Fire Detection Product Catalogue

New Zealand - Issue 3

The power behind **your mission**

Johnson Controls

Introduction

Welcome to the third edition of the Johnson Controls Fire Detection Product Catalogue for New Zealand.

We aim to make our product range as comprehensive as possible to ensure you never need go anywhere else. To meet this goal, our product specialists, with your help, have selected the most appropriate, cost-effective product range all available for next day delivery from our National Distribution Centre. Only those products that meet the highest quality criteria have been included.

Our warehouse, located in Auckland, is one of the largest Fire & Security product distribution centres in New Zealand. Our goal is to despatch product on the same day as we receive your order when it is received before 1:00 pm. Our warranty and service returns policy is located towards the back of this catalogue on page "New Zealand - Issue 3" on page 111 for your reference.

We recognise that your business is highly dependant on excellence in customer service and to help achieve this we offer as standard, 24 months warranty on Johnson Controls Manufactured products. A purchase order and Return Authorisation (contact Customer Service) is required for parts to be replaced under warranty.

For all enquiries regarding this catalogue, please contact:
Johnson Controls Customer Service

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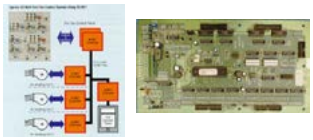

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Non-Addressable Fire Panels

SIGMA 5

SIGMA 5 is a microprocessor based fire alarm system that is simple to operate and easy to maintain. It is self contained, with integral power supply and battery storage within a compact and unobtrusive cabinet. It provides reliable and economical monitoring for up to five fire detection zones, which may include smoke detectors, heat detectors, manual call points and other compatible devices. *SIGMA* 5's flexibility and versatile input/ output programming allow it to perform a wide range of fire alarm monitoring, control and signalling applications.

- Five detection zone circuits
- Compact design
- Low power consumption
- Internal battery and charger
- Wide detector compatibility
- Pushbutton circuit isolation
- Field programmable
- Alarms displayed on engravable index
- Built-in sounder for local faults states
- Automated self-test
- Eleven Programmable ancillary outputs

Reliability is a major feature of *SIGMA* 5's design. All detector and alerting device circuits, the battery connections and the power supply are fully supervised. Detection circuits and the battery supply are automatically tested daily. A supervisory 'watchdog' monitors for correct operation of system software.

Alarms are clearly annunciated on the outside of the control panel by an indexed array of LEDs, one for each alarm zone. A mimic diagram may be added if required. Remote LED-RZDU displays can be readily connected by 4-wire cable.

Keyswitches on the outside of the cabinet allow operation of the control panel by the fire brigade or owner. The Silence Alarms switch is for the Fire Brigade to use after evacuation and building search procedures. The Evacuation switch activates fire alarm system sounders for evacuation drills. An optional Services Restore switch may be fitted to allow building services that have been shut down by a fire alarm to be restarted.

SIGMA 5 complies with NZS 4512:2010 "Fire Detection and Alarm Systems in Buildings" and meets the NZ Fire Service requriements for connection to remote receiving stations.
FPANZ listing number VF/116.

Specifications

Cabinet

Material	Mild steel, powdercoated cream, wrinkle finish
Dims	350 x 290 x 100 mm (HWD)

Part Numbers

FP0759	*SIGMA* 5 Fire Panel, Rear Service
FP0760	*SIGMA* 5 Fire Panel, Front Service
PA1025	20W Mini-Gen Tone Generator, 12V
PA0861	Gen.Purpose Brigade Relay Interface
PA0862	Gen Purpose SGD incl. switches
SW0189	Services Restore Keyswitch
PSH-12100	Battery, 12V 10.5Ah (largest that will fit in *SIGMA* 5)
PA0483	Unprotected Termination Board
LM0049	Loom, 26-way FRC, 250mm
SM0437	Empty Cabinet Front Service c/w Index
SM0471	Empty Cabinet Rear Service c/w Index
CL00450	SIGMA 5 Transformer

Spares

FA2070	*SIGMA* 5 Front Service Index
FA2073	*SIGMA* 5 Rear Service Index
PA0841	*SIGMA* 5 Main Board, Rear Service
PA0842S	*SIGMA* 5 Main Board Front Service

FP1600

The VIGILANT FP1600 is a microprocessor based fire alarm system that is simple to operate and easy to maintain. It is self contained, with integral power supply and battery storage within a compact and unobtrusive cabinet. It provides reliable and economical monitoring for 16 fire detection zones (expandable to 96), which may include smoke detectors, heat detectors, manual call points and other compatible devices. FP1600's flexibility and versatile input/ output programming allow it to perform a wide range of fire alarm monitoring, control and signalling applications.

- Compact design
- Low power consumption
- Internal battery and charger
- Wide detector compatibility
- Residential circuits for non-latching smoke warning and full call point/heat detector alarm
- Pushbutton circuit isolation
- Field programmable (PC or pushbutton)
- Alarms displayed on engravable index(es)
- Built-in sounder for local fault states
- Up to 8 serial remote displays
- Automated self-test
- History log tracks alarms and transient fault conditions
- Up to 22 programmable ancillary outputs per 16 zones

Reliability is a major feature of FP1600's design. All detector and alerting device circuits, earth faults, the battery connections and the power supply are fully supervised. Detection circuits and the battery supply are automatically tested daily. A supervisory 'watchdog' monitors for correct operation of system software.

Alarms are clearly annunciated on the outside of the control panel by an indexed array of LEDs, one for each alarm zone. A mimic diagram may be added if required. Remote LED-RZDU displays can be readily connected by 4-wire cable.

Keyswitches on the outside of the cabinet allow operation of the control panel by the fire brigade or owner. The Silence Alarms switch is for the Fire Brigade to use after evacuation and building search procedures. The Evacuation switch activates fire alarm system sounders for evacuation drills. The Services Restore switch allows building services that have been shut down by a fire alarm to be restarted.

The VIGILANT FP1600 complies with NZS 4512:2010 "Fire Detection and Alarm Systems in Buildings"
FPANZ listing number VF/103.

Specifications

Cabinet

Material	Mild steel, powdercoated cream, wrinkle finish
Dims	510 x 485 x 110 mm (HWD)

Part Numbers

FP0547	FP1600 Rear Service with 16 zone Index incl. Master PCB set
FP0548	FP1600 Front Service with 16 zone Index incl. Master PCB set
PA0861	General purpose Brigade relay I/F
PA0862	General purpose SGD
FP0552	Blank cabinet, no index
SP0424	R/S Empty Cab, incl. 16Z Index
SP0425	F/S Empty Cab, incl. 16Z Index
FP0896	Empty Cab, R/S, PSU, 16Z Index
FP0897	Empty Cab, F/S, PSU, 16Z Index
KT0216	Master PCB set (for zones 1 to 16). Incl Master PCB (fits on F/S or R/S), LED board, FRC Looms & repl. gear plate
KT0215	Slave Extender PCB set. Ignore PSU for zones 17-32, 49-64, or 81-96. Use PSU for zones 33-48, 65-80. Incl: Slave PCB (fits on F/S or R/S), LED board, FRC Looms
KT0131	Kit, Comms Extender for 2+ Slaves Incl: PA0771 Comms Interface PCB, FRCs: 1 x 250mm, 1 x 400mm, 2 x 1500mm, 4 x PCB Standoffs
KT0142	Kit, FP1600 MkII or MkIII, upgrade to 32 zones. Incl: Repl. master software (for MkII systems), LM0074, Slave extender PCB set (fits R/S or F/S), labels, instructions, Does not include cabinet.
KT0438	= KT0142 + SP0424. Adds 16 zones to MkII or MkIII Rear Service FP1600
KT0439	= KT0142 + SP0425. Adds 16 zones to MkII or MkIII Front Service FP1600
LM0073	FRC Loom, 20 Way, 1500mm
LM0074	Loom Master - First Slave
LM0549	FRC Loom, 34 Way
BA12070	Battery, 12V 7Ah
SU0159	10A Thermal Cutout (one required per battery where multiple batteries are wired in parallel). **Note: Omega 64 is the historical designation of FP1600 in expanded 32-96 zone configuration. Larger format cabinets (32 zone) are no longer available**
FA1207	FP1600 Rear Service Index (spare)
FA1209	FP1600 Front Service Index (spare)
PA0702	FP1600 Mimic Termination Board
PA0787	FP1600 Mimic Display Board
LM0052	Loom, FP1600 Remote Mimic
CN0055	Connector FRC 26-way Box Header
CN0406	Plug, 8-way Term.Block (spare)
FA1210	FP1600 F/S Display Mounting Bracket
ME0453S	FP1600 Transformer Assembly

FP1600 ordering details for various typical configurations and systems up to 96 zones are as follows:-

Rear Service Systems

16 Zone Rear Service
FP0547 Master FP1600 R/S with 16 zone index

32 Zone Rear Service (2 Cabinets)
FP0547 Master FP1600, R/S with 16 zone index
KT0438 Upgrade Kit, R/S, 32 zone, includes cabinet

48 Zone Rear Service (3 Cabinets)
FP0547 Master FP1600 R/S with 16 zone index
2x KT0215 Slave PCB set
KT0131 Kit, Comms Extender for 2+ Slaves
SP0424 Empty Cabinet, R/S, 16 zone index
FP0896 Empty Cabinet, R/S, PSU, 16 zone index

64 Zone Rear Service (4 Cabinets)
FP0547 Master FP1600, R/S with 16 zone index
3x KT0215 Slave PCB Set
KT0131 Kit, Comms Extender for 2+ Slaves
2x SP0424 Empty Cabinet, R/S, 16 zone index
FP0896 Empty Cabinet, R/S, PSU 16 zone index

80 Zone Rear Service (5 Cabinets)
FP0547 Master FP1600, R/S with 16 zone index
4x KT0215 Slave PCB Set
KT0131 Kit, Comms Extender for 2+ Slaves
LM0073 FRC Loom, 20 way, 1500mm
2x SP0424 Empty Cabinet, R/S, 16 zone index
2x FP0896 Empty Cabinet, R/S, PSU, 16 zone index

96 Zone Rear Service (6 Cabinets)
FP0547 Master FP1600, R/S with 16 zone index
5x KT0215 Slave PCB Set
KT0131 Kit, Comms Extender for 2+ Slaves
2x LM0073 FRC Loom, 20 way, 1500mm
3x SP0424 Empty Cabinet, R/S with 16 zone index
2x FP0896 Empty Cabinet. R/S, PSU, 16 zone index

Front Service Systems

16 Zone Front Service
FP0548 Master FP1600 F/S with 16 zone index

32 Zone Front Service (2 Cabinets)
FP0548 Master FP1600, F/S with 16 zone index
KT0439 Upgrade Kit, F/S, 32 zone, includes cabinet

48 Zone Front Service (3 Cabinets)
FP0548 Master FP1600 F/S with 16 zone index
2x KT0215 Slave PCB set
KT0131 Kit, Comms Extender for 2+ Slaves
SP0425 Empty Cabinet, F/S, 16 zone index
FP0897 Empty Cabinet, F/S, PSU, 16 zone index

64 Zone Front Service (4 Cabinets)
FP0548 Master FP1600, F/S with 16 zone index
3x KT0215 Slave PCB Set
1 x KT0131 Kit, Comms Extender for 2+ Slaves
2x SP0425 Empty Cabinet, F/S, 16 zone index
FP0897 Empty Cabinet, F/S, PSU, 16 zone index

80 Zone Front Service (5 Cabinets)
FP0548 Master FP1600, F/S with 16 zone index
4x KT0215 Slave PCB Set
KT0131 Kit, Comms Extender for 2+ Slaves
LM0073 FRC Loom, 20 way, 1500mm
2x SP0425 Empty Cabinet, F/S, 16 zone index
2x FP0897 Empty Cabinet, F/S, PSU, 16 zone index

96 Zone Front Service (6 Cabinets)
FP0548 Master FP1600, F/S with 16 zone index
5x KT0215 Slave PCB Set
KT0131 Kit, Comms Extender for 2+ Slaves
2x LM0073 FRC Loom, 20 way, 1500mm
3x SP0425 Empty Cabinet, F/S with 16 zone index
2x FP0897 Empty Cabinet. F/S, PSU, 16 zone index

Note: Fire brigade signalling device, batteries, thermal cutouts and alerting tone generators must also be ordered, as required.

Non-Addressable Detectors and Accessories

The Johnson Controls 614 range of low profile conventional 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 614 range includes the 614CH Carbon Monoxide/Heat multi-sensor fire detector, which responds to carbonaceous fires with an unprecedented early detection of slow smouldering fires, yet offers unequalled nuisance 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.

Features

- Range includes unique CO+Heat fire detector
- Low profile and discreet
- Superior performance and reliability
- Patented optical chamber
- Attractive design
- Designed for fast, easy installation
- Detector Lock included with 4B base
- Integral and remote alarm LED
- 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 nuisance 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 temp. 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 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	10 to 33Vdc
Quiescent Current	55µA (max.)
Alarm Current*	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
ActivFire Listed	afp-1718
FPANZ Listed	VF/345
Part Number	516.600.304

* 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, i.e. 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	10 to 33Vdc
Quiescent Current	60µA
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
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
ActivFire Listed	afp-1715
FPANZ Listed	VF/344
Part Number	516.600.301

*Max. current must be externally limited

614I Ion Chamber Smoke (obsolescent)

614I detectors are offered for 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	12 to 33Vdc
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
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

Series 300 Non-Addressable Detectors

The Series 300 range of conventional detectors has been produced using the latest in manufacturing and design techniques, pushing out the boundaries of existing conventional detector technology. With its multitude of innovative features, the Series 300 detector 'acts conventionally, thinks intelligently'.

All Series 300 detectors feature:

- Backward compatible with Series 100 detector range and bases
- Bi-colour LED detector status indicator
- Advanced maintenance features via remote hand-held test unit
- Remote alarm test

2351E Photoelectric Smoke

The 2351E photoelectric detector incorporates an Application Specific Integrated Circuit (ASIC). Combined with a state of the art optical chamber the detector provides efficient and accurate detection of fires with a high level of resilience to non-fire environmental influences.

- Automatic drift compensation
- Dust resistant chamber
- Programmable sensitivity
- Remote sensitivity/contamination test

Specifications

Operating Voltage	8 to 30Vdc
Standby Current (no LED)	50µA @ 24Vdc (LED no blink)
Alarm Current (LED On)	80mA at 24Vdc[1] max.
Operating Temp	−30°C to +70°C
Relative Humidity	5% to 95% (n/cond)
Dimensions	
Height	38mm (+9mm for base)
Diameter	102mm
Weight	105g (plus 60g for base)
Wire Gauge Terms	1.5mm² max.
FPANZ Listed	SS/355
Part Number	2351E

1. Alarm current limited by panel

2351TEM Multi-Sensor Photoelectric and Heat

The 2351TEM photoelectric smoke/thermal detector incorporates an optical chamber and a thermal element, which in turn are continually monitored by an on board processor using algorithms developed specifically for the unit. An alarm signal is only enabled in the detector once the processor is satisfied that an incipient fire has been detected. By using a combination of inputs, the incidence of nuisance alarms is reduced while at the same time, the response time to an actual fire is also improved.

- Automatic drift compensation
- Dust resistant chamber
- Programmable sensitivity
- Remote sensitivity/contamination test

Specifications

Operating Voltage	8 to 30Vdc
Standby Current (no LED)	65µA @ 24Vdc (LED no blink)
Alarm Current (LED On)	80mA at 24Vdc[1] max.
Operating Temp[2]	−30°C to +70°C
Relative Humidity	5% to 95% (n/cond)
Dimensions	
Height	48mm (+9mm for base)
Diameter	102mm
Weight	105g (plus 60g for base)
Wire Gauge Terms	1.5mm² max.
FPANZ Listed	SS/356
Part Number	2351TEM

1. Alarm current limited by panel
2. Max. ambient temp. should not exceed 45°C

5351E Rate-of-Rise & Fixed Temperature Heat

The 5351E thermal detector incorporates an Application Specific Integrated Circuit (ASIC). Combined with the latest in thermal element technology the detector provides efficient and accurate detection of fires, especially in environments such as bars or kitchens where smoke detectors are inappropriate due to the high level of airborne contamination.

