS12180	LA12-17	12	17	180	75	168	6.0	afp-1558
PS12240	LA12-24	12	24	175	165	125	9.0	afp-1558
PS12400	LA12-40	12	40	197	165	170	14.5	afp-1558
PS12650	LA12-70	12	70	350	166	174	24.1	afp-1558
-	LA12-100	12	100	331	173	240	31	afp-1558

Tyco rechargeable batteries are lead-lead dioxide systems. The dilute sulphuric acid electrolyte is suspended and thus immobilised. Should the battery be accidentally overcharged producing hydrogen and oxygen, special oneway valves allow the gases to escape thus avoiding excessive pressure build-up. Otherwise, the battery is completely sealed and is, therefore, maintenance-free and leak proof.

24Vdc Power Supplies for QE90/MX4428/F4000

ME0331 - 24Vdc 6A (QE90)
ME0340 - 24Vdc 6A (MX4428)

ME0330 - 24Vdc 6A Brick (QE90)
ME0334 - 24Vdc 6A Brick (MX4428)

PSU2406 and PSU2412 power supplies feature combined power supply and constant voltage, temperature compensated, battery charging facilities to suit QE90 evacuation systems and MX4428/F4000 fire indicator panels.
The range of models includes 6 Amp in 19" rack mounting (2U) or gear-plate mounting (brick) and 12 Amp in 19" rack mounting (2U).
Informative LEDs provide diagnostic indications for ease of servicing.
A green LED on the front panel indicates operation and its flash cadence indicates current loading.
A yellow LED provides fault indication with the flash cadence identifying the fault type. The power supplies require a mains power input of 230V 50Hz.

Specifications	**2406**	**2412**
Output	24Vdc 6A	24Vdc 12A
19" Rack Type		
Dimensions (mm HWD)	89x483x123	89x483x180
Brick Type		
Dimensions (mm HWD)	96x262x158	
CSIRO ActivFire Listed	afp-1290	
Part Numbers		
19" Rack Type		
QE90	ME0331	ME0333
MX4428	ME0340	ME0343
Brick type		
QE90	ME0330	
MX4428	ME0334	
Accessories		
PA0813	Monitor/Term PCB - Spares	

ME0333 - 24Vdc 12A (QE90-PSU2412)

ME0343 - 24Vdc 12A (MX4428-PSU2412F)

FP0754 24Vdc 6A AS 1603.4 & AS 4428 MX4428/F4000 Power Supply

FP0754 comprises an ME0334 (PSU2406F 'brick') power supply for AS 1603.4 & AS 4428 MX4428/F4000 mounted within the FP0576 8U 19" rack battery box which has a similar finish to the range of standard Vigilant 19" Rack Cabinets. The cabinet provides IP51 protection and the door is secured with 003 lock. Use with indicator PCB, PA0848 for LED indication on cabinet door of Mains On, Charger Low, Charger High, Battery Fail, Battery Low.

Specifications	
Output	24Vdc 6A
Input	230Vac 50Hz
Battery Capacity	40Ah
Dimensions (HWD)	440x550x211mm
Cabinet	1.6mm mild steel, powder coat cream wrinkle
Ingress Protection	IP51
Part Number	FP0754

FP0803 24Vdc 12A Power Supply

FP0803 comprises an ME0343 (PSU2412F 2U rack mounted) power supply for AS 1603.4 & AS 4428 MX4428/F4000 mounted within the FP0576 8U 19" rack battery box which has a similar finish to the range of standard Vigilant 19" Rack Cabinets. The cabinet provides IP51 protection and the door is secured with 003 lock. Use with indicator PCB, PA0848 for LED indication on cabinet door of Mains On, Charger Low, Charger High, Battery Fail, Battery Low.

Specifications	
Output	24Vdc 12A
Input	230Vac 50Hz
Battery Capacity	40Ah
Dimensions (HWD)	440x550x211mm
Cabinet	1.6mm mild steel, powder coat cream wrinkle
Ingress Protection	IP51
Part Number	FP0803

FP0804 24Vdc 2.5A AS 1603.4 F4000 Power Supply

FP0804 comprises a power supply for AS 1603.4 F4000 mounted within the FP0576 8U battery box which has a similar finish to the range of standard Vigilant 19" rack cabinets. The cabinet provides IP51 protection and the door is secured with a 003 lock. Use with indicator PCB, PA0848 for LED indication on the cabinet door of Mains On, Charger Low, Charger High, Battery Fail and Battery Low.

Specifications	
Output	24Vdc 2.5A
Input	230Vac 50Hz
Battery Capacity	40Ah
Dimensions (HWD)	440x550x211mm
Cabinet	1.6mm mild steel, powder coat cream wrinkle
Ingress Protection	IP51
Part Number	FP0804

FP0576 Empty Battery Box

This battery box provides 8U of 19" rack capacity and has a similar finish to the range of standard Tyco 19" Rack Cabinets - 1.6mm mild steel construction, with powder coated, cream wrinkle finish. The cabinet provides IP51 protection and door is secured with 003 lock. Battery capacity is 80Ah using 2 x PS-12800 batteries or up to 120Ah using PS-12400 batteries.

Specifications	
Dimensions (HWD)	440x550x211mm
Material	1.6mm mild steel, powder coat cream wrinkle
Ingress Protection	IP51
Part Number	FP0576

FP0766 PSU1948 24Vdc 2A Power Supply

Series 1948 Power Supplies are designed specifically for use in fire alarm systems. They provide a compact, self-contained 24 volts dc mains power supply. Their built-in facilities to monitor the charging voltage and battery capacity make them ideal for powering brigade signalling equipment, detectors, warning devices and ancillary equipment. If the charging voltage or battery capacity becomes low they activate a warning indication and output. Sealed lead-acid batteries may be purchased separately.

Specifications	
Output	24Vdc 2A
Input	230Vac 50Hz
Battery Capacity	6.5 Ah
Dimensions (HWD)	295x240x80mm
CSIRO ActivFire Listed	afp-1341
FPANZ Listed	VF/629
Part Number	FP0766

FP0802 PSU1948 12Vdc 0.5A for ASE

The FP0802 Series 1948 Power Supply is designed specifically for use with the Centaur Alarm Signalling Equipment. The ASE must be ordered separately. A blanking plate is fitted in the ASE opening.

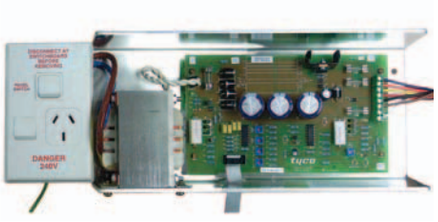
Specifications	
Output	12Vdc 0.5A
Input	230Vac 50Hz
Battery Capacity	6.5 Ah
Dimensions (HWD)	295x240x80mm
CSIRO ActivFire Listed	afp-1341
FPANZ Listed	VF/629
Part Number	FP0802

FP0852 PSU1948 24Vdc 2A 'VESDA' Power Supply

This Series 1948 Power Supply is designed match the VESDA LaserPLUS and LaserSCANNER detectors in size and colour. The FP0852 provides a compact, self-contained 24 volts dc mains power supply, with built-in facilities to monitor the charging voltage and battery capacity. make them ideal for powering brigade signalling equipment, detectors, warning devices and ancillary equipment. If the charging voltage or battery capacity becomes low they activate a warning indication and output. Sealed lead-acid batteries may be purchased separately.

Specifications	
Output	24Vdc 2A
Input	230Vac 50Hz
Battery Capacity	2 x 12 Ah
Dimensions (HWD)	230x360x130mm
CSIRO ActivFire Listed	afp-1341
FPANZ Listed	VF/629
Part Number	FP0852

FP0874/FP0882 MX4428/F4000 24Vdc 2.5A Power Supply



The FP0874/FP0882 Power Supplies are direct replacements for older FP0825/FP0474 supplies.

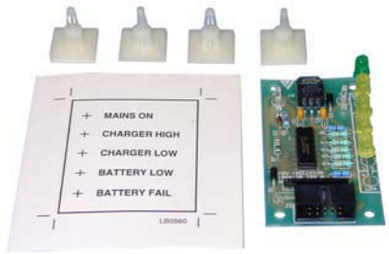
The FP0874 is used in MX4428 panels (or F4000 upgraded to V3.10+ software).

The FP0882 is used in F4000 AS1603.4 panels (it has the battery test resistors required by AS 1603.4).

Both supplies feature a 3 pin GPO, replacing the metal mains cover & panel mount mains switch.

Specifications	
Output	24Vdc 2.5A
Input	230Vac 50Hz
CSIRO ActivFire Listed	afp-1341
FPANZ Listed	VF/629
Part Numbers	
FP0874	MX4428 24Vdc 2.5A
FP0882	F4000 24Vdc 2.5A

PA0848 PSU Indicator PCB



This PCB Assembly connects via a flat ribbon cable to the PSU24XX range of power supplies. The PCB provides optional Mains On, Charger Low, Charger High, Battery Fail and Battery Low LED indicators which may be mounted on the front facia of equipment. PCB Dimensions (mm): 75H x 40W x 30D. Supplied complete with self-adhesive PCB stand-offs and LED label. It mounts on 4 adhesive-based stand-offs, included with the PCB. Five Ø5.5-6mm holes need to be drilled at 10mm vertical spacing for the LEDs.
The LEDs are bent around the side of the PCB and out through the holes in the door.
A label identifying the LEDs and their functions is also included.
Refer to Product Bulletin PBG0093 for further information

Specifications	
Dimensions (HWD)	75x40x30mm
Part Number	PA0848

Door Holders & Accessories

EA0405 Door Holder Release

The EA0405 Electromagnetic Door Holder Release is designed to allow fire and smoke doors to be opened manually. A standard switch plate mounting is used. A momentary action switch de-energised the door holder allowing the door to open.

Specifications	
Operating Voltage	12/24Vdc
Maximum Current	12A
Operating Temp	0 to 60°C
Relative Humidity	95% (non-cond.)
Cable Termination	4x1.5mm2
Dimensions	74x118x30mm
Part Number	EA0405

SU0613 Emergency Door Release - Single Pole

The SU0613 Manual Call Point has a plastic coated frangible element to ensure safe and reliable operation, producing no dangerous glass shards. It is operated by simply pressing on the centre of the frangible element until it snaps. A hammer or other impact device is not required. The snapped frangible element releases a single pole microswitch. The SU0613 is a surface mounting, white MCP that includes a white back box to house the terminations. It is fitted with a green label carrying the words EMERGENCY DOOR RELEASE in white text. Switch function (NO/NC) is determined by the position of the terminal block.

Specifications	
Max Current @ 30Vdc	Resistive 8A Inductive 3A
Contact Resistance	100mOhm. (max)
Switch	Single Pole
Operating Temp	0 to 60°C
Relative Humidity	95% (non-cond.)
Dimensions	87x87x52 mm
Legend	Emergency Door Release
Part Numbers	
SU0613	BGA
515.001.025	Spare Glass (pk 5)

SU0614 Emergency Door Release - Double Pole

The SU0614 Manual Call Point has a plastic coated frangible element to ensure safe and reliable operation, producing no dangerous glass shards. It is operated by simply pressing on the centre of the frangible element until it snaps. A hammer or other impact device is not required. The snapped frangible element releases a double pole microswitch. The SU0614 is a surface mounting, white MCP that includes a white back box to house the terminations. It is fitted with a green label carrying the words EMERGENCY DOOR RELEASE in white text. There are 2 terminal blocks for connection. Switch function (NO/NC) is determined by the terminals used.

Specifications	
Max Current @ 30Vdc	Resistive 8A Inductive 3A
Contact Resistance	100mOhm. (max)
Switch	Double Pole
Operating Temp	0 to 60°C
Relative Humidity	95% (non-cond.)
Dimensions	87x87x52 mm
Legend	Emergency Door Release
Part Numbers	
SU0614	DP BGA
515.001.025	Spare Glass (pk 5)

FP0101 Electromagnetic Door Holder

The FP0101 Electromagnetic Door Holder is designed to hold fire and smoke doors open under normal conditions, but automatically close under their own spring return mechanism when a fire or smoke alarm system is activated. The door is held open by the magnetic force between an electromagnet mounted on the wall behind the door and a steel keeper plate mounted on the back of the door. When the electromagnet is de-energised, the door automatically closes. Alternatively the door can be manually released by pressing the button on the magnet base.

Specifications	
Operating Voltage	24Vdc ± 20%
Operating Current	50mA nominal
Operating Temp	0 to 60°C
Relative Humidity	95% (non-cond.)
Cable Termination	2x1.5mm^2
Holding Load	25kg nom. @24V, 20°C
Dimensions	
Magnet	118x74x27mm
Plate	75 dia x 23mm
Weight	600g
Part Number	FP0101

EA0407 Electromagnetic Door Holder 150mm

The EA0407 Electromagnetic Door Holder is designed to hold fire and smoke doors open under normal conditions, but automatically close under their own spring return mechanism when a fire or smoke alarm system is activated. The door is held open by the magnetic force between an electromagnet mounted on the wall behind the door and a keeper fixed to the back of the door. When the electrical supply to the electromagnet is interrupted, the electromagnet is de-energised and the door automatically closes.