Specifications

Operating Voltage	8 to 30Vdc
Standby Current (no LED)	65µA @ 24Vdc (LED no blink)
Alarm Current (LED On)	80mA at 24Vdc[1] max.
Operating Temp [2]	−30°C to +70°C
Relative Humidity	5% to 95% (n/cond)
Dimensions	
Height	48mm (+9mm for base)
Diameter	102mm
Weight	105g (plus 60g for base)
Wire Gauge Terms	1.5mm² max.
FPANZ Listed	SS/206
Part Number	5351E

1. Alarm current limited by panel
2. Max. ambient temp. should not exceed 45°C

4351E High Temperature Heat (Fixed Temperature)

The 4351E thermal detector incorporates an Application Specific Integrated Circuit (ASIC). Combined with the latest in thermal element technology the detector provides efficient and accurate detection of fires, especially in environments such as boiler houses or kitchens where smoke detectors are inappropriate due to the high level of airborne contamination. The 4351E operates when the detected temperature exceeds 78°C.

Specifications

Operating Voltage	8 to 30Vdc
Standby Current (no LED)	65µA @ 24Vdc (LED no blink)
Alarm Current (LED On)	80mA at 24Vdc[1] max.
Operating Temp [2]	−30°C to +70°C
Relative Humidity	5% to 95% (n/cond)
Dimensions	
Height	48mm (+9mm for base)
Diameter	102mm
Weight	105g (plus 60g for base)
Wire Gauge Terms	1.5mm² max.
FPANZ Listed	SS/207
Part Number	4351E

1. Alarm current limited by panel
2. Max. ambient temp. should not exceed 68°C

Series 100 Non-Addressable Detectors

Series100 Plug-in Smoke Detectors offer superb performance and reliability and a profile of just 43 mm. Other features include: low current draw, stable performance in high air velocities, built-in tamper resistant base design, remote LED option, removable cover, and built-in test switch.
The Series 100 is designed to meet UL performance criteria. Its sensing chambers are sealed against back pressure air flow, dirt, and insects and is protected by a fine mesh screen which can be cleaned or replaced. Additional key features include a variety of mounting bases and a full line of accessories.

- Compatible with 300 and 400 Series product
- Two LEDs blink in standby, providing 360° visibility

Specifications

Operating Voltage	12/24Vdc
Alarm Current	10 to 100mA[1]
Standby Current	85µA nominal
Sensitivity	3% ± 0.7%/ft. Photo
Dimensions (H x dia)	43 x 102 mm
Weight	102 g
Temperature	0°C to +49°C
UL Listed Velocity Range	
Photo	0 to 15.2 m/s
Relative Humidity	10% to 93% (n/cond)
FPANZ Listed	SS/328

Part Numbers

SS0324K	2151 Photoelectric Smoke Detector with Base

1. Alarm current limited by panel

Series 100 Non-Addressable Detector Accessories

Specifications

Dimensions (H x dia)	20 x 102 mm
Weight	152g

Part Numbers

SS0300	B401 Detector Base
M020900	Test Magnet

B401 Detector Base - compatible with all series 100, 300, 400 devices.

M020900 Test Magnet with telescoping handle

Non-Addressable Detector Bases

4B Universal Base

The 4B Universal Base contains no electronics and is suitable for indoor applications of the 614 series conventional (non-addressable), 814 and 850 series analogue addressable detectors. It provides excellent space for cable access and terminations. It features remote LED connections and an anti-tamper facility. The 4B base is designed to snap-fit into the ceiling tile adaptor, or screw fix to the ceiling in the traditional manner.

The Euro Mount Adaptor is a shallow (20mm deep) back box for surface mounting applications.

The 4B-6A Adaptor covers ceiling marks revealed when changing from an existing 5" or 6" base.

When (suitable) detectors are fitted in damp or dirty environments, the 4B-DHM Deckhead Mounting provides an IP55 seal between the mount and the detector base.

Specifications

Operating Temp.	-25°C to +75°C
Relative Humidity	10% to 95% (non cond.)
Dimensions (mm)	109 dia x 25H
Weight	64g

Indoor Applications Only

ActivFire Listed with compatible detectors

Part Numbers

517.050.041	4B Base
517.050.052	Euro Mount Adaptor
517.050.056	4B-6A 4" to 6" Adaptor
517.050.051	4B-DHM DeckHead Mounting Kit

DHM-5B Deckhead Mount

The Deckhead Mount can be used with Vigilant 600/800 Series using the 4B base, 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).

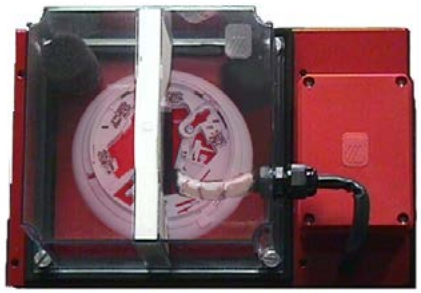
Specifications

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)

D515B Duct Sampling Unit



The D515B Duct Sampling Unit consists of a D51B duct housing fitted with a 5B base suitable for fitting a non-addressable 614P photoelectric smoke detector. The D51B is designed to sample air in air conditioning ducts and pass the air through the smoke detector. The housing 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. Vigilant E500 Mk2 Series Remote Indicators can be used for remote indication of an alarm. The D515B with 614P can be used with F3200 CIE logic for non-latching operation. The D515B with Vigilant 614P is compatible with non-addresable alarm zone circuits on VIGILANT CIE.

Specifications

Duct Pressure*	-1.15 to +3.0 kPa
Sampling Tube Length	160mm minimum
Max. Duct Width	1.8m
Remote Indicator	E500 Mk2 Series
Dimensions	
Base & Cover (LWH)	278x190x113 mm
Fixed Tube Length	160 mm below base
Sampling Tube Pitch	122mm
Duct Holes Required	24mm dia. x 2 places

Not ActivFire Listed

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

VIGIL Non-Addresable Heat Detector

VIGIL Non-Addressable Heat Detector

VIGIL heat detectors are low cost, fast operating fixed temperature devices designed for automatic fire detection in normal risk buildings. They are available in both latching indicating and clean contact versions.

- Unobtrusive low-profile design
- Fast response
- Normally-closed gold-flashed contacts
- Resettable design allows repeated testing
- Environmentally protected versions:
  Normal - no added protection, dry indoor use
  Dipped - enhanced protection, tolerates occasional dampness
  Encapsulated - Heavily protected (IP67)

Specifications

Dimensions (H x dia)	35 x 67 mm
Mounting Holes	2x Ø6 @ 51mm spacing
Material	Polycarbonate
Body Colour	White
Actuation Temperatures	
Colour code	Blue: 57°C ± 3°C
	Yellow: 77°C ± 3°C
	White: 107°C ± 3.5°C
Operational Temperatures	
VIGIL-N, VIGIL -D	-25°C to 15°C below actuation
VIGIL-E	-20°C to 15°C below actuation
Indi-VIGIL	0°C to 65°C (45°C for Blue)
Indi-VIGIL encaps.	-20°C to 65°C (45°C for Blue)
FPANZ Listing Numbers:	
VIGIL-N	VF/201
VIGIL-D	VF/202
VIGIL-E	VF/203
Indi-VIGIL	VF/204
Indi-VIGIL encaps.	VF/215
Indicating Module	VF/651

Part Numbers

Indicating detectors	
FP0899	Indi-VIGIL, Blue (57°C)
FP0900	Indi-VIGIL, Yellow (77°C)
FP0910	Indi-VIGIL, Encp, Blu (57°C)
FP0911	Indi-VIGIL, Encp, Yel (77°C)
Clean contact detectors	
FP0717	VIGIL-N, Blue (57°C)
FP0718	VIGIL-N, Yellow (77°C)
FP0720	VIGIL-N, White (107°C)
FP0721	VIGIL-D, Dipped, Blu (57°C)
FP0722	VIGIL-D, Dipped, Yel (77°C)
FP0723	VIGIL-E, Encaps, Blu (57°C)
FP0724	VIGIL-E, Encaps, Yel (77°C)
Accessories	
FB0111	Mounting Bracket 90°, Galvanised
GASKETHD	Mounting Gasket

Note: VIGIL detectors are unsuitable for heavily corrosive, continuously wet, caustic, or physically abrasive environments for which a T54B probe type detector is more suited. (See page 13).

The Indi-VIGIL range is approved for new installations to NZS 4512:2010 "Fire Detection and Alarm Systems in Buildings". The non-indicating VIGIL range is approved to NZS 2139:1967 "Heat Actuated Fire Detectors" (historical).

Indi-VIGIL Indicating Module

The Indi-VIGIL Indicating Module, when installed in a manual call point or wired to a clean-contact detector, is compatible with VIGILANT fire alarm systems in the same quantities as the indicating manual call point and Indi-VIGIL heat detector.
Note: The manual call point or detector must be a clean-contact device not an indicating heat detector or indicating manual call point, because two indicating circuits/modules connected in parallel will not operate reliably.

Specifications

Format	Circuit board
Dimensions (HWD)	40 x 44 x 30 mm
FPANZ Listed	VF/651
Part Number	PA1022

Contact Conversion Module

The VIGILANT PA0443 Contact Conversion Module is designed to allow normally-closed clean contact devices (e.g. manual callpoints) to be connected onto legacy (pre-NZS4512:2003) smoke detector circuits. The module converts the normally-closed hard contact to a normally-open transistor clamp (clamps to about 1 volt when the contacts open) across the detection circuit. For new (NZS4512:2010) installations, use PA1022.

Specifications

Format	Potted circuit module
Cable Tail Length	250 mm
Dimensions (HWD)	60 x 22 x 17 mm
Weight	24g
FPANZ Listed	VF/618
Part Number	PA0443

Probe-type Heat 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 may be 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 with a minimum order quantity of 20.

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
Ingress Protection	IP67
ActivFire Listed	afp-1612
FPANZ Listed	VF/214

Part Numbers

T4E60X	T54B Heat Detector - 60°C
T4E90X	T54B Heat Detector - 90°C
T4E100X	T54B Heat Detector - 100°C
T4E132X	T54B Heat Detector - 132°C
T4E210X	T54B Heat Detector - 210°C
T4E240X	T54B Heat Detector - 240°C
T4E60NC	T54B Heat Detector - 60°C Normally Closed
T4E110NC	T54B Heat Detector - 110°C Normally Closed
T4E145NC	T54B Heat Detector - 145°C Normally Closed

27120 Probe Type Heat Detector

DETECT-A-FIRE thermal detectors are UL Listed, and FM Approved detection and release devices used with fire detection systems to activate alarms and actuate extinguishing systems. This Rate Compensated device combines the best features of both fixed temperature and rate-of-rise detectors.
Contacts open on alarm.

Specifications

Electrical Rating (resistive only)	5A @ 125 Vac 0.5A @ 125 Vdc
Actuating Temp.:(preset)	182°C
Fixed Temp. Only:	Type E
Accuracy:	+ or - 10%
Ambient Temp.:	-40 to +280°C
Relative Humidity:	100% RH
Thread Size	1/2-14 NPT
FPANZ Listed	VF/206
Part Number	27120

Non-Addressable Manual Call Points

VNCPI Conventional Indoor Manual Callpoint (MCP)

The VNCPI is a conventional indicating manual callpoint (MCP) that is suitable for indoor applications. It is supplied with a plastic element, which deforms when pressed in to release a microswitch.

The element is not destroyed and can be reused many times by resetting the MCP using the test/reset key provided. A clear plastic cover, which must be lifted to gain access to the element, provides protection against accidental activation. The MCP is easily tested using the test/reset key.

Activation is shown by a red alarm LED, which latches on until the element is restored and the fire panel alarm condition is reset. The MCP is supplied with a surface mounting box, but can be flush mounted when a suitable flush-mount box (not supplied) is installed into the wall cavity. The MCP is approved to NZS 4512:2010 and is FPANZ listed.

Specifications

Operating Voltage	9.5 - 28Vdc
Quiescent Current	20µA @ 20V
Alarm Voltage	1.6 - 3.5V
Alarm State Current	5mA min – 60mA max
Environment	Indoor application
Mounting	Surface or flush
Operating Temperature	-10 to +55°C
Storage Temperature	-30 to +70°C
Operating Humidity	Up to 95% non-condensing
Material	Flame Retardant ABS
Dimensions	105 x 93 x 62 mm (HWD)
Weight	190g
FPANZ Listing	VF/682

Part Numbers

514.001.550	VNCPI Indoor Conventional MCP

VNCPI-W Conventional Outdoor Manual Callpoint (MCP)

The VNCPI-W is a conventional indicating manual callpoint (MCP) that is suitable for outdoor applications.

It is supplied with a plastic resettable element, which deforms when pressed in to release a microswitch. The element is not destroyed and can be reused many times by resetting the MCP using the test/reset key provided. A clear plastic cover, which must be lifted to gain access to the element, provides protection against accidental activation. The MCP is easily tested using the test/reset key.

The alarm voltage generated by the MCP is lower than that of most smoke detectors, so on compatible fire alarm panels the MCP alarm is instant, while smoke detector alarms can be gated/verified. Activation is shown by a red alarm LED, which latches on until the element is restored and the fire panel alarm condition is reset. The MCP is surface mounted using the integral back box. This provides an IP 67 level of protection to dust and water. The MCP is approved to NZS 4512:2010 and is FPANZ listed.

Specifications

Operating Voltage	9.5 - 28Vdc
Quiescent Current	20µA @ 20V
Alarm Voltage	1.6 - 3.5V
Alarm State Current	5mA min – 60mA max
Environment	Outdoor application
Mounting	Surface
Operating Temperature	-10 to +55°C
Storage Temperature	-30 to +70°C
Operating Humidity	Up to 95% non-condensing
Material	Flame Retardant ABS
Ingress Protection	IP67
Dimensions	105 x 99 x 80 mm (HWD)
Weight	330g
FPANZ Listing	VF/683

Part Numbers

514.001.551	VNCPI-W Outdoor Conventional MCP

VNCPI/MCP821 1841 Callpoint Adaptor Kit

Note:
FP1140 does not come with new MCPs - the kit is sold separately.

The FP1140 1841 MCP Adaptor kit allows the new VNCPI and MCP821 MCPs to be fitted where an existing 1841-style MCP is already fitted.

The kit makes use of the existing 1841 surface-mount back box or flush-mounting box so that the new MCP can be fitted without disturbing the existing cabling, fixtures, and paintwork. The colour and outside dimensions of the adaptor plate match the 1841 MCP.

It can be used with a VNCPI or MCP821 MCP to replace:

- A surface mounted 1841 MCP.
- A flush mounted 1841 MCP on a flush box.
- A flush mounted 1841 MCP with its white switch plate screwed to the wall.

The kit consists of a new red face plate, internal adaptor plate and these installation instructions. It reuses some of the existing MCP screws and parts. The kit cannot be used with the outdoor models: VNCPI-W and MCP831, as their mounting back-box is an integral part of the IP rating.

Part Numbers

FP1140	Adaptor Kit for 1841-Style MCP (Surface or Flush)

1841 Manual Call Points

The 1841 manual call point is a break-glass switch designed to meet the requirements for manual call points in fire alarm systems as specified in NZS 4512 "Fire Detection and Alarm Systems in Buildings". The switch may also be used in other applications requiring the security of break glass operation. They are available in both latching indicating and clean contact versions.