Specifications	
Operating Voltage	24Vdc ± 20%
Operating Current	50mA nominal
Operating Temp	0 to 60°C
Relative Humidity	95% (non-cond.)
Cable Termination	2x1.5mm2
Holding Load	25kg nom. @24V, 20°C
Dimensions	150mm 75 dia x 23mm (Plate)
Part Number	EA0407

EA0408 Electromagnetic Door Holder 300mm

The EA0408 Electromagnetic Door Holder is designed to hold fire and smoke doors open under normal conditions, but automatically close under their own spring return mechanism when a fire or smoke alarm system is activated.The door is held open by the magnetic force between an electromagnet mounted on the wall behind the door and a keeper fixed to the back of the door. When the electrical supply to the electromagnet is interrupted, the electromagnet is de-energised and the door automatically closes.

Specifications	
Operating Voltage	24Vdc ± 20%
Operating Current	50mA nominal
Operating Temp	0 to 60°C
Relative Humidity	95% (non-cond.)
Cable Termination	2x1.5mm2
Holding Load	25kg nom. @24V, 20°C
Dimensions	300mm 75 dia x 23mm (Plate)
Part Number	EA0408

EA0409 Floor Mount Door Holder and Box

The EA0409 Floor Mount Door Holder comprises of a Box and Holder that will retain a load of 25kg. The Box provides a convenient attractive cover protecting the door holder from accidental damage.

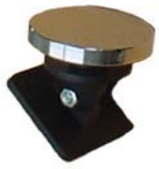
Specifications	
Operating Voltage	24Vdc
Load	25kg
Dimensions (HWD)	120x85x70mm
Weight	550g
Finish	Cream Wrinkle Powder Coat
Part Number	
EA0409	Kit (box, holder & keeper)
Spares	
35771	Door Holder & Keeper set
17295/30	30° Anvil (Keeper Plate)

EA0410 Electromagnetic Door Holder 150mm 90°

The EA0410 Electromagnetic Door Holder is designed to hold fire and smoke doors open under normal conditions, but automatically close under their own spring return mechanism when a fire or smoke alarm system is activated.The door is held open by the magnetic force between an electromagnet mounted on the wall behind the door and a keeper fixed to the back of the door. When the electrical supply to the electromagnet is interrupted, the electromagnet is de-energised and the door automatically closes.

Specifications	
Operating Voltage	24Vdc ± 20%
Operating Current	50mA nominal
Operating Temp	0 to 60°C
Relative Humidity	95% (non-cond.)
Cable Termination	2x1.5mm2
Holding Load	25kg nom. @24V, 20°C
Dimensions	150mm 75 dia x 23mm (Plate)
Part Number	EA0410

EA0411 Electromagnetic Door Holder 300mm 90°



The EA0411 Electromagnetic Door Holder is designed to hold fire and smoke doors open under normal conditions, but automatically close under their own spring return mechanism when a fire or smoke alarm system is activated. The door is held open by the magnetic force between an electromagnet mounted on the wall behind the door and a keeper fixed to the back of the door. When the electrical supply to the electromagnet is interrupted, the electromagnet is de-energised and the door automatically closes.

Specifications	
Operating Voltage	24Vdc ± 20%
Operating Current	50mA nominal
Operating Temp	0 to 60°C
Relative Humidity	95% (non-cond.)
Cable Termination	2x1.5mm2
Holding Load	25kg nom. @24V, 20°C
Dimensions	300mm 75 dia x 23mm (Plate)
Part Number	EA0411

Aspirating Smoke Detectors VESDA

The VESDA range of aspirating smoke detetors are high sensitivity devices that provide both an early warning to facilitate intervention, and a suppression (Fire 2) signal to initiate release at an appropriate level, eliminating the need for a separate detection system. The system is modular, displays and programmers can be installed only where needed.

VESDA LaserFOCUS™

Designed to protect spaces of less than 250 m^2, the VESDA LaserFOCUS is the cost-effective solution for areas such as:

- Local Telecommunication Exchanges
- Air Handling Units
- Smaller Server Rooms
- Correctional Facilities
- Control Rooms
- Switch Rooms
- Railway Signal Hubs
- Storage Facilities
- Cabinets
- Hazardous Areas (Class 1 Div 2)

The VESDA LaserFOCUS is ideal for protecting the service provision associated with small telecommunications facilities such as local exchanges and mobile base stations. The LaserFOCUS incorporates first-in-industry Ultrasonic Airflow Sensing to provide flow measurement that is immune to temperature and pressure changes. It's out-of-the-box design makes installation and commissioning quick and easy and the pre-engineered pipe network designs supplied with the product make system design simple.

VLF-250-02 LaserFOCUS Detector-relays only
VLF-500-02 LaserFOCUS VESDAnet compatible

VESDA LaserCOMPACT™

The LaserCOMPACT detector has been specifically designed to provide all the benefits of aspirating smoke detection, including very early warning, in single small areas and where space is at a premium. This has been achieved through the combination of approved LaserPLUS detection technology, dual stage filtration technology and a modified aspirator design incorporated in a smaller enclosure with simplified display. LaserCOMPACT is available in four versions of interface: relays only (RO), relays and VESDAnet™ , Simplex TrueAlarm, Tyco MX.

VLC-600

VLC-800MX

Features

- Reduced size
- Absolute smoke detection
- Wide sensitivity range
- Single pipe inlet
- Simple display
- Referencing
- VESDAnet communication (VN)
- Dual stage dust filter
- Three alarm levels
- Configurable relays

Specifications

Operating Voltage	18 to 30Vdc
Operating Current	225mA
Alarm Current	245mA
Operating Temperature	
Sensor Ambient	-10°C to +39°C
Sampled Air	-20°C to +60°C
Relative Humidity	10 to 95% (non-cond.)
Alarm Sensitivity	0.05 to 12%obs/m
Coverage Area	500 m^2
Dimensions (HWD)	225x225x85mm
Weight	1.9 kg
Part Numbers	
VLC-505	VESDAnet Version (VN)
VLC-500	Relays Only Version (RO)
VLC-600	Simplex TrueAlarm
VLC-800MX	Tyco MX

- Air flow monitoring
- Optional remote display and relay capability
- AutoLearn™

LaserPLUS™ Standard Modular Range - LaserPLUS Detectors

The detector assembly contains the laser detection chamber, high efficiency aspirator, monitored filter cartridge, control electronics, and relay interface. The detector assembly can be used as a "distributed" system, with the display, programmer and VESDAnet socket modules mounted in a remote location. Alternatively, the detector assembly can be configured as a "self-contained" system by replacing the detector's blank panels with the display and/or programming modules.

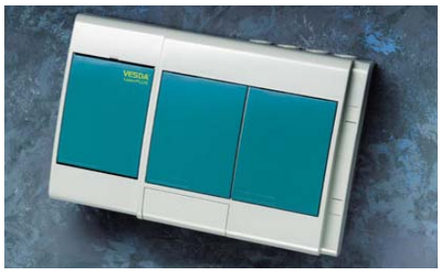
Specifications

Operating Voltage	18 to 30Vdc
Operating Current [1]	240mA
Alarm Current [2]	290mA
Operating Temp	0°C to +39°C
Relative Humidity	0 to 95% (non-cond.)
Dimensions (HWD)	225x350x125mm
Weight [3]	4 kg

1. No display or programmer 2. 24Vdc 3000RPM
3. With display & programmer

Features

- Wide sensitivity range
- Laser-based light source
- 4 Configurable alarm levels
- Purpose built Aspirator
- 4 In-line Inlet pipes
- Flow sensor for each inlet pipe
- Wide range DC power
- Low-cost maintenance
- Dual stage filter
- Easy access to filter cartridge
- 7 Software configurable relays
- Recessed mounting
- Multiple exhausts



VLP-000 LaserPLUS Detector

VLP-012 LaserPLUS Detector, programmer and display (**VLP-001** LaserPLUS with programmer)

VLP-002 LaserPLUS Detector and display

VLP-400 LaserPLUS Detector with fire OK LED

LaserPLUS Scanners - 7 & 12 Relay Output Variants

VESDA LaserPLUS is also available in a Scanner configuration, which allows the system to distinguish and identify the pipe carrying smoke, while sampling multiple sectors.
The VESDA LaserPLUS will continue to sample from all sectors to monitor the fire growth and maintain full protection.

Features

- Individual pipe annunciation
- Adaptive scan threshold
- Wide sensitivity range (0.005 to 20% obs/m)
- Laser based light source
- Configurable alarm levels
- Purpose built Aspirator
- 4 In-Line inlet pipes
- Flow sensor for each pipe inlet
- Low-cost maintenance
- Dual stage filter
- Easy access to filter cartridge
- Recessed mounting

Specifications

Operating Voltage	18 to 30Vdc
Operating Current [1]	240mA
Alarm Current [2]	300mA
Relay Outputs	7 or 12
Operating Temp	0°C to +39°C
Relative Humidity	10 to 95% (non-cond.)
Dimensions (HWD)	225x350x125mm
Weight [3]	4 kg**

1. No display or programmer
2. 24Vdc 3000 RPM
3. With display & programmer

VLS-214 FD7 Scanner, programmer and display with 7 relays
VLS-314 FD12 Scanner, programmer and display with 12 relays

VLS-204 FD7 Scanner and display with 7 relays
VLS-304 FD12 Scanner and display with 12 relays

VLS-200 FD7 Scanner
VLS-600 FD7 Scanner with Fire OK LED
VLS-300 FD12 Scanner
VLS-700 FD12 Scanner with Fire OK LED

Optional Remote Displays

A display module monitors the VESDA LaserPLUS detector. It reports a visual representation of smoke levels, and all alarm and fault conditions. The internal sounder warns personnel in the local area that an alarm threshold has been reached, or a fault has occurred. It has a 20 segment vertical bar graph, a 2-digit numerical display, an audible sounder and clear alarm and fault indicators. It also has 4 push buttons to control the detector and the mode of the display. Displays can be located at a convenient location - either within the detector module, or remotely on the VESDAnet. For monitoring convenience, multiple displays can be associated with a single detector.

Features

- Four alarm levels (Alert/Action, Fire 1 & Fire 2)
- 20 segment vertical bar graph
- Alarm threshold indicator (Alert, Action & Fire 1)
- Audio and visual indication
- Alarm indicators
- Informative fault indicators
- Multi-mode numeric display (defaults to smoke obscuration)
- Acknowledged push-button presses
- Multiple language supported
- Addressable to any detector

Specifications

Operating Voltage [1]	18 to 30Vdc
Module Only	
Operating Current	60mA
Alarm Current	80mA @ 24Vdc
In Remote Mounting Box	
Operating Current	90mA
Alarm Current	110mA @ 24Vdc
Operating Temp	0 to 39°C
Relative Humidity	10 to 95% (non-cond.)

1. When used in detector unit, remote unit or 19" rack

Scanner Displays
VRT-400 Remote scan display including 7 relays
VRT-700 Remote scanner display - no relays
VRT-800 Remote scanner display with 12 relays

LaserPLUS Displays
VRT-200 Remote display including 7 relays
VRT-600 Remote detector display- no relays
VRT-J00 Compact Display c/w 7 relays
VRT-K00 Compact Display no relays

VRT-100 Remote programmer

VRT-300 Remote VESDAnet socket

LaserPLUS Standard 19 Inch Sub-Rack Remote Display Assemblies

The 19" sub-rack is available as a mounting option, with 4 mounting slots for display or programming modules.

Technical Specification
Dimensions: 128 x 482 x 120 mm (HWD)

Part Numbers	
VSR-2000	19" Sub-rack with 1 detector display and 3 blanks
VSR-2210	19" Sub-rack, 2 detector displays, programmer and 1 blank
VSR-2221	19" Sub-rack with 3 detector displays and programmer
VSR-2222	19" Sub-rack with 4 detector displays

LaserPLUS Components for Ordering Custom Built Remote Display Sub-racks

Sub-rack configurations other than those available as standard can be supplied as custom built units. The sub-rack and cost of assembly are included in the VSR-CUSTOM.
The configuration of the custom built unit must be specified at time of ordering (eg. 2 x VSU-0 and 2 x VSU-2 configured as VSR-0022)
Note: The order of the numbers (eg. 0022) indicates the order in which the sub-units will be mounted in the sub-rack housing when looking from the front of the unit - from left to right

Module Numbers	
VSR-0	Blank Sub-unit
VSR-1	Programmer sub-unit
VSR-2	LaserPLUS display sub-unit +7 relays
VSR-3	VESDAnet Socket
VSR-4	SCANNER display sub-unit + 7 relays
VSR-5	Blank sub-unit with 7 relays
VSR-6	SCANNER with RTC + 7 relays
VSR-7	SCANNER display + RTC, no relays
VSR-8	SCANNER display + RTC+12 relays
VSR-9	DRP + RTC +12 relays
VSR-E	Blank SCANNER sub-unit + 7 relays
VSR-J	COMPACT display sub-unit + 7 relays
VSR-K	COMPACT display + RTC-no relays
VSR-V	LaserFOCUS
VSR-CUSTOM	Custom sub-rack housing incl. cost of custom building 4 VSU sub-rack units.

RTC = Remote Termination Card
DRP = Display Relay Processor

LaserPLUS Ancillaries

A variety of other ancillaries are available. Tyco Safety Products stock pipe and sampling points.

Part Numbers	
VHH-100	Hand held programmer and leads
E700-SPLR	Sampling point label
E700-SPDCL	Aspirating pipe label
VHX-0200	PC link HLI plus leads (MK2)
VSW-004	VConfig Basic software

Available on request

VSW-005	VConfig Pro software
VSW-002	Aspire Windows software

VESDA 24Vdc, 2A Power supply and charger

VHX-0200 PC-Link High Level Interface

The latest version of the VESDA High Level Interface supports the new Interrogation and Notification functionality of VSM3. Available for both new and existing sites, it is now possible for the HLI to dial out to a PC. The "dial out" option is user configurable allowing site specific configuration to ensure the most important warnings on VESDAnet are reported to the right people. The latest VESDA PC Link HLI interfaces between the VESDA and the PC. Each PC-Link HLI includes an RS-232 cable (from HLI to PC) and an RS-485 cable (from HLI to VESDAnet Socket). Using VConfig, VESDA's system configuration tool specifically designed to simplify set up of any VESDA system during commissioning and installation. It is available in two versions PRO and BASIC. By using the latest VConfig software to configure a VESDA system, it is now possible to dial into a remote VESDA network to check the system's status AND to set up the VESDAnet to dial out to a PC whenever an event, such as an alarm, is raised. This feature ensures that a remote operator has greater monitoring control over the protected environment by allowing him/her to access a site to check it's status as well as set the specific conditions on which the system should notify him/her of a potential fire situation. VConfig PRO has the ability to display smoke trend information from selected event log data to help determine optimum threshold levels. Both VConfig PRO and BASIC have been upgraded to support VESDA's new System Relay Module.

LaserPLUS Spares

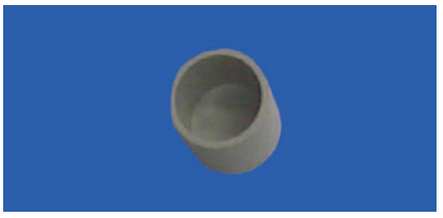
The following common VESDA LaserPLUS spares are kept in stock by Tyco Safety Products.
Other spares can be supplied as required.

Part Numbers	
VSP-005	Filter cartridge (spare) (shown at left)
VSP-002	Display (spare)
VSP-004	Scanner display (spare)
VSP-001	Programmer (spare)
VSP-019	Filter cover door (spare)
VSP-006	Spare detector chassis and manifold
VSP-008	Spare remote termination card 7 relays
VSP-009	Spare scanner chassis and manifold
VSP-014	Spare header termination card 7 relays
VSP-015	Spare aspirator fan
VSP-025	VSP-005 Filter Assy - pack of 20

VESDA Pipe and Fittings

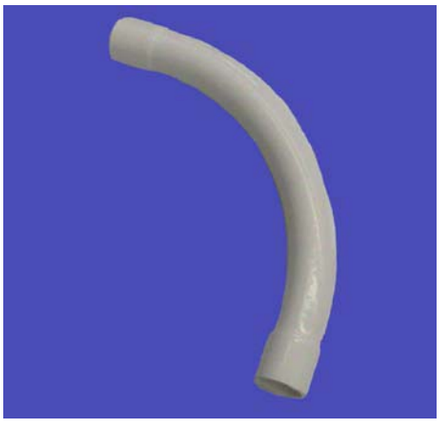
E700-CSC Capilliary Sampling Connector

E700-CT Capilliary Sampling Tube 8mm OD

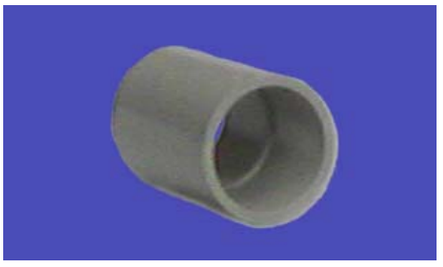


E700-EC End Cap - Not Drilled

E700-PC Pipe Clip - Single Point Fix

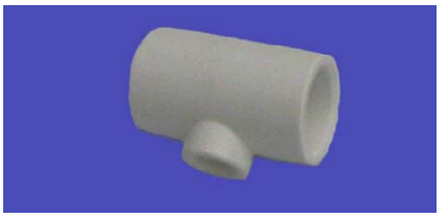


E700-LB Long Radius Bend 150mm



E700-PJ Pipe Junction Fitting

E700-SP Sampling Point - Mini



E700-TA Trunk Adaptor

E700-SPLR Sampling Point Label (1 per sheet)

E700-SB Small Radius Bend 90mm

E700-SRB Standard Base for HASP

E700-SPDCL Sampling Point Decal (200 per roll)

E700-P VESDA Pipe 4 metre x 10 Lengths (bell end)

Flame and Special Hazard Detectors

S200 Plus Triple IR Solar Blind Flame Detector

The MINERVA S200 PLUS flame detectors are the latest Infrared solar blind and multi-channel infra-red flame detectors with low power consumption and high false alarm immunity.
The MINERVA S200 PLUS range of advanced flame detectors is the most comprehensive range available.

Features

- Triple waveband infrared solar blind flame detection for optimum false alarm immunity
- Unrivalled black body rejection over a wide range of source temperatures
- Range adjustable to 50 metres for a 0.1m-2 petrol pan fire
- Discrimination of optical faults (dirty windows) from other faults by the built-in self test
- Housing designed for easy installation of cabling
- Flexible mounting and angular adjustment
- 3 x 20mm field cable entries
- IP66/67 housing designed for external use
- Rugged stainless steel ANC4 LM25 alloy housing and mounting bracket
- Operating temperature range of -40 to + 80°C
- Variable response times & sensitivity settings
- Remote self test and range setting
- True window test in detection area (ie not in the edge of the window)
- Terminals provided for Remote LED connection
- BASEEFA (CENELEC) certified
- Meets the requirements of EN54 Pt10
- FM, DNV and LRS certified
- Very low power consumption (0.35mA)
- Models available with Conventional or Analogue Addressable interface (requires 2 core cable only)
- Models also available with relay or 4-20mA outputs
- Patented dual filter solar blindness for complete solar blindness
- 100°field of view on IS versions
- 90° field of view on Flameproof versions

Unlike other flame detectors on the market the MINERVA S200 PLUS is available in both Intrinsically Safe (EEx ia) and Flameproof (EEx d) models.
The intrinsically safe models are suffixed by the letter " i " and meet the requirements of EN50020 part 7 and are BASEEFA certified EEx ia IIC T5. As part of an intrinsically safe circuit, it is suitable for zones 0,1 and 2 where group IIC gases or lesser hazards can be continuously present in explosive concentrations.
The flameproof models are suffixed by the letter "f" and meet the requirements of EN50018 and are BASEEFA certified EEx d IIC T6. The detectors are suitable for zones 1 and 2 where group IIC gases or lesser hazards can be intermittently present in explosive concentrations.
For information on flame detector test equipment, please refer to the detector test equipment section.

Specifications

Detector Material	Stainless Steel 316L
Dimensions (HWD)	167 x 167 x 89mm
Weight	4.5Kg
Gland Entry	3 x 20mm
Metal Parts	Bright Stainless Steel 316 (external & internal) to BS1449 Pt 2
Tag Label	Stainless Steel 316
Range	0.1m^2 petrol at 50m 0.4m^2 petrol at 60m
Response Time	Field Selectable 3,6 & 12s
Sensitivity	3 range settings
Relative Humidity	95% (100% intermittent)
Ingress Protection	IP66 and IP67

Part Numbers

S231i+	S231i+ Collective
S231f+	S231f+ Coll. Flameproof
516.037.015	S232f+ Collective FM Approv.
516.040.002	S261f+ Relay O/P
517.001.184	S/S Bracket assy
517.001.263	Weather Protection assy

Approvals

ATEX	Approved - BASEEFA02ATEX0185
BASEEFA	Approved models are suffixed '1'.
IECEX	Approved - BAS 05.0056
NSTC	Approved
LPCB	Approved
LRS	Approved
DNV	Approved
KFEIC	Approved
CSIRO	Listed - afp-1443
FPANZ	S231i+ - VF/338, S231f+ - VF/339, S261f+ - VF/340
MCA	Approved
FM	Approved models are suffixed '2'

Detector	Interface				Approvals					
					BASEEFA		FM	CSIRO/FPANZ	IECEX	ATEX
	Collective	4-20mA	Addressable	Relay	Ex ia	Ex d	Ex d			
S231i+	✓				✓			✓	✓	✓
S231f+	✓					✓		✓	✓	✓
S232f+	✓						✓		✓	✓
S241i+		✓			✓				✓	✓
S241f+		✓				✓			✓	✓
S261f+				✓		✓		✓	✓	✓
S262f+				✓			✓		✓	✓
S271i+	Contact	Tyco	Safety	Products	✓				✓	✓
S271f+	Contact	Tyco	Safety	Products		✓			✓	✓

IR6003/7 Mist and Smoke Detector

The IR6003 Beam detector is an intelligient device that has been designed to monitor a large area containing plant or equipment . The IR6003 can be supplied in different configurations to suit mist and smoke type hazards. The waterproof housing has an easy to fit bracket that allows simple installation and commissioning. The fascia of each unit has been equiped with an LED that flashes on fault condition and indicates steady on alarm.

Specifications

Operating Voltage	10 to 40V via UIM
Alarm Current	70mA (max.)
IR Source	Gallium Arsneide, 820nm
Operating Range	up to 50m
Weight	0.96 Kg
Ambient Temp	-10°C to +55°C
Dimensions (HWD)	125x165x165 mm
Protection	IP65
Approval	EEx iB IIB T5 BAS02ATEX2313

Part Numbers

01-33-23	Detector
01-33-32	Universal Module

Intrinsically Safe Detectors

Features

- Collective and addressable I.S. systems
- Suitable for worst case (EEx ia IIC T5)
- Tyco High Performance Optical (HPO) smoke detector
- Compatible with S231i+ plus flame detector
- Compatible range of I.S. callpoints

The System Designer must have completed an appropriate recognized course in Intrinsic Safety and be familiar with AS/ NZS 2381.1: 2005 and associated standards, test organizations, and the requirements of state and local authorities. Many Tyco products are ATEX certified, and it needs to be established beforehand that this certification is acceptable to the relevant regulatory authorities. Requirements can differ from region to region.

The probability of a flammable mixture being present is defined by a Zone Number. Flammable gases are classified in Groups and their minimum spontaneous ignition temperature is categorised by Class. Tyco Safety Products supplied equipment marked EEx ia IIc T5 would be suitable for use in worst case conditions, eg. Zone 0 (ia), Hydrogen (IIc), T5 (100°C). The Fire Alarm Equipment and Safety Barriers should be placed as near as possible to the containment wall of the Hazardous Area. This minimises the cable lengths between the barrier and the Hazardous Area and thus the capacity to store energy.

In order that an Installation will comply with the certification designated for each system it is essential that the certified devices are connected with cables of the specified limits. These limits have been certified for specific classifications of hazard in order that energy storage is limited.
The number of devices connected to the barrier and located in the Hazardous Area must always be limited to not more than the listed maximum.
When a mixture of devices is connected to any one zone the numbers must be reduced in proportion to the ratio of the load presented to the barrier.

MR601TEx Intrinsically Safe High Performance Optical Smoke Detector

The MR601TEX has been developed to overcome the slower response of the optical detectors to hot burning fires, by increasing the sensitivity of the optical detector when it is associated with a rapid change in temperature. In this way it is intended to become a detector which can cover some of the risks currently covered by ion chamber detectors. Smoke detectors will not detect burning alcohol or other clean-burning liquids which do not generate smoke particles.

Specifications	
Operating Voltage	11.5 to 13Vdc
Operating Current	110 µA (max.)
Alarm Current	30mA @ 16Vdc
Operating Temp	-20°C to +70°C
Relative Humidity	95% (non-cond.)
ATEX Certificate	BAS01ATEX11134X.
ATEX Code	Ex II 1 G
Cenelec Code	EEx ia IIC T5
Part Number	516.054.011

MDU601Ex Enhanced Point Type Carbon Monoxide Fire & Heat Detector

The MDU601EX detector combines the features of both the MU601EX detector and the MD601EX detector to provide a combined CO and Rate of Rise Heat Detector where the sensitivity of the CO detector is enhanced in response to a fast rate of change of temperature.