- Attractive and functional
- Large, easy to operate switch
- Surface and flush mounting options
- Normally-closed gold-flashed switch contacts
- White version also available

Specifications

Switch rating	5A at 28Vdc
Dimensions (HWD)	
Surface	130 x 130 x 67 mm
Flush	130 x 130 x 13 mm
Cable entry (surface)	20mm conduit thread
Terminations	2.5mm², loop included
Protection	IP23 (Surface)
Material	ABS
Colour	Red - NZS 7702 #537
Weight	400g (surf.) 250g (flush)
Ambient temperature	0°C to +40°C
Relative humidity	up to 95% (non-cond.)
FPANZ Listed	
Conventional (Ind.)	VF/649
Clean contact (non-Ind.)	VF/607

Part Numbers

Conventional Indicating (Red)

FP0903	Flush, "Wormald"
FP0904	Surface "Wormald"
FP0907	Flush, no brand
FP0908	Surface, no brand
FA1000	Spare Glass

Clean Contact Non-Indicating

FP0330	Red, Flush, "Wormald"
FP0331	Red, Surface, "Wormald"
FP0324	Red, Surface, no brand
FP0386	White, Surface, no brand (3-pole switch)

Manual Call Point Label

This label provides the operation information required for manual call points by NZS4512 and the NZ Building Code compliance documents.

Specifications

Dimensions	150 x 110 mm

Part Number

LB0124	Dial 111 Label, PVC

KAC-Style Manual Call Points (Not NZS4512 Listed)

SU0608 MCP, White & Backbox
'Emergency Alarm'

SU0272 Transparent hinged cover to suit all SU0xxx KAC-style call points
(MCP not included).

The SU0608 MCP is surface mounting, with a plastic coated glass element to ensure reliable, safe operation. It is coloured white (for EWIS applications). 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.
"Emergency Door Release" versions are also available.

SC070 Packet of ten Test Keys for SU0xxx KAC-style MCPs

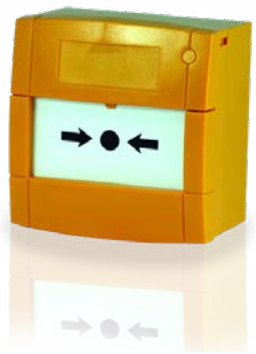
Specifications

Max Current	2A @ 30Vdc
Contact Resistance	100mOhm. (max)
Legend	Emergency Alarm
Ambient Temp	-10 to +55°C
Relative Humidity	95% (non cond.)
Ingress Protection	IP24D
Dimensions (HWD)	93 x89 x 60 mm

Part Numbers

SU0608	MCP, White & Backbox 'Emergency Alarm'
SU0613	MCP, White & Backbox 1PCO 'Emergency Door Release'
SU0614	MCP, White & Backbox 2PCO 'Emergency Door Release'
SU0631	MCP, Red N/O no Backbox
SU0632	Backbox (Red)
515.001.025	Spare Glass (pk 5)
SC070	Spare Test Keys (pkt10)
SU0272	Transparent hinged cover to suit all KAC-style MCPs.
SU0603	Tyco Glass, pkt 10
SU0605	Wormald Glass, pkt 10
515.001.127	Replacement resettable element - blank (pack of 5)
FA2728	Replacement resettable element - "Vigilant" (pack of 5)

Yellow KAC-Style Manual Call Point (not NZS4512 Listed)



The FP1114 MCP is surface mounting, with a plastic coated glass element to ensure reliable, safe operation. It is coloured yellow (for use in gaseous suppression applications). The call point is operated when the glass element is snapped, releasing the MCP's micro switch. The element is snapped by pressing on its centre – a hammer, or other impact device, is not required.

Specifications

Max Current	2A @ 30Vdc
Contact Resistance	100mOhm. (max)
Legend	None
Ambient Temp	-10 to +55°C
Relative Humidity	95%(non cond.)
Ingress Protection	IP24D
Dimensions (HWD)	93 x89 x 60 mm

Part Numbers

FP1114	MCP Yellow DPDT
515.001.019	Spare Glass (pk 5)
SC070	Spare Test Keys (pkt10)
SU0272	Transparent hinged cover to suit all SU0xxx MCPs. Material LEXAN241.
SU0603	Tyco Glass, pkt 10
SU0605	Wormald Glass, pkt 10

STOPPER II Manual Call Point Cover

FP0517 STOPPER II Flush Mount

The call point STOPPER II provides protection from malicious or accidental activation of manual call points. Available for flush or surface mounted call points the STOPPER II has an integral high pitched sounder, powered by 9V alkaline battery (included) which is activated when the tamper-proof clear polycarbonate lid is lifted.

Specifications

	FP0517	FP0518
Dims (HWD)	254x178x86	210x137x57.5mm
Call Point Size	160x160x120	100x100x57.5
Sounder SPL	95dB @ 1m	-

Part Numbers

FP0517	Stopper II Flush Mount
FP0518	Stopper II Surface Mount

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
IP Rating	Equivalent to IP44 when mounted on a smooth surface	

Part Numbers

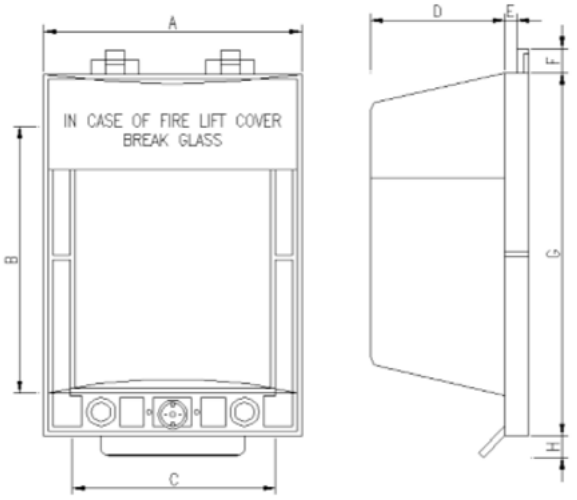
515.001.035	STI3150 Weather Stopper II
515.001.036	STI6535 Weather Stopper
515.001.033	IP036 Break Seal Kit
515.001.032	STI6533 Surface fit Weather STOPPER with sounder

Weather STOPPER II

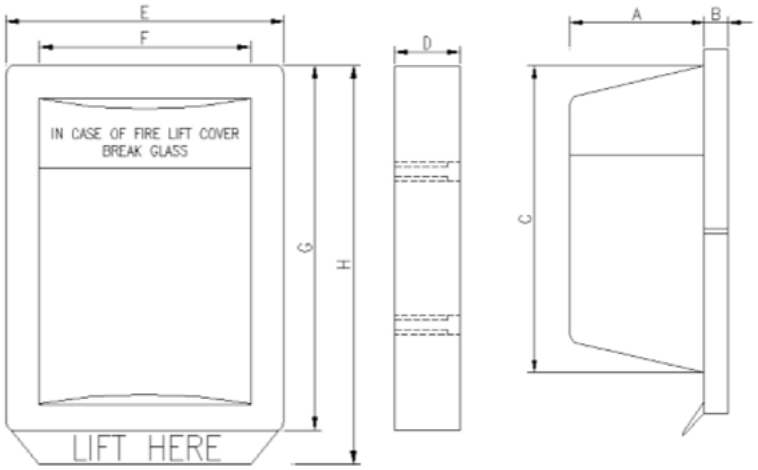
STI3150 Weather STOPPER II

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

Weather STOPPER



Weather STOPPER II



Weather STOPPER	
A	137 mm
B	140 mm
C	104 mm
D	45 mm
E	12.5 mm
F	12.5 mm
G	185 mm
H	12.5 mm
Max. MCP	100 sq. x 57.5 mm (+30 mm Surface)

Weather STOPPER II	
A	70 mm
B	16 mm
C	197 mm
D	50 mm
E	178 mm
F	146 mm
G	228 mm
H	254 mm
Max. MCP	160 sq. x 120 mm

WEATHER STOPPER MODEL COMPARISON						
		Weather STOPPER		Weather STOPPER II	With Sounder	Weatherproof
Product Code	Ref	Flush	Surface			
515.001.029	STI6530	✓				
515.001.030	STI6531		✓			
515.001.036	STI6535		✓			✓
515.001.034	STI1230			✓		
515.001.035	STI3150			✓		✓
515.001.031	STI6532	✓			✓	
515.001.032	STI6533		✓		✓	

Addressable Fire Panels

MX1 Fire Alarm System

The VIGILANT *MX1* is an innovative multiple networkable loop analogue addressable fire indicator panel incorporating the latest technology. It complies with NZS 4512: 2010 and is also designed to meet international standard ISO 7240.2 - 2003. Its support for *MX TECHNOLOGY* fuzzy-logic detection algorithms and powerful control functions make it suitable for a wide range of fire protection applications for small to large size systems.

- In-built *MX DIGITAL* Loop supporting up to 250 *MX* devices
- Add up to 7 optional *MX DIGITAL* loop cards for a total of 2000 MX devices
- Network up to 250 *MX1* panels
- *MX VIRTUAL* multi-sensor analogue addressable detector technology
- *MX FASTLOGIC* detection algorithm with SMARTSENSE option
- Clear alarm messages on 4-line LCD
- Compact zone LED display
- High level EWIS interface
- "Profiles" simplify programming of complex detection and logic functions
- Day/night modes for alarm sensitivity adjustment and output logic functions
- Powerful, field-programmable logic equations, functions, timers
- Pseudo points controlled by logic equations for enhanced control options
- Built-in clock/ calendar with automatic daylight saving adjustment
- Comprehensive test facilities including automatic self-test and fast commissioning test mode
- High capacity integral 5A power supply
- Compact cabinet or optional 19" mounting (built-to-order) up to 40U
- Earth fault supervision
- Fuse supervision
- WINDOWS based programming tools

MX1 utilises *MX VIRTUAL* multi-sensor analogue addressable detectors with dual sensors (photoelectric and heat, or CO and heat) to allow the best detection mode for a situation to be easily selected.

Heat detection can be either fixed temperature, or combined fixed temperature and rate-of-rise.
For specific applications, single-sensor *MX* analogue addressable ionisation and photoelectric smoke detectors, high sensitivity smoke detectors (VESDA), heat-only detectors and flame detectors are also available.

The *MX DIGITAL* communications protocol used on the detection loop is designed to provide high reliability and fault resistance, with operation possible over many cable types.
This often permits system upgrades using existing cable. The loop configuration ensures that communications continues in the event of a loop open circuit fault condition.

In the case of a short circuit, up to 128 short circuit isolator detector bases or modules may be fitted around the loop, to limit the effect of the fault to the devices between isolators. Alternatively, use Gen6 850 Series detectors with in-built short-circuit isolators.

Approvals
MX1 complies with New Zealand Standard NZS 4512: 2010 "Fire Detection and Alarm Systems in Buildings" and meets the NZ Fire Service requirements for connection to remote receiving stations.
FPANZ Listing Number VF/118

Specifications
Cabinet

Material	Mild Steel
Finish	Powdercoated, wrinkle
Colour	Cream (Slimline) Titania (15U)
Dims (HWD)	590 x 480 x140 mm (Slim) 750 x 550 x 211 mm (15U)

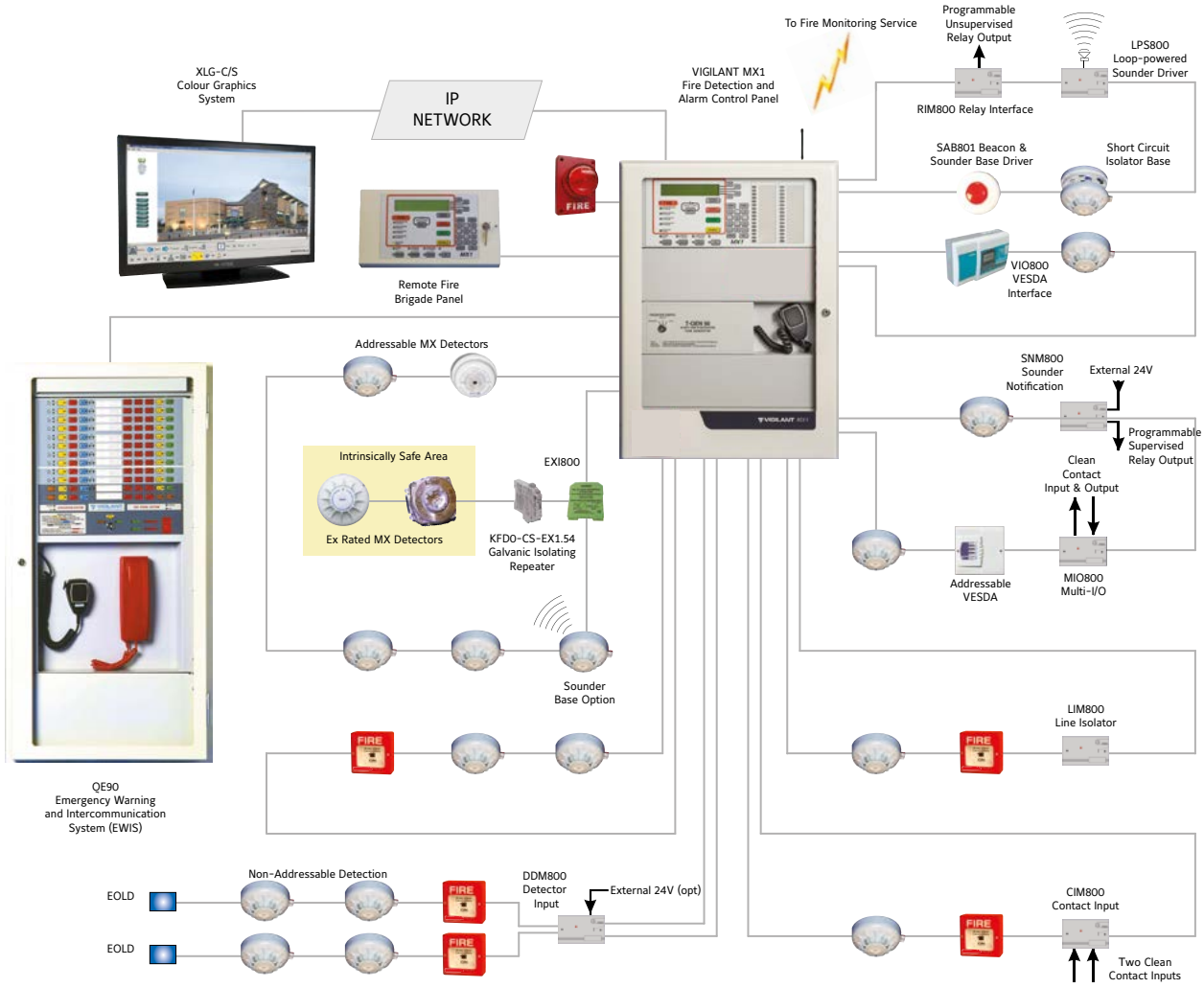
Part Numbers

FP0893	*MX1*-NZ, Slimline Panel
FP1010	*MX1*-NZ, 15U 19" Rack Panel
FP0950	*MX* Loop Card Kit
FP1002	*MX1*-NZ, 16 Zone display ext.
FP1030	*MX1*, 15U Empty Cab with Window, Titania
FP1031	*MX1*, 15U Empty Cab Blank Door, Titania
FP1009	*MX1*-NZ Remote Fire Brigade Panel
FP0991	*MX1*-AU Remote Fire Brigade Panel (Slimline)
FP0771	I-HUB Upgrade Kit
FP0986	PIB Panel-Link IP Bridge
FP1012	*MX1* DIN Module Mtg Bracket c/w Mtg Screws
FA2417	*MX1*,Index, Front Service
FP1056	*MX1* AS1668 Fan Control 3U 12W Door (2 Controls)
FP1057	*MX1* AS1668 Fan Control Expansion Kit (2 Controls)
FP0944	*MX1*-NZ Empty Slimline Cabinet (cream)
PA0862	General Purpose SGD (with Switches)
PA0861	General Purpose Brigade Relay Interface

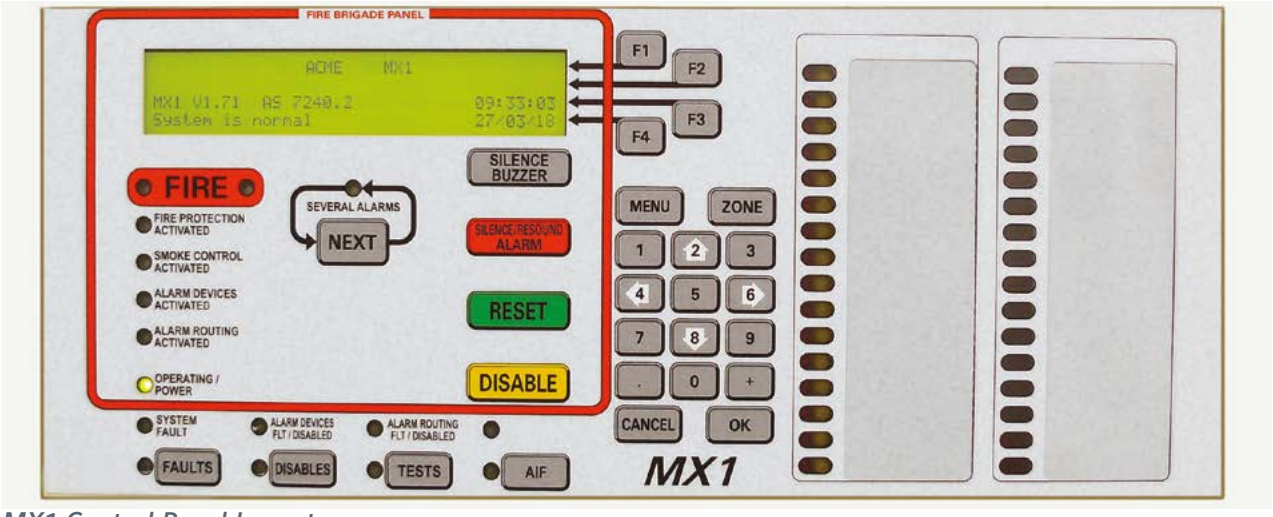
Picture Frame Display (PFD) Mk2 and LED-RZDU are also used as display units with *MX1.*

Spares

FA2416	Index, Rear Service
FP0913	*MX1* LCD Module Kit
FP0990	*MX1*-NZ Slimline door c/w PCB, hinges, keyswitches
FP1062	DDM800/*MX* Module Brkt
FP1063	4xDDM800 on FP1062
ME0448	*MX1* PSU assy 1982-26
PA1010	PCB assy,1982-1, LCD/ keyboard - **use FP0990**
PA1057	MX1 LCD Keyboard
PA1081	PCB assy,1982-2, *MX1* controller
LM0319	Loom, *MX1* main board to T-Gen 50
LM0335	Loom,LCD/keybd to 1st zone display,R/S
LM0084	FRC,10W,style B 350mm
LM0324	FRC,10W,style B, 900mm (LCD/Keybd to Controller)
LM0291	FRC,26W,style B, 270mm (between zone displays)
LB0600	Label, *MX1*,blank zone label,grey (sheet of 5 supplied with panel)
BA12170	Battery, 12V, 17Ah
LT0344	*MX1*-NZ, Operator Manual
LT0360	*MX1*-NZ, Installation Guide
SF0281	PanelX
SF0332	*MX1*CAL
SF0392	*MX* Loop Card Firmware



MX1 System Diagram



MX1 Control Panel Layout

MX4428 Fire Alarm System

- *MX VIRTUAL* multi-sensor analogue addressable detectors
- *SMARTSENSE* and *MX FASTLOGIC* (fuzzy logic) detection algorithms
- Heat-enhanced photoelectric smoke and CO fire detectors
- Compatible with wide range of collective detectors including Intrinsically Safe types
- Complies with AS 4428.1 and NZS 4512
- LCD Firefighter Facility (FF) and optional zone LEDs
- LCD zone description text with optional point text for each detector
- Event logging to internal history file and printer
- Remote repeater panels, colour graphics displays
- "Tandem" mode for remote control panel access
- High level EWIS, BMS interface
- Multi-panel networking available
- Programmable outputs for Warning System, External Alarm (strobes & bells) and Ancillary Control
- Flow switch monitoring and remote testing
- AS 1668 air-handling smoke detection and control
- Powerful, field-programmable logic equations and timers
- Built-in clock/ calendar with automatic daylight saving adjustment
- Comprehensive test facilities
- Automatic system self-tests
- Automatic battery connection and capacity tests
- Integral charger (5A, 10A)

The VIGILANT MX4428 is an intelligent distributed multi-processor fire alarm and fire protection control system, which combines both analogue addressable and non-addressable detection. It features intelligent fire detection algorithms, powerful control programmability and multi-panel networking to handle the most complex applications.

MX4428 supports the *MX* multi-sensor virtual detectors (Photoelectric and Heat, CO and Heat, Ionisation only, heat-only) and a range of functional bases, analogue addressable callpoints, input modules, and output modules. Smoke/CO and temperature readings from the multi-sensor detectors are able to be combined in various ways to achieve optimum detection for each location.

The MX4428 is suitable for sprinkler flow switch monitoring and remote testing, AS 1668 air-handling smoke detection and control.

- Comprehensive test facilities
- Automatic self tests
- Field-programmable
- LCD control panel
- Optional Zone LEDs
- LCD zone description text and/or individual point text

Powerful boolean logic functions for output control and network communications allows control and indication of other panels and devices.
Printer logging includes zone text and point events.
Outputs for:

- Door holders
- Local mimics
- Remote repeater panels
- Colour graphics displays
- High level interface for EWIS, BMS, etc.

MX VIRTUAL multi-sensor analogue addressable detectors utilise dual sensors (photoelectric and heat, or CO and heat) to allow the best detection mode for a situation to be selected without having to physically change detectors.

Detection modes may include:

- Smoke/ CO detection only
- Heat-enhanced smoke/ CO detection only
- Smoke/ CO plus heat detection
- Heat-enhanced smoke/ CO plus heat detection
- Heat-only detection can be fixed temperature, or also include rate-of-rise.

For specific applications, ionisation smoke and heat-only detectors are also available. *SMARTSENSE* or *MX FASTLOGIC* detection algorithms can be programmed for each detector to allow the detection capabilities of the system to be further optimised.

Up to 200 *MX* devices (detectors and addressable input / output modules) may be connected to the *MX* detection loop, which terminates at an *MX* Protocol (MXP) responder.

Approvals
The MX4428 complies with New Zealand Standard NZS 4512:2010 "Fire Detection and Alarm Systems in Buildings" and meets the NZ Fire Service requirements for connection to remote receiving stations.
FPANZ Listing Number VF/117
Loop Booster Unit FPANZ Listing Number VF/613

Specifications

Dimensions
Cabinet Dimensions (HWD)

FZ1190/FZ1191	15U - 750 x 550 x 211 mm
FZ1192/FZ1193	18U - 885 x 575 x 205 mm

Part Numbers
Standard Panel Configurations

FZ1190	MX4428, 15U, Wind, 48Z SGD I/F
FZ1191	MX4428, 15U, Blank, 48Z SGD I/F
FZ1192	MX4428, 18U, Wind, 112Z SGD I/F
FZ1193	MX4428, 18U, Blank, 112 Z SGD I/F
FP0487	Loop Booster Unit 1901-36
BA12240	Battery 12V, 24Ah
BA12400	Battery 12V, 40Ah

Larger cabinets built to order up to 40U

Options

FP0475	Display Extender Kit incl 0.5m FRC
FP0827	Standard Network Kit (comprises hardware, LT0143, PA0773, LM0172)
PA0483	PCB Assy,1901-103,unprot Term.PCB
PA0753	PCB assy,1901-25-7, PFD 16 Alarm LED
FP0771	I-HUB networking kit
ME0433	T/Evac & Silence Alarm sw. on plate

Responders

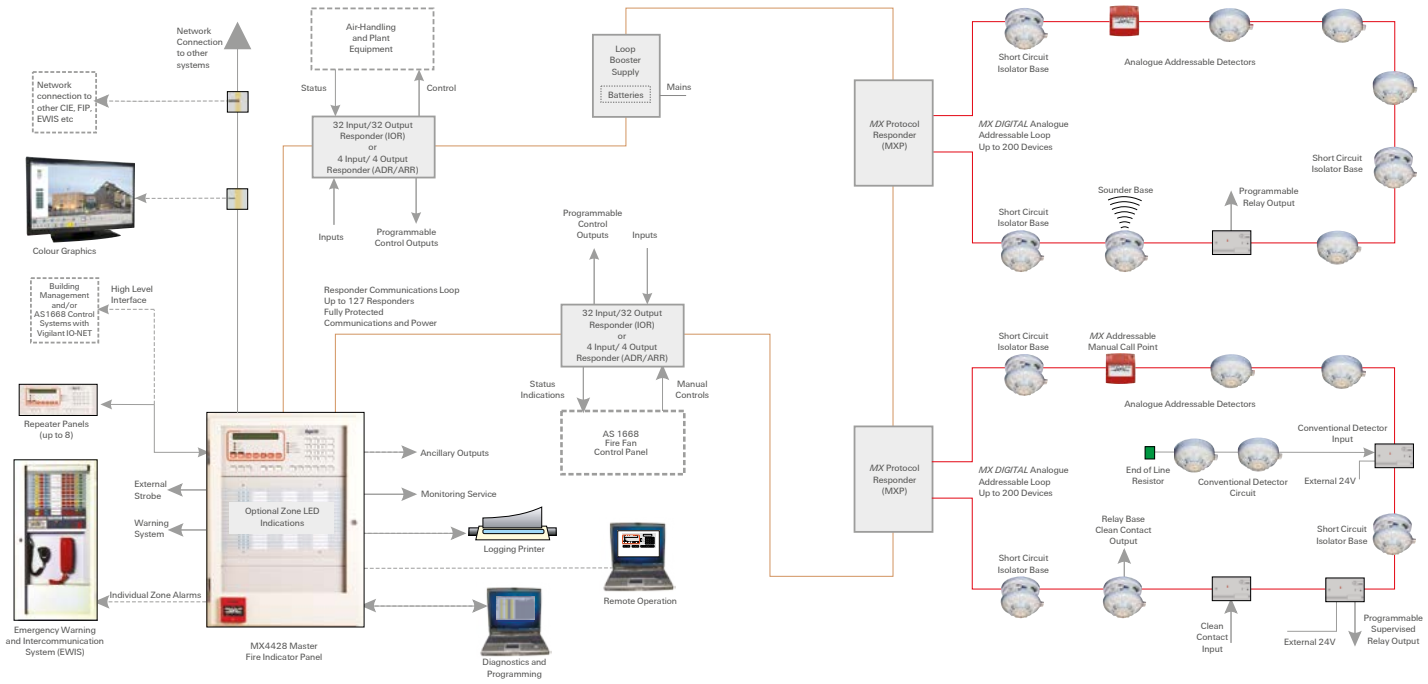
FP0507	EOL002B Pulsing EOL
FP0529	Empty ADR/MPR box
FP0575	Multi Prot. Resp (MPR)1901-141 in box
PA0453	RRM PCB assy 1901-15
PA0473	IOR PCB 32 in/32 out 1901-72

(See Addressable Responders section, page 34 for companion input/output boards)

PA0497	ADR PCB assy 1901-116 4mA
PA0713	MPR PCB assy 1901-141
PA0815	ADR-M 4mA 15V MCP 1901-116
FP0824	MXP Responder in box
PA0844	ADR-M 2.5mA 3k3 EOL PCB
PA0893	MXP Responder PCB only
PA1038	MXP Responder Loop Filter PCB

Spares

FA2150	MX4428 Keyboard Membrane overlay
ME0444	FA2150 on 4U Door
FP0820	F4000-MX4428 19in Rack Conversion Kit
FP0814	MX4428 Software Upgrade Kit
ME0476	MX4428 Power Supply 24V 5A
IC0320	F4000 IC 28C64 8K EEPROM
HW0040	Lock A/CR16/01/3B/N04 003 Keyed
PA0463	F4000 Loop Booster PCB 1901-35
PA0481	F4000 RZDU/RS232 I/F PCB 1901-100
PA0482	F4000 Memory LCD I/F PCB 1901-102
PA0499	NZ Display Extender common FDN LEDs
PA0711	RS485 comms CMOS PCB 1901-139-1
PA0712	RS485-RS232 Comms PCB 1901-139-2
PA0751	F4000 main PCB no software 1901-12
PA0773	RS485 coms CMOS PCB FRC 1901-139-3
PA0890	PCB AS4428 keyboard/LCD module
PA0891	PCB AS1603 keyboard/LCD module
PA1040S	MX4428 Main bd incl. Mem-LCD I/F, S/W
SF0262	MX4428 Master Software V3.15NA
SF0349	MX4428 Master Software V3.22N
SM0031	FA1201 F4k LCD keybd overlay (AS1603.4)
LM0041	Programming lead



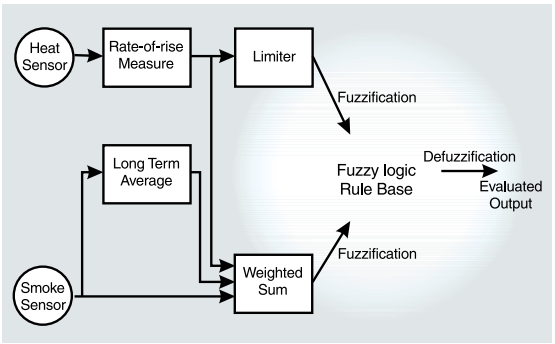
MX4428 System Diagram

Responder Loop Design

Central to the MX4428 system is the proven "Responder Loop" architecture, which allows intelligent responders to be either distributed at selected locations around the protected premises, or located centrally at the FIP. Analogue addressable loop wiring and other inputs and outputs are terminated at these responders, which in turn are connected by the 4-wire responder loop to the FIP.

The responder loop is fully protected: a partial or complete break, or short, anywhere on the loop is detected and isolated automatically at the adjacent responders. All system operations are fully maintained even in the presence of the fault condition. This design offers many benefits:

- Cable concentration at the master FIP is greatly reduced.
- Installed cost is lower because the loop design requires less wiring than conventional methods.
- Compatibility with many existing conventional and analogue addressable systems, providing a ready upgrade path.
- Ideal suitability as a main panel upgrade with old sub-panels connecting via responder inputs.
- High-integrity communications is fully supervised and protected by redundant paths.
- Loop fault sensing and isolation is provided at every responder.
- Intelligent diagnostics identifies location of faults rapidly.
- Expansion and alterations are easily accommodated with minimal additional wiring.
- Responder Loop Boosters permit virtually unlimited loop length.
- No additional multicore wiring is required for AS 1668 controls, but optional use of dedicated IO-NET (PLC) system is also possible.



MX FASTLOGIC

Detection Algorithms

SMARTSENSE is a field-proven, reliable detection algorithm, providing unwanted alarm reduction, compensation for ambient conditions and a wide range of programmable sensitivity settings.