Specifications	
Operating Voltage	16 to 28Vdc
Operating Current	70 µA (max.)
Alarm Current	30mA @ 15Vdc
Operating Temp	-20°C to +70°C
Relative Humidity	90% (non-cond.)
ATEX Certificate	BAS01ATEX1134X
ATEX Code	Ex II 1 G
Cenelec Code	EEx ia IIC T5
Part Number	516.016.001

MU601Ex Intrinsically Safe Point Type Carbon Monoxide Detector

The CO Fire detector is a unique general purpose fire detector which provides very early warning of slow smouldering fires. Ideal for sleeping risks, the CO fire detector is also well suited to many applications where heat detection is insufficient but smoke detection causes false alarms. As CO travels more freely than smoke, the positioning of CO fire detectors is more flexible. This feature is particularly useful in large complex structures such as atria and warehouses, where positioning of smoke detectors is difficult.

Specifications	
Operating Voltage	18 to 32Vdc
Operating Current	70 µA (max.)
Alarm Current	33 to 72mA
Operating Temp	0°C to +50°C
Relative Humidity	90% (non-cond.)
ATEX Certificate	BAS01ATEX1134X
ATEX Code	Ex II 1 G
Cenelec Code	EEx ia IIC T5
Part Number	516.058.002

MD601Ex/MD611Ex Intrinsically Safe Heat Detectors

Where environmental conditions rule out the use of smoke detectors, MD601Ex/MD611Ex heat detectors may provide an acceptable, though less sensitive, alternative. For general use (particularly where the ambient temperature may be low) a 'Rate-of-Rise' (ROR) heat sensor is preferred. These detectors react to abnormally high rates of change of temperature and provide the fastest response over a wide range of ambient temperatures.
A fixed temperature limit is incorporated in these detectors. In kitchens and boiler rooms etc, sudden, large changes in temperature are considered 'normal'. Fixed temp. [static] detectors should be used in this case.

Specifications	
Operating Voltage	18 to 32Vdc
Operating Current	100µA (max.)
Alarm Current	5 to 80mA
Operating Temp	-20°C to +70°C
Relative Humidity	95% (non-cond.)
ATEX Certificate	BAS01ATEX1134X
ATEX Code	Ex II 1 G
Cenelec Code	EEx ia IIC T5
Part Numbers	
516.052.051	MD601EX Collective ROR Heat Detector
516.052.041	MD611EX Collective Fixed Temp Heat Detector

601FEx Infrared Flame Detector

The 601FEx point type flame detectors are part of the 600 series of collective detectors. The 601FEx is a full featured solar blind flame detector for indoor use. It has a high degree of false alarm immunity. The 601FEx and it is designed for connection to a conventional zone of point type fire detectors that may include any mix of detection technologies. The 601FEx is an intrinsically safe version intended for use in hazardous atmospheres and must be connected via a suitable isolator or shunt diode safety barrier in a certified Intrinsically Safe system.

Specifications	
Operating Voltage	16 to 28Vdc
Operating Current	300 µA (max.)
Alarm Current	30mA @ 15Vdc
Operating Temp	-20°C to +70°C
Relative Humidity	90% (non-cond.)[1]
Range	0.1m^2 n-heptane @ 20m
	0.4m^2 n-heptane @ 50m
Field of View	100°
ATEX Certificate	BASEEFA03ATEX0422X
ATEX Code	Ex II 1 G
Cenelec Code	EEx ia IIC T5
Part Number	516.600.066

1. 90% RH continuous; 99% RH (non-cond.) intermittent operation

MUBEX Detector Bases and Ancillaries

MUBEx Base
The base is classed as a simple apparatus, the detectors are certified:
ATEX Ex II 1 G, certificate no. BAS10ATEX1134X

Part Numbers	
517.050.610	MUBEx Base for Ex Detectors
517.050.023	5BEx Base for Ex Detectors

T54B Probe Type Heat Detector

Constructed from stainless steel, the T54B is an extremely rugged heat detector that can be used to detect fires in the harshest of environments. The T54B can be used in environments with ambient temperatures up to 280°C and, being hermetically sealed, is impervious to most contaminants. The T54B is a simple device and therefore suitable for use in intrinsically safe areas when used with a suitable I.S. barrier. For reliable operation, it is recommended that T54B detectors have set points 20°C or 20% (whichever is higher) above the maximum temperature they will be exposed to in normal operation. Preferred factory preset temperatures range from 60° to 250°C; with normally open contacts. Other temperatures and normally closed contacts are available by request.

Part Numbers	
T4E60X	T54B Heat Detector - 60°C
T4E90X	T54B Heat Detector - 90°C
T4E100X	T54B Heat Detector - 100°C
T4E145X	T54B Heat Detector - 145°C

Specifications	
Operating Voltage:	32VAC to 32Vdc
Switching Current:	5 to 200mA
Contact Resistance:	<1 ohm
Actuating Temp.:(preset)	60 to 240°C
Fixed Temp. Only:	Type E
Accuracy:	+ or - 5%
Ambient Temp.:	-40 to +280°C
Relative Humidity:	100% RH
Thread Size	M20x1.5mm
Protection Category:	IP67
CSIRO ActivFire Listed	afp-1612
FPANZ Listed	VF/214

ZAU401 Zone Adaptor Unit

The ZAU401 (Rev 2) can be thought of as a single zone circuit module that can be added to different panels to make them compatible with specific detectors.
The AZC characteristics of the ZAU401 make it particularly suitable for Intrinsically Safe applications when used with I.S. barriers. Refer to page 40 for further information.

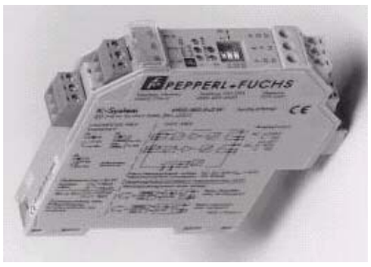
Part Number	
PA0838	ZAU401

Intrinsically Safe Barriers

The following section relates to a range of intrinsically safe barrier and isolator equipment for use with Tyco Safety Products manufactured fire detection systems. On all issues of intrinsically safe systems design, please refer to all the relevant product manuals for guidance.

Galvanic Barriers

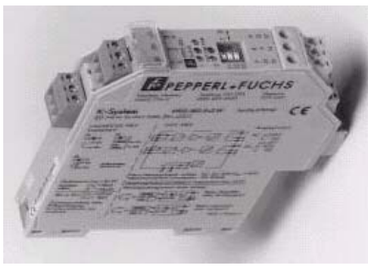
KFD0-Ex151



This device's channel (4 terminals per channel) functions like a "DC current isolator". It has reverse polarity protection. The input and output are galvanically isolated from each other. These units are designed for the connection of fire detectors (smoke and/or heat detectors etc). Their increased current range and the higher accuracy allow for differentiation between normal operation, fire alarm, lead breakage and short circuit currents in the safe area. They may also be used for controlling I/P converters. A separate power supply with auxiliary power is not required. Due to the input voltage limiting of 24V, the maximum voltage output is 21V.

Part Number	
KFD0-Ex151	Single Channel Output EEx ia IIC Device installation permissible in zone 2 Polarity reversal protected Accuracy 1%

KFD0-Ex251



Each channel (4 terminals per channel) functions like a "DC current isolator". Both channels have separate reverse polarity protection. The input and output are galvanically isolated from each other. These units are designed for the connection of fire detectors (smoke and/or heat detectors etc). Their increased current range and the higher accuracy allow for differentiation between normal operation , fire alarm, lead breakage and short circuit currents in the safe area. They may also be used for controlling I/P converters. A separate power supply with auxiliary power is not required. Due to the input voltage limiting of 24V, the maximum voltage output is 21V. This 2 channel version allows for the connection of 2 independent circuits in a single housing.

Part Number	
KFD0-Ex251	Dual Channel Output EEx ia IIC Device installation permissible in zone 2 Polarity reversal protected Accuracy 1%

KFD2-STC4-Ex1

SMART transmitter power supplies provide a 2- or 3-wire SMART transmitter and transfer the analogue values. Digital signals may be superimposed on the analogue values, which will transferred bidirectionally.

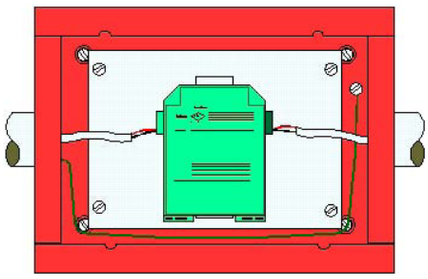
An internal resistor at terminal 9 is available, which may be used to increase the AC impedance for the HART signal. SMART transmitter power supplies are delivered with terminal type KF-STP-**. Jacks are integrated in these terminals for the connection of the hand-held units.

This device replaces the KFD0-EX130 single channel barrier.

- 1-channel
- Device installation permissible in Zone 2
- Input EEx ia IIC; Uo = 25.4 V
- Galvanically isolated output
- 24 Vdc supply voltage
- SMART capable up to 7.5 kHz (-3 dB)
- EMC acc. to NAMUR NE 21
- Up to SIL2 acc. to IEC 61508
  Input 0/4 mA to 20 mA
  Output 0/4 mA to 20 mA

Part Number	
KFD2-STC4-Ex1	Single Channel Output EEx ia IIC 24Vdc supply voltage Output maximum 1kOhm load

Simplex 2081-9062/9063

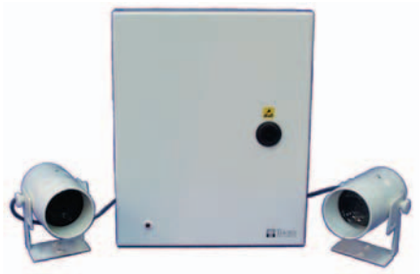


Simplex Intrinsically Safe Modules are for use with FM Approved Simplex control panels to make initiating device circuit wiring safe for use in locations where hazardous concentrations of flammable gases or other materials may exist. The intrinsically safe module is an isolated, power limited barrier that limits the output current to a level below ignition for atmospheres defined by NEC Articles 500-517 for Classes I, II, & III, Divisions 1 & 2, Groups A, B, C, D, E, F & G.

Specifications	
Input Voltage	4 to 35Vdc
Input Current	40mA (max.)
Output Voltage (VIN<23.7)	VIN - (400xIIN) - 0.7V
Output Voltage (VIN>23.7)	VIN - (400xIIN)
Output Current	≤40mA Transfer ≤65mA Short cct
Operating Temperature	0°C to 49°C
Relative Humidity	0 to 85% (non-cond)
Part Numbers	
2081-9062	Single Channel
2081-9063	Dual Channel
2975-9218	Cabinet
2081-9061	Installation Kit

Beam Smoke and Linear Heat Detectors

Fireray 2000



The Fireray 2000 is an active infrared smoke detector. The system comprises of three base elements ie. a transmitter, receiver and Control Unit. Analysis of the modulated infrared beam by the Control Unit determines whether smoke is present, and if so generates an alarm signal.
Where the beam path is less than 10 metres or access to the opposing wall is restricted or wiring to one of the heads is difficult, the Fireray 2000 should be configured for retroreflective operation.
Note: For beam ranges of less than 10 metres, use a retro-reflective configuration to avoid receiver saturation.

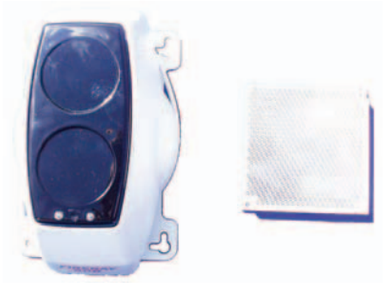
Features

- Range 5 metres up to 100 metres
- Area coverage up to 1400m^2
- Selectable sensitivity
- Self-check and automatic compensation
- Manual or automatic reset
- Suitable for both conventional and addressable fire systems
- Low current consumption
- Flexible system design options
- Robust metal construction
- Designed to conform to AS 1603.7-1996

Specifications	Fireray 2000
Operating Voltage	11.5 to 28Vdc
Operating Current	<13 mA
Alarm Current	<20mA
Operating Temp °C	-10 to +55
Relative Humidity	up to 95% (non-cond.)
Enclosure	IP54
Dimensions (HWD)	
Control Unit	260x210x80mm 2.25kg
Tx/Rx Units	95x75x115mm 0.4kg
CSIRO ActivFire Listed	afp-1596

Part Numbers	
515484	Spare Transmitter
515485	Spare Receiver
515487	Spare Main PCB
920450	Fireray 2000 UL Approved (comprising Transmitter, Receiver, Control Box)
516.015.007	Retro Reflector 100x100mm
516.015.008	Fireray 2000 Alignment Tool
516.015.009	STI9625 Detector Guard

Fireray 50/100R



The Fireray 50/100R is a reflective infrared beam smoke detector comprised of two base elements: a combined infra-red transmitter and receiver in a common housing and a reflective prism. The units electronics analyse the reflected beam from the prism for smoke and generates an alarm if a pre-determined level is reached.

Features

- Range 5 to 50 metres (50R)
- Range 50 to 100 metres (100R)
- Area of coverage up to 750m^2 (50R), 1500m^2 (100R)
- Selectable sensitivity
- Self-check and automatic compensation
- Manual or Automatic Reset
- Suitable for both Conventional and Addressable Systems
- Low current consumption
- Flexible System Design Options
- Robust ABS Construction
- Designed to Conform to BS5839 Part 5, EN54 Part 12, UL and VdS.