MX FASTLOGIC is a "fuzzy logic" based algorithm applied to photoelectric smoke and heat enhanced smoke detection, and designed to differentiate between the smoke and temperature patterns of real fires and typical causes of unwanted alarms.Both algorithms provide:

- Detector pre-alarm sensing for early warning of a potential alarm.
- Compensation for soiling and changes in ambient conditions.
- Logging "detector dirty alert" when compensation limits are about to be exceeded, to allow maintenance to be scheduled.
- Heat sensor can be programmed to act independently as a Heat Detector

MX4428 Rack Cabinet Specifications

Cabinet Size		15U	18U	21U	28U	40U
Number of extender inner doors:	Master	1	2	2	3	3
	Extender	2	2	3	4	4
Maximum number of LED displays:	Master	64	128	128	192	192
	Extender	128	128	192	256	256
Spare space at bottom:	Master	4U	0U	3U	3U	15U
	Extender	1U	4U	0U	0U	12U
Standard size gearplates (max.):		1	1	1	2	3
Overall Height (mm):		750	885	1050	1330	1865
Overall Width (mm):		550	575	575	575	575
Overall Depth (mm):		211(176 int.)	205/380	350(310 int.)	205/380	205/380 (135 or 310 internal)
Cabinet Material:		1.2mm M.S.	1.6mm M.S.	1.6mm M.S.	1.6mm M.S.	1.6mm Mild Steel
Cabinet Finish:	Baked epoxy powdercoat, Cream Wrinkle BFF998CW					

MX TECHNOLOGY Analogue Addressable Modules

AZM800 Apartment Zone Module

The AZM800 is a loop-powered *MX* Addressable module which cost-effectively integrates many of the key functions required for Type 5 fire alarm systems as defined in the NZ Building Code Compliance Documents, and in particular providing "hush"-able local alarm functions with brigade calling heat detectors and call points on the same circuit.

- Switching and supervision of local 100V speaker line spur (1 or 2 branch)
- Integral short circuit isolator (SCI)
- Conventional detector/MCP circuit
- Integral and remote "hush" button
- Programmable control relay
- Compatible with *MX1* and MX4428

Specifications

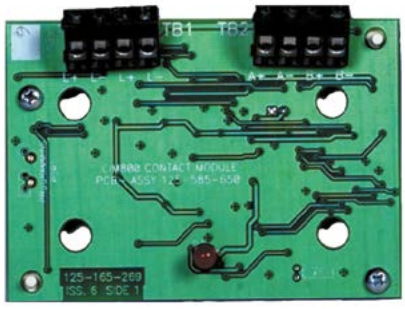
Operating Voltage[1]	22 to 40Vdc
Quiescent Current	4mA (typ)
Alarm Current	17mA (max, LED on)
Circuit Resistance	10 Ohm (max.)
ELD Resistor	9k1/18k Ohm
Local 100V spur	10W, 56k Ohm ELD
Ambient Temp	-10°C to +45°C
Relative Humidity	10% to 95% (n/cond)
Dimensions (HWD)	118 x 75 x 34 mm
FPANZ Listed	VF/653 (FP0959) VF/654 (FP0962)

Part Numbers

FP0959	AZM800
FP0962	Remote Hush Unit

1. *MX* addressable loop voltage

CIM800 Contact Input Module



The CIM800 Addressable Contact Input Module monitors and supervises 2 circuits of voltage-free contacts such as outputs from extinguishing systems, ventilation controls, fire door controls, sprinkler flow switches, non-indicating hard contact detectors, etc. The LED illuminates when any input goes into alarm and can be programmed to blink when polled by the CIE. The CIM800 can be configured to monitor:

- Two circuits of multiple N/O contacts; with short circuit alarm.
- Two circuits of multiple N/C contacts; open circuit alarm.
- Two circuits with a single N/O contact closing for alarm; with short circuit fault. (Requires a resistor in series with the alarm contact and special CIE programming).

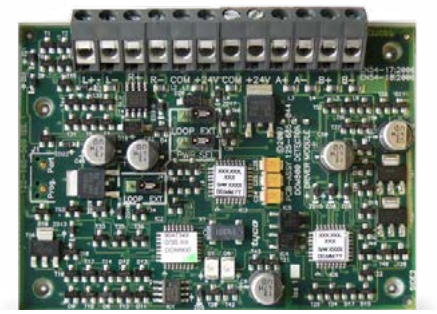
The two circuits may be recognised as a single point or two separate points. Refer to the specific *MX* fire alarm panel specification.

Specifications

Operating Voltage[1]	20 to 40Vdc
Quiescent Current	275µA (max.)
Alarm Current (max.)	2.8mA (LED on)
Circuit Resistance	10 Ohm (max.)
ELD Resistor	200 Ohm (supplied)
Alarm Resistor	100 Ohm (s/c fault)
Ambient Temperature	-25°C to +70°C
Relative Humidity	10% to 95% (n/cond)
Dimensions (HWD)	61 x 84 x 25mm
ActivFire Listed	afp-1446
FPANZ Listed	VF/640
Part Number	CIM800

1. *MX* addressable loop voltage

DDM800 Universal Fire & Gas Detector Module



The DDM800 Detector Module designed to monitor and signal alarms from:

- One or two conventional 2-wire circuits
- One or two 4-20mA sensors (MX4428 only).

The DDM800 may be used to connect two circuits of conventional 20V detectors and interface them with an *MX* addressable fire alarm system.

The DDM800 can be loop powered and use low-voltage detectors, or use an external 24Vdc supply allowing a wider range of detectors to be used - and be electrically isolated from the *MX* loop .

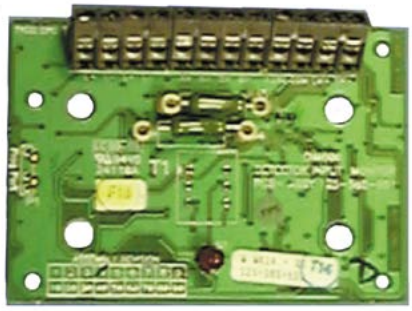
In 4-20mA mode the DDM800 can support a single 4-20mA source on each circuit, operating in either current sink or current source mode.

Specifications

Operating Voltage[1]	20 to 40Vdc
Quiescent Current	1.5mA (LV. mode)
Loop Alarm Current	2.8mA (max.)
Ambient Temp	-25°C to +70°C
Relative Humidity	10% to 95% (n/cond)
Detector Load	3mA (max per input)
Detector ELD	4k7 Ohm
External Supply[2]	21.9 to 29Vdc
Ext. Current/Circuit	10mA (+ Det. Load)
Ext. Alarm Current[3]	52mA
Dimensions (HWD)	61 x 84 x 25mm
ActivFire Listed	afp-1446
FPANZ Listed	VF/666
Part Number	577.800.006

1. *MX* addressable loop voltage 2. Voltage restrictions for some detectors 3. External Supply Alarm / Short Circuit

DIM800 Detector Input Module



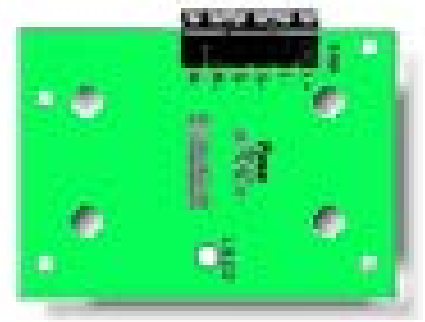
The DIM800 Detector Input Module interfaces two collective detector circuits onto the *MX* addressable loop.
Each circuit can support 3mA of detector quiescent current and requires a 4k7 Ohm End Of Line resistor. The two circuits may be recognised as a single point or two separate points. Refer to the specific *MX* fire alarm panel specification.
Unused circuits must be terminated with an ELD resistor.
The DIM800 requires a suitably rated and separately protected external 24V supply to power the detector circuits.

Specifications

Operating Voltage[1]	20 to 40Vdc
Quiescent Current	100µA (max.)
Loop Alarm Current	170µA (max.)
Detector Load	3mA (max per input)
Detector ELD	4k7 Ohm
External Supply[2]	20 to 28.7Vdc
Ext. Current/Circuit	7.5mA (normal)
Ext. Alarm Current[3]	30 to 50mA
Ambient Temp	-25°C to +70°C
Relative Humidity	10% to 95% (n/cond)
Dimensions (HWD)	61 x 84 x 25mm
ActivFire Listed	afp-1446
FPANZ Listed	VF/643
Part Number	DIM800

1. *MX* addressable loop voltage 2. Voltage restrictions for some detectors 3. External Supply Alarm / Short Circuit

LIM800 Line Isolator Module



The LIM800 Line Isolator Module is designed to be used on the *MX* addressable controller loop circuits. It monitors the line condition and when detecting a short circuit will isolate the affected section whilst allowing the rest of the addressing circuit to function normally.
The purpose of the LIM800 Line Isolator Module is to ensure that, on a looped addressable system, no short circuit fault can disable more detection devices than would be lost on a conventional non-addressable fire circuit

Specifications

Operating Voltage[1]	20 to 40Vdc
Current Loading	
Input Current (max.)	80µA (normal)
	3.5mA (tripped)
Max. Series Resist.[2]	0.25 Ohm
Ambient Temp	-25°C to +70°C
Relative Humidity	10% to 95% (n/cond)
Dimensions (HWD)	61 x 84 x 25mm
ActivFire Listed	Pending
FPANZ Listed	VF/657
Part Number	LIM800

1. *MX* addressable loop voltage.
2. Isolator normal.

MIM800/MIM801 Mini Input Modules

The MIM800 Mini Input Module monitors a voltage-free contact and transmits its state to the CIE. It can be programmed to monitor either Normally Open (default) or Normally Closed contacts. The MIMs can be programmed to monitor:

- One circuit of multiple N/O contacts, with short-circuit alarm.
- One circuit of multiple N/C contacts, with open-circuit alarm.
- One circuit with a single N/O contact, closing for alarm, with fault detection for short-circuit.

The MIM801 is optimised for N/C applications and can generate an interrupt (only used when a fast response is required) on an open circuit.

MIM800/MIM801 can operate an E500 Mk2 Series Remote Indicator. The input wiring must be as short as possible (less than 1m) and located well away from all electrical noise sources.

Specifications

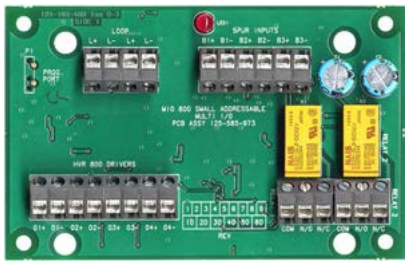
Operating Voltage[1]	20 to 40Vdc
Quiescent Current	275µA (typ)
Alarm Current	2.8mA (max, LED on)
Circuit Resistance	10 Ohm (max.)
ELD Resistor	200 Ohm (supplied)
Alarm Resistor	100 Ohm (s/c fault)
Input Cable Length	1m (maximum)
Ambient Temp	-25°C to +70°C
Relative Humidity	10% to 95% (n/cond)
Dimensions (HWD)	57 x 48 x 13mm
ActivFire Listed	afp-1446 (MIM800)
FPANZ Listed	VF/641 (MIM800)
	VF/645 (MIM801)

Part Numbers

MIM800	MIM800 (Aus/NZ)
FP0837	MIM801 (NZ)

1. *MX* addressable loop voltage

MIO800 Multi-Input Output Module



The MIO800 is a general purpose interface module for use with *MX TECHNOLOGY* fire detection systems. It allows multiple input and output connections to be made between external equipment and the *MX DIGITAL* loop. Three inputs and two relay outputs are provided. Each input on the MIO800 supports one of the following modes:

- Multiple N/O contacts, closing for alarm, with open-circuit fault.
- A single N/O contact, closing for alarm with short-circuit and open-circuit faults.
- Multiple normally-closed, open for alarm contacts with short-circuit faults.
- A single N/C contact, opening for alarm, with short-circuit and open-circuit faults.

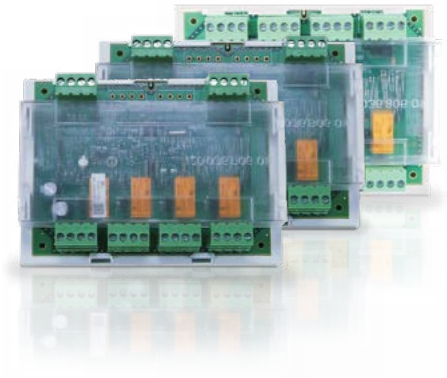
The MIO800 includes two unsupervised change-over relay outputs, labelled Relay 1 and Relay 2. These relays can be controlled by programming of the CIE.

Specifications

Operating Voltage[1]	20 to 40Vdc
Quiescent Current	700µA (max.)
Alarm Current	6.25mA (max,LED on)
Relay Contact	2A @ 24Vdc (max.)
Ambient Temp	-25°C to +70°C
Relative Humidity	10% to 95% (n/cond)
Dimensions (HWD)	72 x 110 x 18mm
ActivFire Listed	pending
FPANZ Listed	VF/655
Part Number	MIO800

1. *MX* addressable loop voltage

QIO850/QMO850/QRM850 Quad I/O Modules



The *MX* Quad Ancillary Modules form a versatile new range of multiple input and output modules for use with *MX TECHNOLOGY* systems[1].
QIO850 - Quad Input / Output module – provides four monitored inputs and four relay outputs
QMO850 - Quad Monitored Output module – provides four monitored outputs
QRM850 - Quad Relay Output Module – provides four relay outputs

The modules are ideal for applications such as:

- AS 1668 fan control interfaces
- Plant or security outputs, or when large numbers of inputs and/or outputs are required.

Specifications

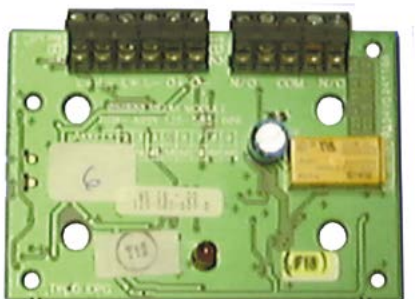
	QIO850	QMO850	QRM850
MX Loop Voltage	20-40Vdc		
Quiescent Current	0.58mA	1.2mA	0.58mA
Alarm Current	3.6mA	4.2mA	3.6mA
Relay Output	2A@30Vdc		
Aux. Voltage Input	20-55Vdc		
Input States	Short cct	-	-
	Alarm	-	-
	Normal	-	-
	Open cct	-	-
Input EOL	3k3 Ohm	-	-
Dimensions (HWD)	134 x 103 x 49 mm		
Weight	232g		
Ambient Temp.	-25°C to +70°C		
Storage Temp.	-40°C to +80°C		
Relative Humidity	10% to 95% (n/cond.)		
ActivFire Listed	afp-2320		
FPANZ Listed	pending		
Part Numbers			
Modules	555.800.071	555.800.070	555.800.073
IP66 Enclosure	557.201.410	557.201.410	557.201.410

1. The *MX* Quad Ancillary Modules are not supported by the MX4428 CIE.

Features common to the Quad Modules are:

- Built-in *MX* loop short-circuit isolator with fault indication at the *MX1* CIE[1] when operated
- IR link for programming by 850EMT
- Selectable interrupt operation to speed up response
- Enclosed in protective plastic housing, with an optional IP66 enclosure available for applications in challenging environments
- Top-hat DIN rail mounting
- LED indication of each output state
- 24V/48V link selectable Auxillary supply for outputs
- Supervision of Auxillary supply for presence
- Fault indication of stuck relay contacts - not operating when switched on.

RIM800 Relay Interface Module



The RIM800 Relay Interface Module provides one volt-free changeover contact which is not supervised. The relay is controlled by a command sent from the CIE via the addressable loop and may be used to signal a state to other systems (security systems, for example) or to energise loads such as Door Holders. The relay operation is determined by the CIE programming. The RIM800 has a red LED which may be configured to indicate relay activation and CIE polling. Note that the RIM800 cannot be used to switch mains voltage directly.

Specifications

Operating Voltage[1]	20 to 40Vdc
Quiescent Current	285µA (max.)
Alarm Current	2.8mA (max, LED on)
Relay Contact	2A @ 30Vdc (max.)
Ambient Temp	-25 to +70°C
Relative Humidity	10% to 95% (n/cond)
Dimensions (HWD)	61 x 84 x 25mm
ActivFire Listed	afp-1446
FPANZ Listed	VF/642
Part Number	RIM800

1. *MX* addressable loop voltage

SAB801 Sounder Addressable Beacon & SAM800 Sounder Addressable Module

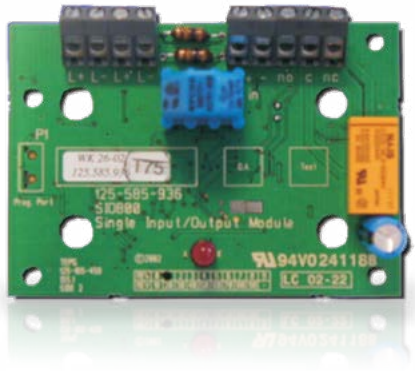
SAB801 SAM800

The Sounder Addressing Beacon SAB801 and Sounder Addressable Module, SAM800 are designed to control an *MX* loop powered sounder base or relay base for use with compatible *MX* CIE. The SAB801 has an integral high intensity red LED beacon that can be separately controlled to the base. The beacon can be configured to illuminate continuously or flash at 1Hz, although there is no facility to synchronise several SAB801 beacons. The SAB801 and SAM800 supply the address decoding in place of a detector, thus providing a remotely controlled beacon and sounder when used in conjunction with an 802SB.

Specifications

	SAB801	SAM800
Quiescent Current	250µA	
Alarm Current	325µA	250µA[1]
Max. device/Loop	200/250	
Flash Rate	Cont. or 1Hz	–
Dims (Dia.x H mm)	108 x 32	108 x 22
Weight	70g	
Ambient Temp.	-10°C to +55°C	
Relative Humidity	10% to 96% (non-cond.)	
ActivFire Listing	Pending	
FPANZ Listed	VF/420	VF/656
Part Numbers	516.800.956	516.800.954
(NZ Only)	SAB801	SAM800
Sounder Cap Mk2	557.001.040	

SIO800 Single Input/Output Module



The SIO800 Addressable Single Input/Output Module provides a monitored input and a voltage-free changeover relay output. The input is suitable for monitoring a voltage-free clean contact with open circuit and short circuit wiring fault detection. The relay is controlled by a command sent from the CIE, via the *MX* addressable loop. The LED illuminates when the input goes into alarm, and can also be programmed to blink when polled by the CIE. The SIO800 input is capable of identifying and signalling to the CIE the following conditions: Normal, Alarm, Input short-circuit, Input open-circuit.

Specifications

Operating Voltage[1]	20 to 40Vdc
Quiescent Current	300µA (max.)
Alarm Current	3mA (max, LED on)
Circuit Resistance	10 Ohm
Relay Contact Rating	2A @ 24Vdc (max.)
EOL Resistor	3k3 Ohm
Alarm Resistor	680 Ohm
External 24V Supply	18 to 28Vdc
Ambient Temp	-25 to +70°C
Relative Humidity	10% to 95% (n/cond)
Dimensions (HWD)	61 x 84 x 25mm
ActivFire Listed	pending
FPANZ Listed	pending
Part Number	555.800.063

1. *MX* addressable loop voltage

SNM800 Sounder Notification Module

The SNM800 Sounder Notification Module can be used to switch an external power source to sounders, extinguishing devices or other auxiliary equipment. The output is activated in response to a command from the CIE. The wiring to the controlled devices can be supervised for open and short circuit fault conditions and the external power source for the devices can be optionally supervised. Each output device (sounders etc.) must have a suitable diode wired in series (if not already contained in the device) so that the whole line is supervised up to the End of Line Device (27k resistor).

Specifications

Operating Voltage[1]	20 to 40Vdc
Quiescent Current	450µA (max.)
Alarm Current	3mA (max, LED on)
Output Current	2A @ 30Vdc (max.)
Output ELD	27k Ohm 0.5W
External 24V Supply	18 to 28Vdc
Ambient Temp	-25 to +70°C
Relative Humidity	10% to 95% (n/cond)
Dimensions (HWD)	61 x 84 x 25mm
ActivFire Listed	afp-1446
FPANZ Listed	VF/644
Part Number	SNM800

1. *MX* addressable loop voltage

VIO800 VESDA Interface Kit

The VIO800 is an arrangement of the MIO800 Addressable Multi-I/O Module supplied ready to be fitted on to a VESDA LaserPLUS or Laser SCANNER. The MIO800's inputs and outputs are wired to the relay outputs and control inputs of the LaserPLUS or Laser SCANNER to allow compatible *MX* CIE to monitor and control the VESDA units.

Specifications

Operating Voltage[1]	20 to 40Vdc
Quiescent Current	480µA (max.)
Operated Current	3mA (max, LED on)
Relay Contact	2A @ 24Vdc (max.)
Ambient Temp	-25 to +70°C
Relative Humidity	10% to 95% (n/cond)
Dims. PCB (HWD)	72 x 110 x 18mm
ActivFire Listed	afp-2320
FPANZ Listed	VF/655

Part Numbers

516.018.014	VIO800 (Aus)
VIO800	VIO800 (NZ)

1. *MX* addressable loop voltage

MX Loop Filter (Interference Suppression)

The MXP Loop Filter board is available for fitment to an MXP in order to further improve common-mode interference tolerance as may be required as a result of the *MX* detector loop not being adequately separated from power wiring, lift motors etc.

Part Number

PA1038	MXP Loop Filter

MX Loop Tester

The *MX* Loop Tester can be used to test, commission and fault-find a loop of *MX* analogue addressable detectors and ancillary devices, without having to connect the loop to a fire panel. Up to 250 *MX* devices may be connected. One Person Installation Mode allows new devices to be installed and field tested to confirm operation. Addressing Mode automatically sets the addresses of any un-programmed device that is added. Walk Test Mode provides a fast alarm response. A laptop (running a terminal program) connected to the unit can be used for operation, display and additional tests and commands.

Specifications

Power Source	24V batteries or 230VAC to 24V/3A plug pack
Dimensions[1] (HWD)	220x122x46mm
Dimensions[2] (HWD)	250x250x70mm
Weight [3]	2kg

Part Numbers[4]

FP0898	Aus/NZ version
SU0256	AC Adaptor Plug Pack

1. Unit only 2. Carry Bag 3. Excluding batteries
4. FP0898 includes test unit, carry bag, 230VAC plug pack, manual and loom.

850EMTK *MX* Engineering Management Tool Kit

850EMTK Engineering Management Tool Kit

850EMT Engineering Management Tool

Specifications

Batteries	6xAA NiMH
Batt. Operating Time	up to 15 hours
Ambient Temp	0 to +50°C
Relative Humidity	10% to 90% (n/cond)
Dimensions[1] (HWD)	50x210x125mm
Weight[1]	600g incl. batteries

Part Numbers

850EMTK	850EMT Tool Kit
516.850.905	Stylus
516.800.922	Ancillary Lead
516.850.923	Carry Case & Acc.
516.800.924	Anc. Lead Spare Pins

1. For 850EMT unit only

MX Module Housings

A variety of ancillary housings are available to fit the *MX* ancillaries. The standard sized modules (CIM800/DIM800/DDM800/LIM800/LPS800/RIM800/SNM800) are mechanically compatible with all options. The *MX* range of Addressable Modules can be fitted to a double gang back box or an empty responder box. The double gang back boxes are availble in PC/ABS or aluminium. The responder box is galvanised mild steel and is supplied pre-drilled for up to 4 *MX* modules, with 16 PCB standoffs.
For *MX1* installations, the *MX1* loop card mounting bracket (FP1027) provides mounting for 2 standard *MX* modules or 1 large *MX* module (MIO800).

K2142 Double Gang Back Box - Surface Mount

Specifications

	K2142	M520
Dims	85x146x38	87x148x14
Material	PC/ABS	PC/ABS
Part No	517.035.010	517.035.007

Dimensions shown in format HWD. Units in mm.

M520 *MX* Module Cover incl. PCB cover and screws.

517.035.011 K2214 Aluminium Back Box

Specifications

	K2214	QFB/2
Dims	86x146x40	85x146x38
Material	Aluminium	PC/ABS
Part No	517.035.011	517.035.015

Dimensions shown in format HWD. Units in mm.

517.035.015 QFB/2 Flush Mount Back Box

FP0529 Empty Responder Box showing 2 standard *MX* modules fitted. The recommended module mounting combinations are:
- 4x standard modules (CIM800/DIM800/DDM800/LIM800/LPS800/RIM800)

or 2x large modules (MIO800)
or 2x standard modules and 1x large module
or 1x responder (ADR/MPR/MXP)

Hardware included:-
- 16 x HW0130 plastic PCB stand-offs
- 2 x HW0168 1" body plugs, fitted to box
- 4 x HW0310 M3 x 10 hex Nylon barrel nut
- 1 x LB0283 FP4000 Responder wiring label
- 1 x LB0296 F4000 ADR wiring label
- 1 x LB0370 F4000 MPR wiring & config label
- 1 x LB0568 F4000 MXP wiring label
- 8 x SC0172 M3 x 6 Pan Head Phillips screws
- 1x LT0401 Instructions

Specifications

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

Part Numbers

FP0529	Responder Box
FP1027	*MX1* Loop Card Brkt (not shown)

D800 IP55 Enclosure

The D800 Ancillary Housing provides an IP55 rated enclosure for all *MX* modules. It incorporates a window to view the module LED.

Specifications

Dimensions (HWD)	140 x120 x70 mm
Material	PC/ABS
Ingress Protection	IP55
Part Number	557.201.401

DIN Rail Mounting Bracket Kit and Accessories

547.004.002 DIN Rail Mounting Bracket

DIN Rail Mounting Bracket shown with RIM800 (not included).

The DIN Rail mounting bracket enables DIN mounting of a standard sized module (not MIO800). Clip-on PCB mounting pillars are included. Will fit standard 35mm DIN Rail.

Part Number

547.004.002	DIN Rail Mtg Brkt

DIN Rail Mounting Kit for MIO800

DIN Rail Mounting Kit shown with MIO800 (not included), fitted on DIN rail (not included)

Specifications

Dimensions (HWD)	78 x113 x 31 mm
Material	PC/ABS
Part Number	557.201.303

GEN6 *MX TECHNOLOGY* Analogue Addressable Detectors

850PC Photo Smoke, Carbon Monoxide and Heat Multi-sensor Detector

For life protection and when the environmental conditions are challenging, the 850PC detector provides the ultimate in detector performance and nuisance alarm rejection. It is a multi sensor that monitors smoke, heat and CO levels in concert to accurately determine the presence of fire. Applications include industrial, retail, transport hubs, and healthcare. Its nuisance alarm rejection properties make it the ideal choice for hotel bedrooms where steam from bathrooms is a common source of nuisance alarms.

Specifications

Operating Voltage[1]	20 to 40Vdc
Quiescent Current	370µA (typ.)
Remote Indicator	E500 Mk2
Relative Humidity	15% to 90% (n/cond)
Ambient Temperature	-10°C to +55°C
Dimensions	109 dia x 43H mm
Weight	94g
ActivFire Listed	afp-2929
FPANZ Listed	VF/367 [2]
Part Number	516.850.054.E

1. *MX* addressable loop voltage
2. FPANZ listed as a heat detector as well as a smoke or CO detector using all multi-sensor algorithms.

850PH Photoelectric Smoke and Heat Multi-sensor Detector

With the ability to detect a wide range of fires from flaming to smouldering types, the 850PH combined photoelectric smoke and heat multi-sensor detector is the preferred choice for a range of applications including light industrial, retail and office environments. It operates in a number of approved modes and sensitivities that can be dynamically selected to suit different environmental conditions.

Specifications

Operating Voltage[1]	20 to 40Vdc
Quiescent Current	330µA (typ.)
Remote Indicator	E500 Mk2
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-25°C to +70°C
Dimensions	109 dia x 43H mm
Weight	76g
ActivFire Listed	afp-2930
FPANZ Listed	VF/363 [2]
Part Number	516.850.051.E

1. *MX* addressable loop voltage
2. FPANZ listed as a heat detector as well as a smoke detector.

850P Photoelectric Smoke Detector

More benign environments where any potential fire will be slow burning can be protected using the 850P optical detector. A choice of sensitivities and modes gives this detector a broad range of applications. All the 850 Series detectors have the capability to communicate with the 850EMT service tool via a bidirectional infrared link when connected to a VIGILANT *MX1* panel. This enables the detectors to be interrogated and programmed from the ground. No ladder required. In IR mode, the detector's LED flashes yellow to indicate when an IR link is established between it and the 850EMT.

Specifications

Operating Voltage[1]	20 to 40Vdc
Quiescent Current	330µA (typ.)
Remote Indicator	E500 Mk2
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-25°C to +70°C
Dimensions	109 dia x 43H mm
Weight	76g
ActivFire Listed	afp-2928
FPANZ Listed	VF/362
Part Number	516.850.052.E

1. *MX* addressable loop voltage

850H Heat Detector

The 850H detector's heat sensor can operate in fixed temperature or combined fixed temperature and rate-of-rise modes A2S, A2R, and the high temperature CS and CR modes. It is used in areas where the environment precludes the use of smoke detectors. All the 850 Series detectors feature an LED indicator which changes colour depending on the detector's state. With the system normal, the LED flashes red every 5 seconds when it is polled by the fire panel. Should a short-circuit occur, the LED will show yellow. If the detector is in alarm, the LED will show red.

Specifications

Operating Voltage[1]	20 to 40Vdc
Quiescent Current	290µA (typ.)
Remote Indicator	E500 Mk2
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	-25°C to +70°C
Dimensions	109 dia x 43H mm
Weight	81g
ActivFire Listed	afp-2927
FPANZ Listed	VF/218
Part Number	516.850.053.E

1. *MX* addressable loop voltage

801F Flame Detector

The 801F point type flame detector presents a cost-effective solution to providing high reliability flame detection for indoor applications. The 801F is designed for direct connection to the *MX* digital loop, employing the same universal detector base or functional base as the 850 series fire detectors. An intrinsically safe version is also available. The 801F is not supported by MX4428.

Specifications

Operating Voltage	20 to 40Vdc
Quiescent Current	300µA (typ.)
Range[1]	0.4m² n-heptane at 50m
Field of View	100º
Ambient Temperature	-20°C to +70°C
Relative Humidity	10% to 95% (non-cond)
Dimensions	109 dia x 22H mm
Weight	110g
Not ActivFire Listed	
FPANZ Listed	VF/354
Part Number	516.800.006

1. Distance measured on axis

VLC-800MX LaserCOMPACT

The VLC-800MX 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-800MX communicates directly with the *MX1* or MX4428 fire panel via the *MX* loop detecting smoke by using proven VESDA aspirating technology, dual stage filtration technology in combination with the versatility of the MX4428 and *MX1*. The VLC-800MX utilises a standard VESDA pipe design in accordance with the Aspire design tool.
Refer to the VESDA section for accessories.

Specifications

External Supply	18 to 30Vdc
Quiescent Current	225mA
Alarm Current	245mA
Ambient Temp	
Sensor Ambient	-10°C to +39°C
Sampled Air	-20°C to +60°C
Relative Humidity	10% to 95% (n/cond)
Alarm Sensitivity	0.005 to 20%Obs/m
Coverage Area	800 m²
Dimensions (HWD)	225x225x85mm
Weight	1.9 kg
ActivFire Listed	afp-1580
FPANZ Listed	VF/341
Part Number	VLC-800MX

MCP821 MX Addressable Indoor Manual Callpoint (MCP)

The MCP821 is an MX addressable manual callpoint (MCP) that is suitable for indoor applications.

It is supplied with a plastic resettable element, which deforms when pressed in to release a microswitch. The element is not destroyed and can be reused many times by resetting the MCP using the test/reset key provided.

A clear plastic cover, which must be lifted to gain access to the element, provides protection against accidental activation.

The MCP is easily tested using the test/reset key.

Activation is shown by a red alarm LED, which latches on until the element is restored and the fire panel alarm condition is reset.

The MCP includes a short circuit isolator for the MX loop, so that operation will continue even with a short circuit fault on one side of the MX loop. The LED indicator lights yellow to show that a fault is present.

The MCP is supplied with a surface mounting box, but can be flush mounted when a suitable flush-mount box, which is not supplied, is installed into the wall cavity.