Specifications	Fireray 50/100R
Operating Voltage	10.2 to 30Vdc
Operating Current	<4mA @24Vdc
Alarm Current	15mA
Operating Temp °C	-30 to +55
Relative Humidity	up to 95% (non-cond.)
Enclosure	IP50
Dimensions (HWD)	210x130x120mm
Weight	0.7kg
Not CSIRO ActivFire Listed	

Part Numbers	
516.015.011	Fireray 50R 5 to 50 m
516.015.012	Fireray 100R 50 to 100m

FW68/105/180

Fire Wire is a heat sensitive cable that provides continuous detection over long distances. Available in a range of actuation temperatures (from 68°C to 180°C), Fire Wire is ideal for heat detection in storage racks, conveyors, cable trays and other situations where it is desirable that detection is always close to potential sources of fire. Fire Wire is a twin conductor cable protected by a rugged outer sheath. The copper-covered steel conductors are separated by temperature sensitive insulation and twisted together. When Fire Wire cable is exposed to sufficient heat, the heat sensitive insulation melts allowing the two conductors to touch, thus signalling an alarm. When using Fire Wire it is important to ensure that it is not affected by localised hot spots. Before selecting an actuating temperature for a particular area, determine the worst case maximum ambient temperature for that area. As it is a simple device, the FW series can be used in Zone 0 areas when connected to a suitable intrinsically safe barrier.
FW68/105/180 is available only in multiples of 100m lengths.

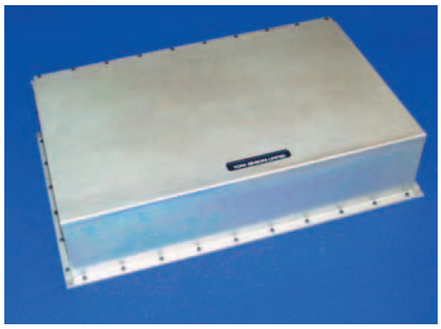
Note that FW68 is suitable for indoor use only. Whilst FW105/180 may be used in external applications, it must be protected from direct sunlight.

Part Numbers	
FW68	68°C Sensor Cable
FW105	105°C Sensor Cable
FW180	180°C Sensor Cable
4300	Junction Box

Specifications		
Operating Voltage (max)	32VAC or 115Vdc	
Alarm Current (max) [1]	300mA	
Conductor Loop Resist.	100 Ohm/km	
Operating Temp °C	Ambient	Alarm
FW68 [2]	-65 to +45	+61 to +70
FW105 [3]	-65 to +70	+97 to +113
FW180 [3]	-65 to +105	+168 to +180
Relative Humidity	Up to 100% (non-cond)	
Detection Time (approx.)		
FW68	4 seconds	
FW105	10 seconds	
FW180	20 seconds	
Bend Radius	50mm minimum	
CSIRO ActivFire Listed [4]	afp-821 (FW68)	

1. Must be externally limited
2. FW68 is suitable for internal use only
3. FW105 & 180 is suitable for use in external applications when shielded from direct sunlight
4. With 4300 Junction Box every 100m

Optical Fibre Temperature Sensing



This new technology uses a laser light source to launch light signals into an optical fibre. As pulses travel down the fibre, energy is lost through scattering. A fraction of the scattered signal is retained within the fibre. A portion of this is directed back along the fibre towards the laser source - this signal is called backscatter. Part of the back scatter signal (Raman Scattering) is used to provide accurate remote temperature measurements at hundreds of points along the fibre.
The system uses standard communications grade optical fibre of the 62.5/125 graded index multimode type. The temperature range is predominantly a function of the coating used to protect the optical fibre as the fibre itself is well behaved over a temperature range from -50°C to approximately 300°C.
Optical fibre itself offers several advantages as a sensing medium. The signals are immune to electromagnetic interference thereby ensuring integrity of readings from electrically noisy areas. As no electrical current is used in the sensing fibre and the fibre is relatively inert and dielectric (non-conducting) medium, it is safe technology to use in hazardous environments.

Features

- Fibre optic sensor loop up to 2km or 4km
- Continuous temperature profiles of temperature on a PC
- Programmable functions
- Programmable number of fire detection zones
- Multiple and programmable Alarm levels per fire detection zone
- Variable rate of rise function
- Unrivalled response times
- Optional outputs
- Modbus Serial Data
- Direct to PC
- Volt free contacts
- Insensitive to EMI
- Intrinsically safe sensor
- Uses standard communications grade optical fibre
- Choice of cable construction
- Cable construction for extreme environments
- High System Integrity
- Automatic failure mode analysis
- Loop break recovery operation
- Diagnostic capability
- Fire progression monitoring
- No cable maintenance
- Modem for remote communications

Specifications

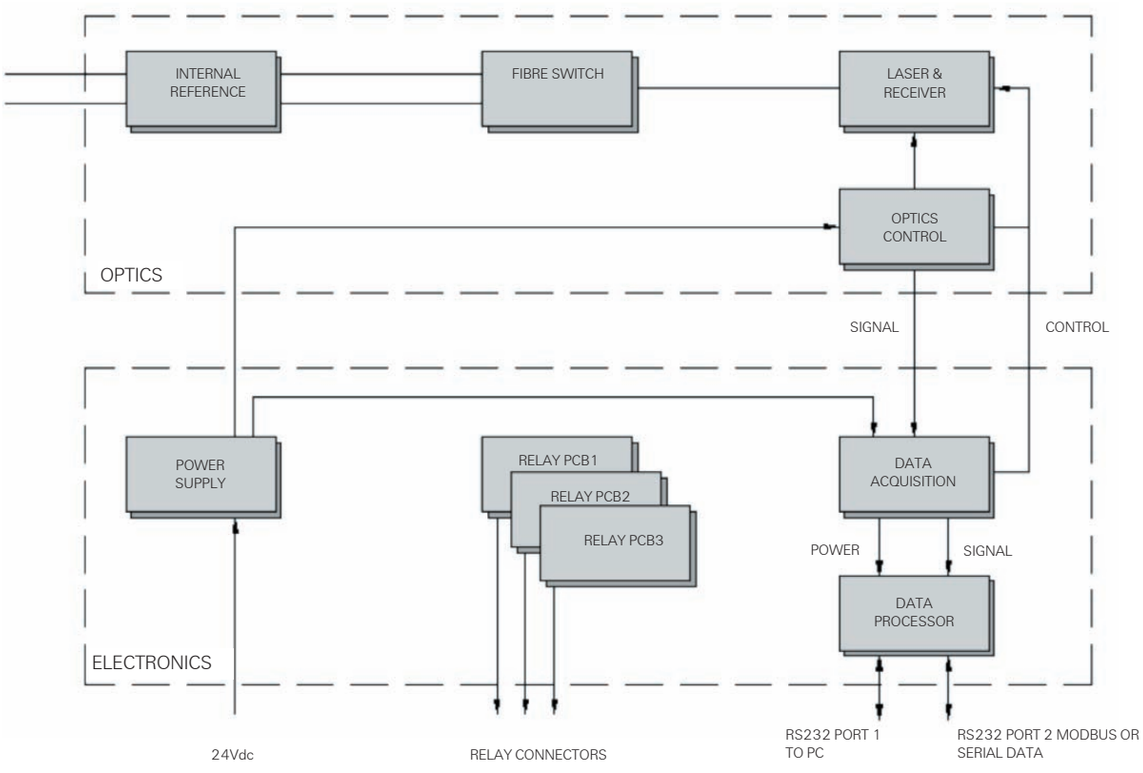
Supply Voltage	24Vdc (-6/+12Vdc)
Power Consumption	20W max
Supply Current	<1A
Fuse Rating	<2A (anti-surge)
Fibre	62.5/125 graded index multi-mode
Operating Temp	0°C to +40°C
Storage Temp	-40°C to +65°C
Relative Humidity	0 to 95% (non-cond.)
Compliance	
Class 3a Laser	IEC 825 (1990) BS7192(1989) ANSI Z136.2(1988)
EMC	Directive 89/336/EEC
Low Voltage	Directive 72/2/EEC

System Components

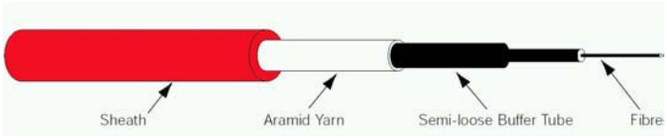
- Control Unit - available as:
  - Cabinet, including 32 relays and PSU in both 2km or 4km model
  - 19in Rack Mounting including 32 relays, in both 2km or 4km model
- Sensor Line thermoplastic sensor cable in 1, 2 or 4.4km reel
- Sensor Tube stainless steel sensor cable in 1, 2 or 4.4km reel
- For further information and pricing, contact Tyco Safety Products

Important The Fibre Optic Linear Heat Detection products are the single highest value stock coded fire detection products available from Tyco Safety Products. The Control Unit contains complex high precision components including a single-mode laser which can be seriously damaged or misaligned if subjected to undue mechanical shock or ingress of dust etc.

Functional Block Diagram

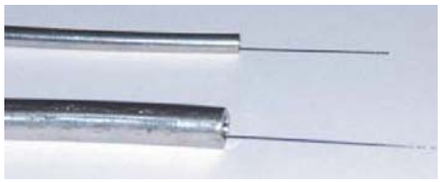


Standard communications grade optical fibre of the 62.5/125 graded index multimode type is used. The temperature range is predominantly a function of the coating used to protect the optical fibre as the fibre itself is well behaved over a wide temperature range. Special coatings have been tested down to -190°C and up to 460°C (metallic - available upon request) performance of the standard type is detailed overleaf. Optical fibre itself offers several advantages as a sensing medium. The signals are immune to electromagnetic interference thereby ensuring integrity of readings from electrically noisy areas. As no electrical current is used in the sensing fibre and the fibre is a relatively inert and dielectric (non-conducting) medium, it is safe technology to use in hazardous environments.



Sensor-Line
Outer sheath 3.6mm dia., Aramid fibres for strength, Optical fibre in gel filled tube

Specifications	
Nominal Cable Dia.	5mm
Weight	2.3kg/m
Min. Bending Radius	63mm
Max. Tensile Load	100N
Operating Temp.	-20° to +70°C (continuous)
Installation Temp.	>10°C



Sensor-Tube
Stainless steel tube 3.2mm dia. / 6.4mm dia.

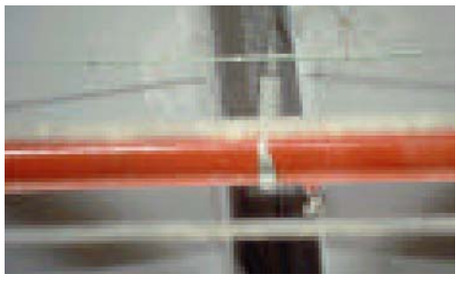
Specifications	**3.2 mm**	**6.4 mm**
Nominal Cable Dia.		
Wall Thickness	0.5 mm	0.9 mm
Weight	33 kg/km	121kg/km
Min. Bending Dia.	150 mm	150 mm
Max. Tensile Load	1971N	7080N
Operating Temp.[1]	-40° to +90°C (continuous)	
Max. Length (2 fibre)	2 km	10 km

1. For 125µm multimode fibre with acrylate coating, max. temp. is 150°C for 48 hrs. For polyimide coating, operating temp. is -185°C to +400°C.

Cable Options

FEATURES	BENEFITS
HIGH SYSTEM INTEGRITY - LOOP BREAK RECOVERY	The system can be set to operate in either single ended or loop mode without any additional costly hardware. The system continuously monitors the integrity of the loop and continues to operate in the event of a cable fault. The system is designed with an automatic loop break recovery operation.
FIBRE OPTIC SENSOR LOOP UP TO 2km or 4km	Very long distance (large areas) can be monitored using a single length of heat sensing cable. The hot spot identification on a 2 km length of fibre optic sensing cable, is to within 1.25metres.
PROGRAMMABLE RELAY CONTACTS	30 zonal relays ensure that the system can provide sufficient alarm notifications – typically directly to any Fire Alarm Control Panel. 2 relay contacts are reserved for system and sensor fault.
MODBUS OUTPUT PORT	Permits connection of the system to any PLC (programmable logic controller) or DCS (distributed control system) using industry standard communications, thereby providing a very flexible system topology.
AUTOMATIC FAILURE MODE ANALYSIS	Cable faults are detected to an accuracy of ±1.25m. The control system is continuously monitoring and a full syntax of fault information is provided with the system.
SAFE LASER SOURCE	In the event of a cable failure, where the laser light source may be exposed, the laser light is determined a safe source in accordance with IEC825.
DIAGNOSTIC CAPABILITY	Enables interrogation of the system to determine system status.
MODEM INTERFACE	By using a remote PC with a dial up connection to the host PC on site, it is possible for system to be accessed from a remote location to help assist with on-line technical support.