The MCP is approved to NZS 4512:2010 and is FPANZ listed.

Specifications

Loop Voltage	MX compatible 20-40Vdc
Quiescent Current	280µA
Alarm State Current	2.8mA max
Quantity/Loop	250 (MX1); 200 (MXP)
Environment	Indoor application only
Ambient Temperature	-10 to 55°C
Storage Temperature	-30 to 70°C
Operating Humidity	Up to 95% non-condensing
Dimensions	105 x 93 x 62 mm (HWD)
FPANZ Listing	VF/684

Part Numbers

514.800.550	MCP821 Indoor MX Addressable MCP
SU0632	Replacement surface-mount back box
515.001.127	Replacement resettable element - blank (pack of 5)
FA2728	Replacement Resettable Element "Vigilant" (pack of 5)
SU0272	Spare plastic cover
SC070	Test/Reset Key (pack of 10)

MCP831 MX Addressable Outdoor Manual Callpoint (MCP)

The MCP831 is an MX addressable manual callpoint (MCP) that is suitable for outdoor applications.

It is supplied with a plastic resettable element, which deforms when pressed in to release a microswitch. The element is not destroyed and can be reused many times by resetting the MCP using the test/reset key provided.

A clear plastic cover, which must be lifted to gain access to the element, provides protection against accidental activation.

The MCP is easily tested using the test/reset key.

Activation is shown by a red alarm LED, which latches on until the element is restored and the fire panel alarm condition is reset.

The MCP includes a short circuit isolator for the MX loop, so that operation will continue even with a short circuit fault on one side of the MX loop. The LED indicator lights yellow to show that a fault is present.

The MCP is surface mounted using the integral back box. This provides an IP 67 level of protection to dust and water.

The MCP is approved to NZS 4512:2010 and is FPANZ listed.

Specifications

Loop Voltage	MX compatible 20-40Vdc
Quiescent Current	280µA
Alarm State Current	2.8mA max
Quantity/Loop	250 (MX1); 200 (MXP)
Environment	Outdoor application
Operating Temperature	-25 to +70°C
Storage Temperature	-30 to +70°C
Operating Humidity	Up to 95% non-condensing
Ingress Protection	IP67
Material	Flame Retardant ABS, glass reinforced
Dimensions	105 x 99 x 80 mm (HWD)
Weight	330g
FPANZ Listing	VF/685

Part Numbers

514.800.551	MCP831 MX Addressable Outdoor MCP
515.001.127	Replacement resettable element - blank (pack of 5)
FA2728	Replacement Resettable Element "Vigilant" (pack of 5)
SU0272	Spare plastic cover
SC070	Test/Reset Key (pack of 10)

1841*MX* Manual Call Point

The 1841 manual call point is a break-glass switch designed to meet the requirements for manual call points in fire alarm systems as specified in NZS 4512 "Fire Detection and Alarm Systems in Buildings". Conventional and Series 130 Addressable versions are also available.

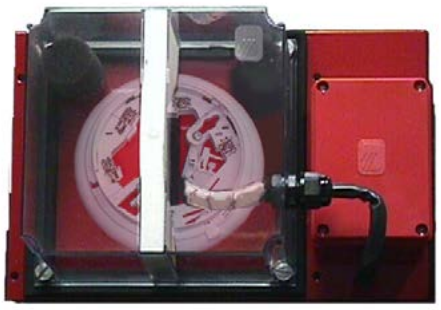
Part Numbers

FP0838	*MX* Flush "Wormald"
FP0839	*MX* Surface "Wormald"
FP1055	*MX* Surface no logo
FP1066	*MX* Flush no logo
FA1000	Spare Glass

Specifications

Dimensions (HWD)	
Surface	130 x 130 x 67 mm
Flush	130 x 130 x 13 mm
Cable Entry (surface)	20mm Conduit thread
Protection	IP23 (Surface)
Colour	Red - NZS 7702 #537
FPANZ Listed	VF/646

D51MX Duct Sampling Unit



The D51MX consists of a D51 duct sampling housing fitted with a 5B base wired to suit an *MX* analogue addressable 850P or 814P/850PH photoelectric smoke detector. When fitted with the detector the DSU is designed to sample air in air conditioning ducts and pass the air through the smoke detector. The D51MX is fitted on the outside of the duct to be sampled allowing easy access for detector servicing and replacement of the dust filters. To cater for most duct sizes, a sampling tube extension is available in 3 metre lengths. The E500 Mk2 Series Remote Indicators can be used for remote indication of an alarm.

Part Numbers

D51MX	Duct Sampling Unit
D51L	Baffle box of 10
D51F	Filter box of 10
FP09983	D51T3 3m Sampling Tube
D51K100	Sampling Tube End Cap (pkt of 10)

Specifications

Operating Voltage[1]	20 to 40Vdc
Quiescent Current	275µA (typ.)
Alarm Current	10mA with LED on
Duct Pressure[2]	-1.15 to +3.0 kPa
Duct air velocity for alarm at 8%Obs/m[2]	1, 2, 4, 8m/s
Sampling Tube Length	160mm minimum
Duct Width (maximum)	1.8m
Remote Indicator	E500 Mk2 Series
Dimensions	
Base & Cover (LWH)	278x190x113 mm
Sampling Tube Pitch	122mm
Duct Holes Req'd	24mm dia. x 2 places
Ambient Temperature	-10°C to +55°C
Relative Humidity	10% to 95% (n/cond)
ActivFire Listed[3]	afp-1496

1. *MX* addressable loop voltage provided by *MX* CIE.
2. AS 1603.13-1998 test
3. Listed with 814P/814PH; 850PH listing pending

MX Detector Bases

800 Series Functional Detector Bases supplement the standard universal detector base, providing sounder, relay, and loop isolation functions for the range of *MX* CIE. Changes to a building can easily be adapted to by retrofitting sounders and relays to existing points. Refer to Page 109 Sounder Base Selection Guide.

4B Universal Base

The 4B Universal Base contains no electronics and is suitable for indoor applications of the 614 series conventional (non-addressable), 814 and 850 series analogue addressable detectors. It provides excellent space for cable access and terminations. It features remote LED connections and an anti-tamper facility. The 4B base is designed to snap-fit into the ceiling tile adaptor, or screw fix to the ceiling in the traditional manner.

Specifications

Operating Temp.	-25°C to +75°C
Relative Humidity	10% to 95% (n/cond)
Dimensions (mm)	109 dia x 25H
Weight	64g

Indoor Applications Only

ActivFire Listed with compatible detectors

Part Numbers

517.050.041	4B Base
517.050.052	Euro Mount Adaptor
517.050.054	4B-6A 4" to 6" Adaptor Plate
517.050.051	4B-DHM DeckHead Mounting Kit

4B-C Continuity Base

The 4B-C Continuity Base is used for most installations involving 850 Series detectors, as it allows the detector's in-built short circuit isolation function to be in-circuit when the detector is fitted and ensures continuity is maintained when the detector is removed. The 4B-C is not supported on MX4428.

Specifications

Ambient Temperature	-25°C to +70°C
Relative Humidity	10% to 95% (n/cond)
Dimensions (mm)	109 dia x 25H
Weight	64g

Indoor Applications Only

ActivFire Listed with *MX* detectors

Part Number	517.050.042

4B-I Isolator Base

The 4B-I Isolator base is primarily used with detectors that do not have in-built short circuit isolation, such as the 814 Series detectors.

The 850 Series detectors can also be used, however, the detector's in-built short-circuit isolator will not be in operation. The 4B-I includes a yellow LED that lights when the loop is shorted on one side.

Technical Specifications

Operating Voltage[1]	20 to 40Vdc
Quiescent Current	80µA (typ.)
Tripped Current	3.5mA (max.)
Ambient Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (n/cond)
Dimensions	109 dia x 25H mm
Weight	64g
ActivFire Listed	afp-2927/28/30
FPANZ Listed	VF/650
Part Number	517.050.043

1. *MX* addressable loop voltage

P80DSB Detector Sounder Base / Detector Activated Sounder Base

The 80DSB is an indoor detector base specifcally for use with the MX addressable detectors. The base incorporates a sounder that is activated directly by the detector plugged into the base.

Note:
Note the P80DSB does not play the AS2220 evac tone.

Technical Information

	P80DSB
Devices per loop	Up to 250 (*)
Dimensions (Diameter x H)	114x45mm
Sound output @ 1m	Up to 90dBA
Body colour	White
IP Code	IP21C
Approvals	AS7240-3

(*) Sounder at high volume, 1 A loop.
Loop quantities are for guidance only and should be verified with the loop calculator.

Part Numbers

576.080.001	80DSB Detector Base Sounder
557.080.001	B-CAP Blanking Cap for Sounder / VAD Bases White
557.080.002	A-CON Conduit Adaptor for Sounder / VAD Bases White

Features:

- A compact and discrete solution
- One point of installation for detector and sounder with no additional wiring
- Low power with up to 175 sounders on a single loop
- Simple to select the tone and volume using switches
- No special training or tools needed
- 9 selectable tones
- 4 selectable volumes
- A locking pin is supplied with the base which prevents the unauthorized removal of the detector
- Replaces legacy 802SB and it is compatible with 800 series detectors. Can be used for service and repair or as part of a planned upgrade path.

802SB Low Power Sounder Base

The 802SB Addressable Sounder base provides a sounder function on *MX* addressable systems. Designed for indoor use, it requires an associated detector or addressing module in order to operate, as the sounder base is controlled by the detector/addressing module plugged in. The detector must be locked into the base using the detector locking device. Removal of the detector or loss of power to the loop will cause the sounder to cease sounding. It must be fixed to a flat ceiling or a suitable electrical back box with 50mm fixing centres. It is identified by a white coloured park clip. The 802SB supports ISO8201 T3 tones.

Specifications

Operating Voltage[1]	20 to 40Vdc
Quiescent Current	200µA (max.)
Alarm Current	6.8mA (max. volume)
Sound Press. Level	90dBA (max. volume)
Tones	8 Selectable (incl. T3)
Ambient Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non cond.)
Dimensions (mm)	110 dia x 38H
Devices per loop[2]	50 to 250
ActivFire Listing	afp-1446

Part Number

516.800.910	802SB Low Power Sounder Base
517.050.005	M69 Detector locking pin kit (pack of 100)

1. *MX* addressable loop voltage
2. Assuming all 802SBs operate simultaneously: 50 per loop (High volume); 200 (Low). Refer to relevant manual for design limits. Note that the 802/901SB cannot plug into a 5B Base or 5BI Isolator base.

814RB Relay Base

The 814RB Addressable Relay Base provides two sets of changeover volt-free relay contacts capable of switching 1A (resistive) @30Vdc. The relay function is controlled by the *MX* fire alarm panel via the detector fitted to the 814RB. The 814RB may be mounted directly to the ceiling or plugged into a 4B/5B, Universal or 4B-I/5B-I Isolator Base.

Specifications

Operating Voltage[1]	20 to 40Vdc
Quiescent Current	50µA (max.)
Switching Current	1A @ 30Vdc max.
Indoor Applications Only	
Ambient Temperature	-10°C to +55°C
Relative Humidity	10% to 95% (n/cond)
ActivFire Listed with *MX* detectors	
FPANZ Listed	VF/638
Part Number	814RB

1. *MX* addressable loop voltage

4B-DHM Deckhead Mounting

The 4B-DHM Deckhead Mounting can be used with Vigilant 850 Series detectors using a 4B base. It provides an IP55 seal between the mounting surface and the detector base for superior environmental protection. The housing has four 20/25mm cable breakouts. 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 detector.
Extra Base Accessory Terminals (BATs) are available, one is supplied.

Specifications

Ambient Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non-cond.)
Dimensions (mm)	115 dia x 42H
Mounting Centres	128.5 mm
Weight	200g
Ingress Protection	IP55

Part Numbers

517.050.051	4B-DHM
517.050.612	BAT Kit - pack of 10

Ceiling Tile Adaptor

The Ceiling Tile Adaptor (CTA) is used to prepare a ceiling tile to be able to accept a complete base and detector assembly. It comprises a Bezel (1), Clamp (2) and Back Box (3). Traditionally the detector base is installed without the detector head, as mounting screws must be inserted through the back plate of the base. The CTA can save time by allowing a system to be installed and commissioned before the ceiling is installed. Once the ceiling is installed the base and detector assembly can be pulled into place without the need for disassembly and re-testing. When beacon bases or sounder bases are fixed to the CTA, an Adaptor Plate (not shown) is required to provide standard electrical box fixings.

Specifications

Dimensions (H x Dia)	52 x 165 mm
Weight	232g
Ceiling Cutout	127mm (30mm max. tile)
Material	Flame Retardant ABS
Colour	White
Ambient Temperature	–25°C to +70°C
Storage Temperature	–40°C to +80°C
Relative Humidity	10% to 95% (non cond.)

Part Numbers

517.050.060	Ceiling Tile Adaptor Kit
- 517.050.056	Back Box
- 517.050.057	Bezel and Clamp
517.050.058	CTA-AP Ceiling Tile Sounder Base Adaptor Plate (8x111 dia. - not shown)

4B-6A 4" to 6" Adaptor

For use with U.S. style 6" electrical back boxes or can be fixed directly to a ceiling and used to conceal marks left when older, large diameter detectors are replaced.

Specifications

Dimensions (mm)	152 dia x 16.5H
Weight	44g
Indoor Applications Only	
Part Number	517.050.054

Address Flag

The 800 Series detectors incorporate a feature which automatically transfers the address flag to the detector base when the detector is plugged into the base. On removal of the detector the address flag is retained in the base, thus helping to ensure that detectors are not accidentally returned to the wrong detector base following service routines. Address flags are supplied in packs of 100.

Labels are provided on sheets of 250 in four colours to enable quick identification between different loops.

Part Numbers

516.800.915	*MX* Address flags (pk of 100)
516.800.931	Address flag labels Loop A - Wht
516.800.932	Address flag labels Loop B - Yel
516.800.933	Address flag labels Loop C - Ppl
516.800.934	Address flag labels Loop D - Grn

MX4428 Addressable Responders

MXP Supports *MX* Addressable Device Technology

The MXP has two major functions:
(i) To provide an interface to an MX4428 responder (communications/power) loop, via which data gathered by the MXP may be transferred to the MX4428 Master for display, annunciation, and processing as appropriate.
(ii) To provide an interface to the *MX* Analogue Loop. Data retrieved from the *MX* devices connected to the Analogue Loop is processed to determine the ALARM/NORMAL/FAULT status of each device, and this data is passed on to the MX4428 Master via the MX4428 Loop Interface. The Analogue Loop interface also allows outputs to be sent to those devices that support them, to initiate *MX* device tests, activate relays, etc.
The MXP is one printed circuit board (1901-213). The *MX* Protocol Responder supports up to 200 *MX* multi-sensor virtual detectors (Photoelectric and Heat, CO and Heat, Ionisation-only, Heat-only) and a range of functional bases, addressable callpoints, input modules, and output modules.

Part Numbers

FP0824	MXP Responder in box
PA0893	PCB Assy 1901-213 MXP Responder
PA1038	PCB Assy 1901-238 *MX* Loop Filter

ADR Supports Conventional Detector range

FP0497 and FP0529 ADR, 1901-116 4mA Detector Current

The **PA0497** version of ADR is the only version suitable for general use in New Zealand. It supports four "smoke" circuits with short circuit defect. Indicating heat detectors are compatible with modification - refer to LT0126.

The **FP0755** and **PA0844** versions of ADR, typically used in Australia, are only suitable for special application in New Zealand (e.g. Intrinsically safe).