- Low thermal mass for rapid response to temperature
- Low smoke halogen free jacket, with excellent flame retardancy. Suitable for all indoor applications
- Stainless steel clad fibre optic cable suitable for all harsh area applications
- Strong, lightweight and flexible
- Designed for ease of installation

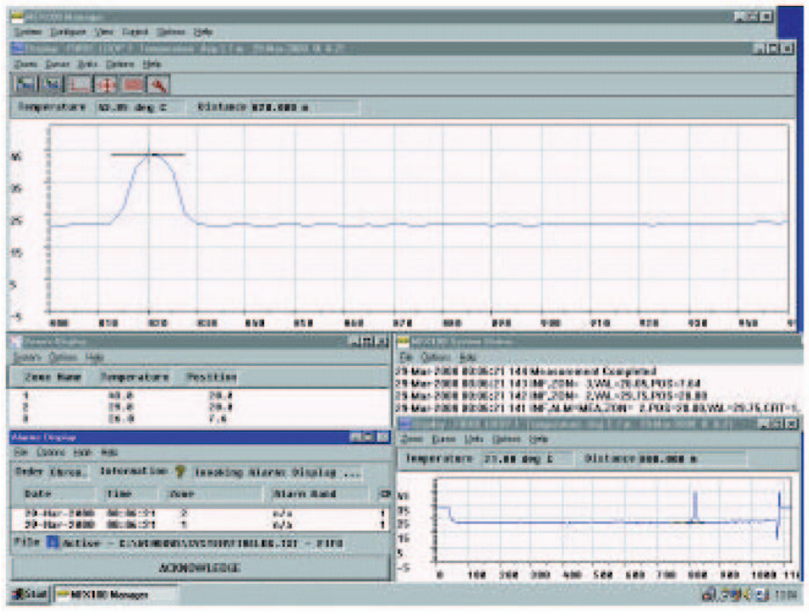


Summary of Cable Features

FEATURES	BENEFITS
CONTINUOUS TEMPERATURE PROFILES	By connecting a PC, it is possible to monitor the entire sensing cable length to view the current status of the alarm system which assists in easily determining the proximity to an alarm state.
VARIABLE RATE OF RISE AND FIXED TEMPERATURE FUNCTION	Variable rate of rise and fixed temperature alarm levels, ensure a flexible heat detector sensitivity which can be tailor made to give an early warning signal, dependant on the fire risk.
PROGRAMMABLE NUMBER AND LENGTH OF FIRE DETECTION ZONES	A single cable length can be divided into multiple fire detection zones thereby giving increased system flexibility whilst keeping cable lengths to a minimum.
MULTIPLE & PROGRAMMABLE ALARM LEVELS PER FIRE DETECTION ZONE	Pre-alarm warnings can be given, prior to a full alarm condition, thus helping to ensure minimal plant downtime.
UNRIVALLED RESPONSE TIME	The sensing element is designed to respond very quickly to changes in ambient temperature thus ensuring an early warning heat detection system.
DIRECT PC CONNECTION	This enables a user to view the temperature profile for the risk. It also provides an interface to allow adjustment of the alarm trip levels - this is access level protected.

Fibre Optic Temperature Sensing provides several output options, which operate concurrently to give system design flexibility. Thirty programmable relays can be used to map out alarm zones and signal into a fire panel, either directly or via addressable interface modules such as the MX CIM800. Protocol definition data is provided to enable the Control Unit to be connected via a PLC to a centralised control and monitor information centre, eg. SCADA. The full 200-zone capability of the system can be exploited using the MODBUS protocol. The Functional Block Diagram on page 79 shows typical system architecture.

Sensa Manager Software
The Sensa Manager software is used as an interface to the Control Unit. By using this software, it is possible to configure the unit to suit the particular fire risk. The system is password protected and can be set up to provide a continuous display of system status on a dedicated PC. Useful tool for commissioning and technical support.



Temperature Profile & Alarm Display
Illustration of the temperature profile display for the entire fibre length and also a numerical display for the individual zonal temperatures.

Detector Test Equipment

Part Numbers

517.001.230	SOLO100 Telescopic pole 1.26m to 4.5m
517.001.226	SOLO101 Extension tube 1.13M long for use with S100 Telescopic extension pole
517.001.264	SOLO610 Protective Carry/ Storage Bag for Solo Detector Test Kit

Part Number

517.001.255	SOLO330 Aerosol dispenser for use with all detector ranges. Connects directly to S100/S101 poles

Part Numbers

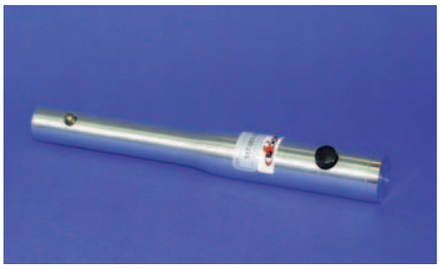
X461	SOLO461 Cordless heat detector tester kit including SOLO460 tester, SOLO720 battery batons and SOLO724 charger. (Connects directly to SOLO100/101 poles).
517.001.239	SOLO760 Spare battery baton for use with SOLO 450/460 tester
517.001.242	SOLO461 Spare battery
517.001.243	SOLO724 Spare mains/car battery charger for SOLO720 battery baton
X811	SOLO811 Smoke detector test kit including SOLO330 aerosol dispenser, SOLO200 detector removal tool, SOLO100 pole and SOLO610 equipment bag

Part Number
X500
Tyco Test Smoke 120g can

Part Number
517.001.262
CO Detector Test Gas, 120g can

Part Number

X811	Smoke Detector test kit

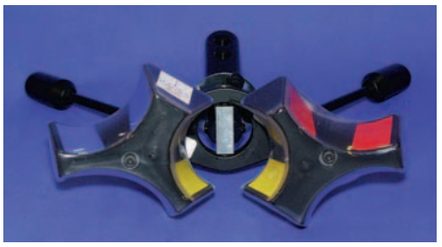


Part Number

517.001.224	SOLO704 Adaptor tube B - adapts SOLO100/101 pole sets for TYCO detector changers and testers

Part Number

517.050.004	M69 Detector changer for use with M600/M900 series. Requires Adaptor B and SOLO 100 pole



Part Number

517.001.240	SOLO200 Universal detector changer for use with various manufacturers detectors - not suitable for M600/900 series low profile. Connects directly to SOLO100/101 poles

Part Number
X60
Brandax KS Smoke Cartridge, 6 430g cartridges, dia 90x110mm, 400m^3 smoke vol, 300-360s burn time

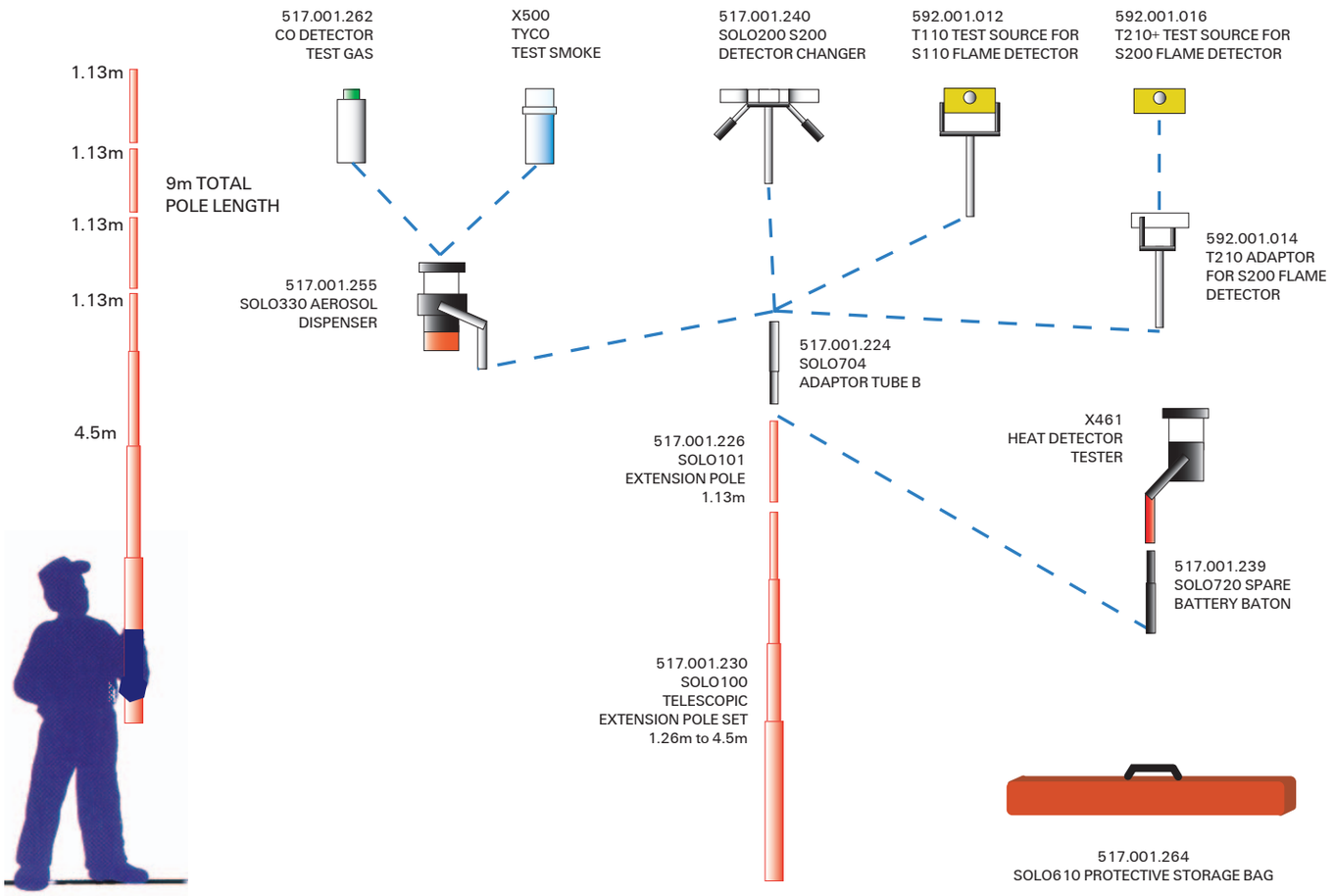
Part Number
X61
Brandax VS Smoke Cartridge, 5 60g cartridges, dia 32x62mm, 55m^3 smoke vol, 180-240s burn time

Part Number
X62
Ventilax Smoke Cartridge, 5 60g cartridges, dia 18x62mm, 17m^3 smoke vol, 180-240s burn time

Part Number
X65
Splintax Smoke Matches, 20 1g matches, 0.7m^3 smoke vol, 25s burn time

Part Number
X66
Miniax Smoke Cartridge, 10 3g cartridges, dia 14x32mm, 2.5m^3 smoke vol, 40s burn time

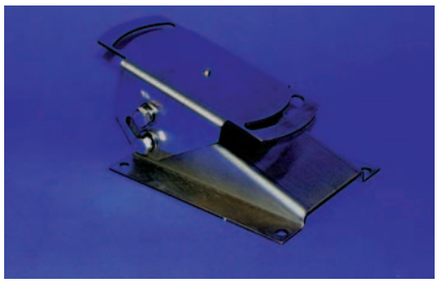
SOLO Test Equipment for Point & Flame Detectors



S200 Series Test Equipment & Accessories

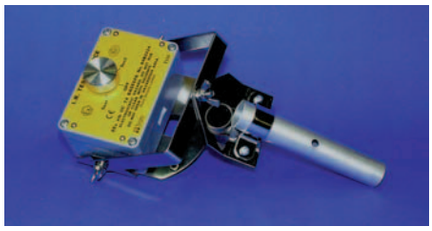
Part Number
592.001.016 T210+ Test Source for use with SOLO 704 Adaptor Tube B and SOLO100/101 poles

Part Number
592.001.014 T210+ Adaptor for S200 Detectors

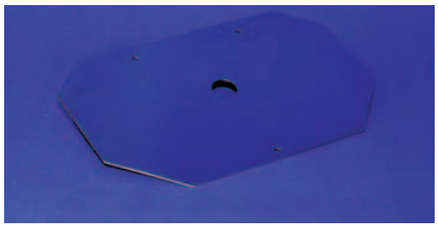


Part Number
517.001.184 S/S bracket assy for with all S100/200 Series detectors

S100 Series Test Equipment



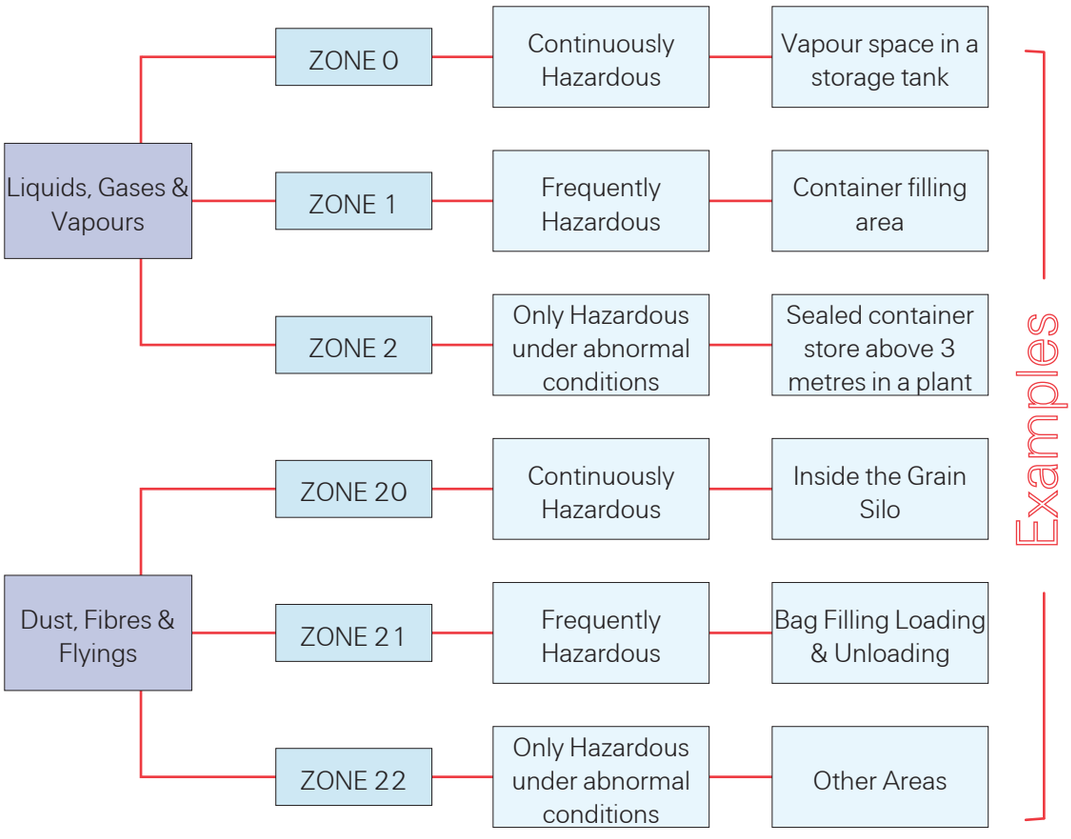
Part Number
592.001.012 T110 Test Source for use with SOLO 704 Adaptor Tube B and SOLO100/101 poles



Part Number
592.001.005 T110 Adaptor for S131/161 Detectors

Part Numbers
592.001.005 T110 Adaptor for S131/161
592.001.010 T110 PP9 Battery and Charger kit
592.001.012 T110 Test Source for use with SOLO 704 adaptor tube B and SOLO100/101 poles

Hazardous Area Classification



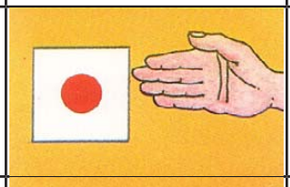
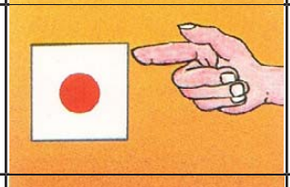
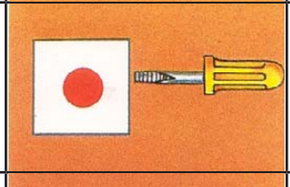
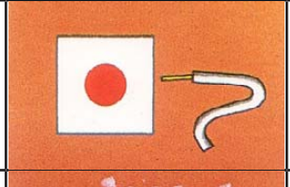
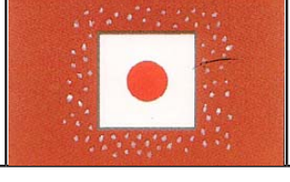
Comparative List of Australian and International Standards

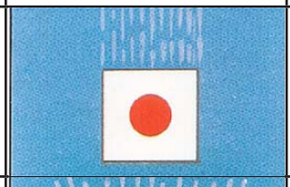
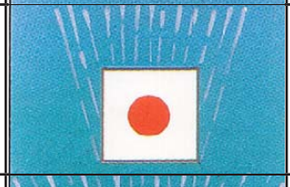
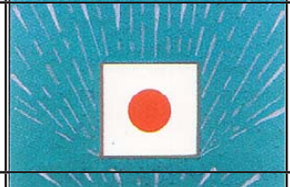
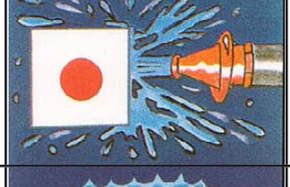
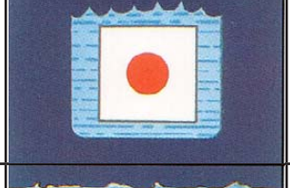
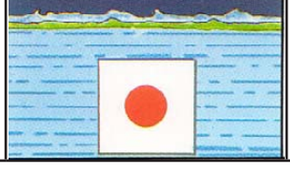
Equipment Standards				
Standard	Australia	IEC	CENELEC	UK
Area Classification	AS 2430	600 79-10	-	BS5245.2
General Requirements	AS 2380.1	600 79-0	EN50 014	BS5501.1
Ex d Flameproof	AS 2380.2	600 79-1	EN50 018	BS5501.5
Ex p Pressurisation or Purging	AS 2380.4	600 79.2/79.13	-	-
Ex e Increased Safety	AS 2380.6	600 79-7	EN50 019	BS5501.6
Ex n Non-Sparking	AS 2380.9	600 79-15	Draft PREN50 021	BS6941
Ex i Intrinsic Safety	AS 2380.7	600 79-11	EN50 020	BS5501.7
Ex m Encapsulation	AS 2431	600 79-18	-	-
Ex s Special Protection	AS 1826	600 79.0 C1.25.6	-	-
Ex v Ventilation	AS 1482	-	-	-
Dust Excluding Ignition Proof (DIP)	AS/NZS 61241	-	-	-
Cable Glands	AS 1828	No Standard	-	-

Installation Standards				
Standard	Australia	IEC	CENELEC	UK
General Requirements	AS 2381.1*	600 79-14	-	BS5345.1
Ex d Flameproof	AS 2381.2*	600 79-14	-	BS5345.3
Ex p Pressurisation & Ex pl Purging	-	600 79-14	-	-
Ex e Increased Safety	AS 2381.6*	600 79-14	-	BS5345.6
Ex i Intrinsic Safety	AS 2381.7*	600 79-14	-	BS5345.4
Ex n Non-Sparking	AS1076.9*	600 79-14	-	BS5345.7
Ex s Special Protection	AS 1076.13*	600 79-14	-	-
Ex m Encapsulation	-	-	-	-
Dust Exclusion Ignition Proof (DIP)	AS/NZS 61241	-	-	BS5345.10

* Note: In Australia the SAA Wiring Rules (AS 3000) also apply in addition to the standards shown above

International Protection Ratings

	TEST	PROTECTION
X	No test applied	No specific protection
0	No test applied	Inherent degree of protection
1		Protected against solid objects larger than 50mm (e.g. accidental contact with hand)
2		Protected against solid objects larger than 12mm (e.g. finger of the hand)
3		Protected against solid objects larger than 2.5mm (e.g. tools, wires)
4		Protected against solid objects larger than 1mm (e.g. fine tools and wires)
5		Protected against dust. Prevent entry in sufficient quantity to interfere with satisfactory operation
6		Completely protected against dust

	TEST	PROTECTION
X	No test applied	No specific protection
0	No test applied	Inherent degree of protection
1		Protected against drops of water falling vertically
2		Protected against drops of water falling at up to 15° from the vertical
3		Protected against spraying water at up to 60° from the vertical
4		Protected against splashing water from all directions
5		Protected against jets of water from all directions
6		Protected against jets of water of similar force to heavy seas
7		Protected against the effects of immersion
8		Protected against the effects of submersion

To Australian Standard AS1939-1990 'ClassifIcation of Degrees of Protection' provided by enclosures for electrical equipment.

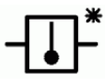
Refer to AS 60529-2004 Degree of protection provided by enclosures (IP Code) for test requirements for the IP classifIcation of enclosures.

Symbols

Heat detector (exposed or ceiling mounted)

Heat detector in concealed space

Heat detector within air duct



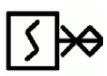
Line detector

Smoke detector (exposed or ceiling mounted)

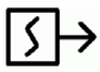
Smoke detector in concealed space

Smoke detector within air duct

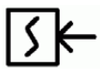
Smoke detector with sampling device



Aspirated smoke detector system



Optical beam type smoke detector (transmitter)



Optical beam type smoke detector (receiver)

Heat alarm

Smoke alarm

Electromagnetic holder

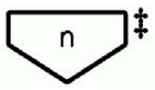
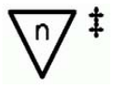
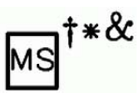
Remote visual indicator

Flame detector

Gas fire detector

End-of-line device

Symbols

FIP	Fire indicator panel		Loud speaker
SIP	Sub indicator panel		Device address
RCE	Remote control equipment		Alarm zone
RP	Repeater panel		Circuit wiring
AD	Addressable device	FS	Flow switch
BAT	Storage battery	PS	Pressure switch
	Fire alarm bell		Manual call point
	Visual warning device	MV	Monitored valve
	Alarm sounder		Multi-Sensor detector

* Heat detector type (eg. TA, TB, etc for AS 1603.1 detectors ro A1 , B etc for AS 7240.5 detectors)

Ä Type of smoke detector eg. I = Ionisation, P = Photoelectric,

n Substitute loop and device number or zone number as applicable

§ Type of flame detector eg. IR = Infrared, UV = Ultraviolet

& Type of gas detector, eg. CO

Simplex FIRE PRODUCTS

QE90 Configuration Sheet

QE90 PANEL CONFIGURATION SHEET

CLIENT:		ORDER No:	
CONTACT:		DATE:	
PROJECT:		LOGOTYPE:	
DATE REQ:			

SECP	(QTY)	
(FP0539) PAGING CONSOLE	(QTY)	
(SU0168) GOOSENECK MIC.	(QTY)	
(SU0169) DESKTOP MIC.	(QTY)	
(PA0688) MIC. PRE-AMP BD	(QTY)	
Cabinets (Qty)	18U	21U
	28U	40U

Bold columns are compulsory – Others optional. Refer to PBQ0094B for instructions

Evac Zone No.	Evac Zone Name	Fire Zone	Loudspeaker Output (Watts)					**Amplifiers**		Strobe Outputs (Qty) 2A Per Output	**Wips** (Qty 0-3)	**BGA Inputs**	**Fip Inputs**	Remarks
			.5	1	2	5	LOAD	RATING	QTY					

Cascade

	Disabled
	Standard 2 up 1 down
	Special attached

Inputs

	BGA use FIP i/ps
	BGA use 3-4 wire WIP ccts
	BGA use 2 wire WIP ccts
	FIP use WIP ccts
	FIP use RZDU
	FIP use PanelLink

Relay Outputs

X	Fault
	Alarm
	Any Alert/Evac/PA/PABX
	Other attached

Speech Messages

	Evac... as directed (Aus)
	Evacuate... fire exit (NZ)
	Special attached
	Speech in auto only
	Message with Alert tone

Evacuation tone

	ISO 8201 (Aus default)
	AS 2220 (NZ default)

Networking

Attach zone – zone mapping, control priority, inter-ECPWIPs etc.

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Product Index

Terms and Conditions

Definition - Where the context permits:

Agreement means the agreement between the Vendor and the Customer for the supply of Goods by the Vendor to the Customer and shall be constituted by these Terms and Conditions of Sale and if any, the Vendor's quotation, Credit Arrangement and Guarantee.
Credit Arrangement means the credit terms available to the Customer pursuant to an application by the Customer for the provision of Goods on credit submitted to the Vendor using the Vendor's standard credit application form and accepted in writing by the Vendor.
Customer means the person with whom the Vendor has agreed to supply Goods pursuant to the Agreement.
Goods means the goods and services agreed to be supplied by the Vendor and purchased by the Customer pursuant to the Agreement.
GST has the meaning given by the A New Tax System (Goods and Services Tax) Act 1999 (Cth), or, if that Act does not exist means any Act imposing or relating to the imposition or administration of a goods and services tax in Australia and any regulation made under that Act.
Guarantee means the guarantee document provided by the Customer or the Customer's directors, shareholders or principals to the Vendor to guarantee the performance of the Agreement by the Customer.
Proprietary Information means any and all information and intellectual property relating to the Goods or the installation or operation of the Goods including but not limited to patents, designs, drawings, instruction booklets, specifications, circuit drawings, componentry, trade secrets, trade marks and copyright in such information and intellectual property.
Vendor means, Tyco Australia Pty Ltd, ABN 80 008 399 004 trading as SimplexGrinnell.
Quotations and Purchase Orders

1 Quotations from the Vendor are valid for a period of 30 days from the date of issue or otherwise specified in the quotation. Prices given in any quotation by the Vendor are applicable to that quotation only and will not apply in any other instances. A quotation from the Vendor is not an offer to sell.
2 In order to purchase the Goods, the Customer must place with the Vendor a purchase order. If the purchase order is in writing, it must set out an order number, the Vendor's quotation number (if applicable), full description of the Goods to be purchased, the delivery date, delivery point and any other information required by the Vendor. The purchase order may be accepted or rejected by Vendor.
3 A contract shall be formed by and upon the Vendor accepting in writing a purchase order from the Customer pursuant to clause 2 or by the Vendor delivering the Goods to the Customer and each contract shall be governed by the Agreement.
4 The Agreement shall take precedence over any other representations, agreements, arrangements or understandings relating to the Goods and any matters in connection therewith.

Terms and Conditions

5 Any conditions or terms of purchase submitted by the Customer deviating from or inconsistent with the Agreement will not bind the Vendor notwithstanding any statement by the Customer in its purchase order that its terms and conditions prevail over the Agreement.
6 The Vendor may at its discretion, as a condition of acceptance of a purchase order require the Customer to provide to the Vendor cash deposit, Guarantee, bank guarantee or enter into a Credit Arrangement prior to delivery of the Goods.

Payment of purchase price

7 Purchase orders are accepted by the Vendor subject to the condition that the Customer agrees to pay the purchase price appearing on the Vendor's price list for those Goods current on the date the order is accepted by the Vendor, or as otherwise quoted by the Vendor in writing.
8 Copies of the Vendor's price list current as at the date of the purchase order are available on request. All prices are subject to alteration without notice.
9 The purchase price, unless otherwise expressly stated, does not include any delivery charges, packaging, freight, assembly costs, installation costs, costs and charges of third party suppliers such as electricians, insurance or any statutory, sales, excise, GST, or other taxes, duties or imposts, all of which may be added to the purchase price or otherwise will be paid by the Customer or reimbursed by the Customer to the Vendor, as the Vendor may elect.
10 Payment of the purchase price must be made in full within 30 days after the date of the invoice or otherwise in accordance with the Customer's Credit Arrangement as amended in writing by the Vendor from time to time.
11 The Customer must not set off any money owing or alleged to be owing by the Vendor against money due by the Customer to the Vendor.
12 The Customer acknowledges that the Vendor is a member of a group of companies which have as their ultimate parent Tyco International Ltd. (Tyco Group). The Customer agrees that the Vendor and/or any other Tyco Group company is entitled to exercise a right of set off to the extent the Customer is indebted to the Vendor or to any Tyco Group company against any monies due by the Vendor to the Customer or any Tyco Group company on this or any other account.
13 If the Customer does not pay money by the due date for payment, without prejudice to any other rights which it may have against the Customer, the Vendor may require the Customer to pay upon demand interest at the Westpac Indicator Lending Rate effective from time to time plus 4% per annum calculated from the due date on daily balances of amounts unpaid.
14 If GST is payable on a supply pursuant to the Agreement, the Customer must also pay to the Vendor an additional amount equal to the GST payable. This clause does not apply to the extent that the purchase price is expressly stated to be GST inclusive. The Customer must pay the GST amount at the same time as the Customer must pay the purchase price.

Cancellation of orders

15 Purchase orders may not be altered or cancelled without the written consent of the Vendor. If the Vendor agrees to alter or cancel the purchase order, the Customer will indemnify the Vendor against any loss, damage and expense incurred by the Vendor in relation to the cancellation or alteration of that purchase order including the cost of return freight, return shipping to factory of origin, items purchased from third parties for inclusion in Goods and all labour and engineering costs incurred by the Vendor in the execution or part execution of the Goods and including compensation payable to any supplier of the Vendor and loss of profit.

Return of Goods and credits

16 The Customer is deemed to have accepted the Goods unless it makes a claim in accordance with clause 17.
17 The Customer may reject any Goods which are wrongly supplied or oversupplied by notifying the Vendor of the claim and providing full particulars of the claim in writing within 5 days of receipt of those Goods. The Vendor may dispute any such claim.
18 Goods referred to in clause 17 may be returned to the Vendor for credit if all of the following is complied with:
18.1 The Goods are returned to the Vendor's premises by prior arrangement and with the Vendor's written approval within 7 days of delivery, at no cost to the Vendor, unless delivered as the result of an administrative error by the Vendor, in which case the Vendor will bear the cost of return;
18.2 The Goods are accompanied by a dispatch note stating the Vendor's original invoice number and reason for return; and
18.3 The Goods are returned in an unsoiled, undamaged and resaleable condition in their original packing.
19 The Customer must not return any Goods to the Vendor unless it has complied with clauses 17 and 18 and has done all things necessary to permit the Vendor to examine the Goods to the Vendor's satisfaction within that period.

Delivery and storage

20 All quoted delivery or consignment dates are estimates only. The Vendor is not obliged to meet such dates and will not be liable to the Customer by reason of delays caused by any reason whatsoever.
21 The Vendor is deemed to have delivered the Goods when the Goods are made available to the Customer for physical collection by or on behalf of the Customer at the Customer's nominated delivery point (Delivery). Any unloading or loading shall be the Customer's responsibility, unless otherwise agreed in writing by the Vendor.
22 The Vendor may deliver the Goods by instalments (where in the Vendor's opinion this is reasonable to do so) and issue interim invoices to the Customer.
23 Without limiting any other provision in the Agreement, failure by the Customer to pay any instalment, or any other amount when due, will entitle the Vendor to withhold or delay delivery of any remaining Goods ordered.
24 If the Customer is unable to collect the Goods from the Customer's nominated delivery point on the delivery day, the Vendor may (at its option and without limiting its other rights and remedies) arrange suitable storage of the Goods, whether at its premises or elsewhere and the Customer must pay or reimburse all costs and expenses of storage, insurance, demurrage, handling and other charges associated with such storage. Notwithstanding the Customer's inability to collect the Goods, Delivery is deemed to have occurred.

Title and risk

25 Title to the Goods shall remain with the Vendor until all monies owing to the Vendor by the Customer has been paid in full (whether such monies are payable under a specific contract or any other account whatsoever).
26 Until such time that the Customer has paid in full all monies owing to the Vendor, the Customer shall:
26.1 keep the Goods stored separately and marked so that they are clearly and easily identifiable as the Vendor's property and inform the Vendor of the location of the Goods, if requested;
26.2 hold the Goods as bailee for the Vendor subject to its right to deal with the Goods in the ordinary course of the Customer's business;
26.3 indemnify the Vendor against any claim arising out of the possession, use or disposal of the Goods by the Customer or repossession or attempted repossession by the Vendor.
27 If:
27.1 a payment is not made in accordance with the Agreement;
27.2 the Customer commits any other breach of the Agreement;
27.3 the Customer becomes bankrupt or has an administrator, a receiver or a receiver and manager appointed or goes into liquidation, whether voluntarily or otherwise, or is wound up or dissolved or declared insolvent;
then the Vendor may at any time, without notice to the Customer and without prejudice to any other rights which it may have against the Customer:
27.4 terminate the Agreement and the bailment referred to in Clause 26;
27.5 suspend some or all its obligations under the Agreement with the Customer; and/or
27.6 enter upon any premises owned or occupied by the Customer where the Vendor reasonably believes the Goods may be stored and repossess the Goods without being liable for any damages caused.
28 If the Customer sells the Goods before payment in full to the Vendor, or uses the Goods in a manufacturing or construction process of its own or some third party, the Customer holds the proceeds on trust for the Vendor in respect of those Goods, and must keep such proceeds in a separate account until the liability to the Vendor is discharged and must immediately pay that amount to the Vendor.
29 The risk in the Goods passes to the Customer at the time of Delivery.

Insurance

30 The Customer must keep the Goods insured against all risks for Goods of that kind from the time the risk in the Goods passes to the Customer until the time the property in the Goods passes to the Customer. The Customer holds the proceeds of that insurance on trust for the Vendor up to the amount it owes the Vendor in respect of those Goods, and must keep such proceeds in a separate account until the liability to the Vendor is discharged and must immediately pay that amount to the Vendor.

Limitation of liability for Goods and warranties

31 To the extent permitted by law, the Vendor makes no warranties or representations to the Customer except to the extent set out in the Agreement.
32 The Vendor warrants the Goods to be free from defects in workmanship and materials under normal use and service for a period of [2 calendar years] from the Delivery (''Warranty Period''). This warranty does not cover costs of recovery of the Goods from the site , return of the Goods to the site, re-installation of the Goods at the site, the costs of travel and subsistence for the Vendors representatives, or damage, fault, failure or malfunction due to external causes including accident, abuse, misuse, mechanical or electrical overload, abrasion, corrosion, [incorrect installation], failure to perform required preventative maintenance or normal wear and tear.
33 Goods being returned must be supplied to Simplex upon picking up the replacement parts or within 30 days. Failure to return the faulty goods within 30 days will result in the customer being charged for the cost of the replacement goods
34 During the Warranty Period, the Customer's sole remedy with respect to breach of warranties set out in clause 32 will be repair or replace by the Vendor (as the Vendor may elect) any such defective Goods at the Vendor's expense. The replacement or repaired Goods shall be covered by the unexpired portion of the Warranty Period in respect of the original Goods or for a period of [90 days], whichever is the greater.
35 For equipment forming part of the Goods which equipment is not manufactured by the Vendor, then the original manufacturer's warranty will apply. The Vendor's liability for such equipment shall not exceed the liability of the manufacturer.
36 Certain legislation, including the Trade Practices Act 1974 (Cth), may imply warranties or conditions or impose obligations which cannot be excluded, restricted or modified except to a limited extent. The Agreement must be read subject to any such statutory provisions. If such statutory provisions apply, to the extent to which the Vendor is entitled to do so, the Vendor's liability will be limited at its option to:
36.1 in the case of supply of goods, the replacement of goods or supply of equivalent goods, the payment of the cost of replacing the goods or acquiring equivalent goods, the payment of the cost of having the goods repaired or the repair of the goods; and
36.2 in the case of services, the supply of the services again or the payment of the cost of having the service performed again.
37 The liability of the Vendor under the Agreement will be reduced by the amount of any contributory loss or damage to the extent caused by the act or omission of the Customer.
38 The Customer acknowledges and agrees that, to the extent permitted by law, the Vendor has no liability in contract, tort (including negligence or breach of statutory duty), by statute or otherwise for loss or damage (whether direct or indirect) of profits, opportunity, revenue, goodwill, bargain, production, contracts, business or anticipated savings, corruption or destruction of data or for any direct or indirect, special or consequential loss or damage whatsoever.

Proprietary Information

39 The Customer acknowledges that all Proprietary Information and all right title and interest therein are the sole property of or licensed by the Vendor and the Customer shall gain no right title or interest in the Proprietary Information whatsoever. The Customer specifically acknowledges the Vendor's exclusive rights to ownership of any modification, translation or adaptation of the Proprietary Information and any other improvement or development based thereon whether developed, supplied, installed or paid for by or on behalf of the Customer or any buyer of the Customer or otherwise.

Re-export

40 The Goods supplied are intended for use only in Australia. If re-exported by the Customer it is the Customer's responsibility to ensure that the Goods and the use to which they are put comply with the laws of that country.
41 The Customer acknowledges that the Goods purchased by the Customer may not be sold, leased or otherwise transferred to or utilised by, an end-user engaged in activities related to weapons of mass destruction including but not limited to activities related to design, development, production or use of nuclear materials, nuclear facilities or nuclear weapons, missiles or support of missiles projects or chemical or biological weapons.

Miscellaneous

42 The fact that the Vendor fails to do, or delays in doing, something it is entitled to do under the Agreement, does not amount to a waiver of its right to do it. Any waiver must be agreed in writing by the Vendor.
43 If a clause or part of a clause can be read in a way that makes it illegal, unenforceable or invalid, but can also be read in a way that makes it legal, enforceable and valid, it must be read in the latter way. If any clause or part of a clause is illegal, unenforceable or invalid, that clause or part is to be treated as removed from these Terms and Conditions of Sale, but the rest of the Agreement is not affected.
44 The Vendor shall not be liable for any failure to fulfil or any delay in fulfilling any obligation arising from the Agreement if the failure or delay has been caused directly or indirectly by any act of God, war or other civil commotion, strikes, lockouts, stoppages and restraints of labour, breakdown of machinery, inability to obtain raw materials or fuel, fire or explosion, any government action or any other cause beyond the reasonable control of the Vendor and not a consequence of the Vendor's negligence.
45 Any notice to be given to a party under the Agreement must be in writing and must be sent by post, facsimile or email to the address of that party shown in the quotation, purchase order or order acknowledgment. Notice is deemed to have been given at the time it would have been received in the normal course of post if sent by post, or if otherwise given at the time it was actually received.
46 The Agreement is governed by and must be interpreted in accordance with the laws of the State or Territory where the Vendor supplies the Goods. The Customer unconditionally submits to the non-exclusive jurisdiction of the courts of that State or Territory.
47 Where there is more than one Customer then the liability of each shall be joint and several.
48 The rights and remedies provided in the Agreement will not affect any other rights or remedies available to the Vendor.
49 The Agreement cannot be assigned by the Customer without the prior written consent of the Vendor.

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