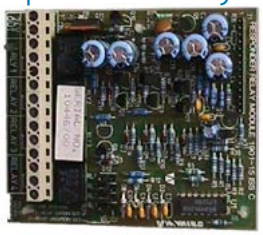
Part Numbers

PA0497	PCB 1901-116 ADR 4mA det. current
FP0529	Empty ADR box

For Special Applications:

FP0755	ADR-M 1901-198 4mA 15V MCP in box
PA0844	PCB 1901-200 ADR-M 2.5mA 3k3 EOL

Responder Relay Module (RRM)



PA0453 RRM PCB 1901-15

The Responder Relay Module (RRM) is an optional add-on board to an ADR. When added the responder the combination is referred to as an Advanced Relay Responder (ARR). The RRM 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 it is wired through NO relay contacts.

The RRM must be used on ADRs with software versions V1.01 or greater, to provide RRM present monitoring.

Part Number

PA0453	PCB Assy 1901-15 RRM

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 obsolete 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 obsolete AAR (2 wire mode only), and can replace an AAR running in 2 wire loop (line) mode with no re-programming of the MX4428/ F4000 panel.

‡ Up to 99 Detectors and 99 Devices

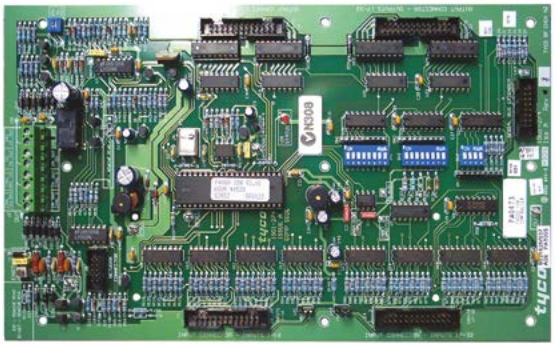
Part Numbers

FP0575	FP, MPR 1901-141 in box
PA0713	PCB Assy 1901-141 MPR
SF0238	Software, MPR V3.01

Input/Output Responder (IOR)

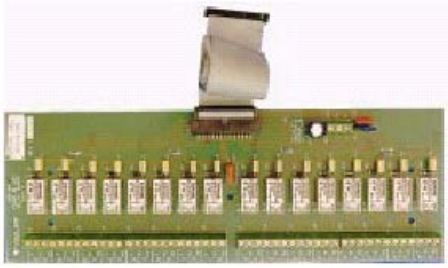
The IOR is a single 32 Input/32 Output responder which draws its DC operating power from, and communicates with the MX4428 Fire Indicator Panel via the 4 wire responder loop. Connection to the MX4428 loop is via demountable screw terminals. Field connection of inputs/outputs is provided by screw terminals on separate termination boards. These connect to the IOR by 26-way Flat Ribbon Cables (FRCs) which must 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 16-Way Relay Boards. 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 responder loop, unless supplied externally.



PA0473 IOR Controller Board1901-72

16-Way Relay Board (IOR)



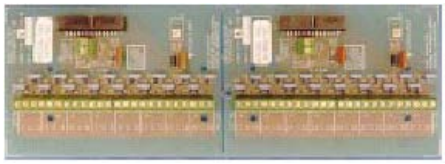
PA0470 16-Way Relay Board 1901-64 c/w LM0056

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

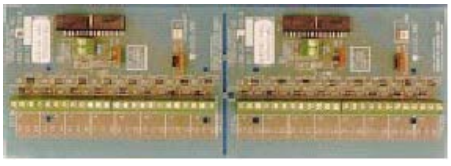
FRC 26W Style B for IOR
LM0044,45,46,56

These assembled 26-way FRCs are available to connect the IOR to termination boards. Cables should be selected according to the particular mounting requirements. (See below for lengths).

Input and Output Termination Boards (IOR)



PA0474 IOR 32-Way Input Termination



PA0475 IOR 32-Way Output Termination

The IOR Input and Output Termination Boards allow 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 circuits). The termination boards are available for 16 or 32 inputs or outputs. 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 a 32-way board separated in half.

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

Part Numbers

Protected Termination Boards

PA0474	32W Input Protect. Term. Board
PA0475	32W Output Protect. Term. Board
PA0479	16W Input Termination Board (obtain by separating PA0474 in two)
PA0480	16W Output Termination Board (obtain by separating PA0475 in two)

Unprotected Termination Boards

PA0483	16W Unprot. Term.Bd, no resist.
PA0769	16W Unprot. 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
LM0056	FRC, 26W Style B,1.4m

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 mild steel
Finish	Cream Wrinkle powdercoat
Dimensions (HWD)	680 x 470 x 167mm
Weight	16 kg (no batteries)
Battery Size (HWD)	170 x 165 x 125mm (max. for each battery)

Part Numbers

PA0463	PCB Loop Booster 1901-35
FP0487	Loop Booster 1901-36

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

Analogue Addressable Series 130 Detectors

The Series 130 devices are a range of low-profile Analogue Addressable fire detectors and modules. These unobtrusively-styled detectors have a number of unique design features to improve their operation, installation and ease of servicing. Using the VIGILANT MX4428, up to 99 detectors and 99 modules can be supported per MPR, with analogue addressable loop length up to 2000 metres. The advanced SmartSense Algorithm, unique to MX4428, significantly reduces response to non-fire phenomena. Device address is set by rotary decade switches on the back of the device. Two indicating LEDs can be programmed via the FIP to blink as the detector is polled and show constant red when in alarm. The Series 130 is for maintenance/expansion of existing systems. New installations should use *MX* Addressable devices.

C131A-Mk2 Ion Smoke Detector

The C131A-Mk2 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-Mk2 has a high degree of false alarm immunity thanks to the advanced SmartSense algorithms.
The detector mounts on the B501AUS or B200SR base and is designed to provide open area protection. Two LEDs 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.)	300µA
Alarm Current (max.)	6.5mA
External Output Drive (max.)	5mA
Relative Humidity	10% to 93% (n/cond)
Ambient Temperature	-10°C to +49°C
Dimensions	102 dia x 51H mm
Weight	160g
Remote Indicator	E500 Mk2 Series
CSIRO ActivFire Listed	afp-2486
FPANZ Listed	VF/301
Part Number	C131A-Mk2

P131A-Mk2 Photoelectric Smoke Detector

The P131A-Mk2 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-Mk2 has a high degree of false alarm immunity thanks to the advanced SmartSense algorithms.

The detector mounts on the B501AUS or B200SR base and is designed to provide open area protection. Two LEDs on each detector illuminate during alarm to provide 360° alarm indication. An optional remote LED can also be fitted.

Specifications

Operating Voltage	15 to 32Vdc
Quiescent Current (max.)	360µA
Alarm Current (max.)	6.5mA
External Output Drive (max.)	5mA
Relative Humidity	10% to 93% (n/cond)
Ambient Temperature	-10°C to +49°C
Dimensions	102 dia x 51H mm
Weight	170g
Remote Indicator	E500 Mk2 Series
CSIRO ActivFire Listed	afp-2487
FPANZ Listed	VF/302
Part Number	P131A-Mk2

T131A-Mk2 Heat

The T131A -Mk2 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-Mk2 has a high degree of false alarm immunity thanks to the 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 B501AUS or B200SR base and is designed to provide open area protection. Two LEDs on each detector illuminate during alarm to provide 360° alarm indication. An optional remote LED can also be fitted.

Specifications

Operating Voltage	15 to 32Vdc
Quiescent Current (max.)	300µA
Alarm Current (max.)	6.5mA
External Output Drive (max.)	5mA
Relative Humidity	10% to 93% (n/cond)
Ambient Temperature	-20°C to +45°C
Dimensions	102 dia x 51H mm
Weight	140g
Remote Indicator	E500 Mk2 Series
CSIRO ActivFire Listed	afp-2488
FPANZ Listed	VF/205
Part Number	T131A-Mk2

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 P132A Laser mounts to the B501AUS base or B200SR Sounder Base.

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	-10°C to +40°C
Weight	150g
Dimensions	102 dia x 42H mm
Sensitivity	0.5% to 8% Obs/m
CSIRO ActivFire Listed	afp-1438
FPANZ Listed	VF/334
Part Number	LZR1M

P135A/2251TMB ACCLIMATE

The P135A/2251TMB is a photoelectric smoke detector with supplementary 57°C thermal. The ACCLIMATE uses advanced on-board software to combine the signals from the photo and thermal elements. This software creates a true multicriteria detector capable of rejecting nuisance sources, but still responding quickly to real fires. It has the capability of adjusting its sensitivity according to the type of environment that it is installed in.

Specifications

Operating Voltage	15 to 32 Vdc peak
Quiescent Current	300 µA @ 24 Vdc (max.)
Alarm Current (max.)	10 mA @ 24 Vdc (on)
Dimensions (dia x H)	155 x 51 mm
Weight	147 g
Ambient Temperature	0°C to 38°C
Relative Humidity	10% to 93% (n/cond)
UL Listed Velocity	0 to 20 m/s (suitable for installation in ducts)
FPANZ Listed	SS/351
Part Number	2251TMB

130 Series Detector Base

The B501AUS Detector Base should be mounted on a flat surface with suitable fasteners.

Specifications

Dimensions (dia x H)	102 x 20 mm
Weight	152g
Part Number	B501AUS

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 P131A photoelectric smoke detector. The DSU is designed to sample air in air conditioning ducts and pass the air through the smoke detector. The D51Z131 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 Vigilant E500 Mk2 Series Remote Indicators can be used for remote indication of an alarm.

Specifications

Duct Pressure[1]	-1.15 to +3.0 kPa
Duct air velocity for alarm at 8%Obs/m[1]	1, 2, 4, 8m/s
Sampling Tube Length	160mm minimum
Max. Duct Width	1.8m
Remote Indicator	E500 Mk2 Series
Dimensions	
Base & Cover (LWH)	278x190x113 mm
Sampling Tube Pitch	122mm
Duct Holes Required	24mm dia. x 2 places
Ambient Temp	-10°C to +55°C
Relative Humidity	10% to 95% (n/cond)
Not ActivFire Listed	

Part Numbers

FP0999	D51Z131 Z131 base fitted
D51L	Baffle box of 10
D51F	Filter box of 10
FP09983	D51T3 3m Samp.Tube
D51K100	Sampling Tube End Cap (packet of 10)

1. AS 1603.13-1998 test

1841 Series 130 Manual Call Point

The 1841 manual call point is a break-glass switch designed to meet the requirements for manual call points in fire alarm systems as specified in NZS 4512 "Fire Detection and Alarm Systems in Buildings". The Series 130 addressable version incorporates a short-circuit isolator. Conventional and *MX* Addressable versions are also available.

Specifications

Dimensions (HWD)	
Surface	130 x 130 x 67 mm
Flush	130 x 130 x 13 mm
Cable Entry (surface)	20mm Conduit thread
Protection	IP23 (Surface)
Colour	Red - NZS 7702 #537
FPANZ Listed	VF/610
Part Number	
FP0668	Series 130 Surface MCP
FA1000	Spare Glass

Analogue Addressable 130 Series Modules

ADS130-Mk2 Short Circuit Isolator

The ADS130-Mk2 Short Circuit Isolator protects MPR analogue addressable loops against short circuits. When a loop short circuit occurs between ADS130-Mk2 isolators, they disconnect the section of the cable containing the short, allowing the rest of the loop to continue to function. ADS130-Mk2 isolators are usually placed between zones so that a short circuit will affect only one zone and any loss of detection capability will be minimised. The ADS130-Mk2 isolators automatically connect the loop at power-up and after removal of a short circuit. An inbuilt yellow LED provides a visual indication of isolator status.

Specifications

Operating Voltage	15 to 32Vdc
Quiescent Current (max.)	450µA @ 24Vdc
Supply Current (shorted o/p)	17mA
ADS130s per MPR	15 max.
Max. no. Devices betw'n ADS	25
Humidity	10% to 95% (n/cond)
Ambient Temperature	-5°C to +50°C
Dimensions	120x108x34mm
Weight	140g
ActivFire Listed	afp-1446
FPANZ Listed	SS/605
Part Number	ADS130-Mk2

ADCx130-Mk2 Output Control Module

The ADCS130-Mk2 Supervised Relay Control Module provides a single switched supervised output on the MPR addressable loop. It supervises the output wiring for open or short circuit faults when the output is de-energised. The ADCS130-Mk2 can directly replace an ADC130 configured for supervised output operation (tabs in place).

The ADCU130-Mk2 Unsupervised Relay Control Module provides two change-over relay outputs on the MPR addressable loop that operate together under control of the MX4428. The two relay outputs are electrically isolated and there is no supervision of the output wiring. The ADCU130-Mk2 can directly replace an ADC130 that has been used in unsupervised output mode (tabs broken).
Either module mounts to a double gang back box with a minimum depth of 50mm.

Specifications

Operating Voltage	15 to 32Vdc
Quiescent Current (max.)	350µA
Supply Current (max.)	6mA
Relay Contact Rating (max.)	
Resistive	2A 30Vdc
Inductive	1A 30Vdc
100V Audio Line	30 watts
Supervised Line Length	100m
Cable Size	1 to 4 mm^2
Relative Humidity	10% to 95% (n/cond)
Ambient Temperature	0°C to +49°C
Dimensions	120x108x34mm
Weight	140g
ActivFire Listed	afp-1446
FPANZ Listed	SS/604

Part Numbers

ADCS130-Mk2	Supervised
ADCU130-Mk2	Unsupervised

ADM130-Mk2 Monitor Module

The ADM130-Mk2 is an addressable input module that allows the connection of hard contact detection devices. The module's two wire input is supervised for faults. An LED indicator allows visual monitoring of the module's status. An output is provided for connection to a remote LED indicator. Suitable remote indicators allow visual indication of the module's alarm status

Note that part number RACO232 is a suitable metal housing for ADC/ADM/ADS130 Modules

Specifications

Operating Voltage	15 to 32Vdc
Quiescent Current (max.)	350µA
Alarm Current (max.)	5mA
Supervised Line Length	100m max.
Input Voltage (max.)	11V
Relative Humidity	10% to 93% (n/cond)
Ambient Temperature	0°C to +49°C
Dimensions	120x108x34mm
Weight	130g
ActivFire Listed	afp-1446
FPANZ Listed	SS/601
Part Number	ADM130-Mk2

ADM131-Mk2 Mini Monitor Module

The ADM131-Mk2 is an addressable input module that allows the connection of hard contact detection devices.

The module's two wire zone input is supervised for open circuit faults. The ADM131-Mk2 is easily addressed using two robust rotary switches. Note there is no Remote LED output facility on the ADM131-Mk2.

Specifications

Operating Voltage	15 to 32Vdc
Quiescent Current (max.)	350µA
Supervised Line Length	100m max. (40 Ohm)
Lead Length	150mm
Relative Humidity	10% to 93% (n/cond)
Ambient Temperature	0°C to +49°C
Dimensions	33x70x17mm
Weight	35g
ActivFire Listed	afp-1446
FPANZ Listed	SS/602
Part Number	ADM131-Mk2

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

Detector cages are available in a range of sizes to cater for most of the detectors that are available through Johnson Controls Fire Detection. These protective cages are suitable for applications where unprotected devices would be vulnerable to accidental damage.

Part Numbers

FA0129	95mm dia x 65mm deep (V*IGIL*)
FA0129A	95mm dia x 65mm deep (V*IGIL*) 4x Fixing Facility
WA1000	200mm dia x 85mm deep (Bell)
WA1002	120mm dia x 90mm deep

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 to 26Vdc
Alarm Current (min.)	1.6mA
Alarm Current (max.)	20mA@60°C 12mA@75°C
Luminous Intensity	as per AS2362.25
Dimensions (H x Dia)	14(+5 for LED)x72 mm
Mounting	2x Ø4.8 holes @ 50 mm centres
Relative Humidity	95% (n/cond) max.
Ambient Temp.	-5°C to +75°C

Part Numbers

E521	Fire Alarm in Concealed Space
E502	Fire Alarm

Fire Panel Spares & Ancillaries

Key Switches

SW0018 3 Position keyswitch - includes 003 keys

HW0040 Cam-Lock - includes 003 keys

New Key Switches (single pole)

Part Numbers

SW0188	1-Pole key unremoveable in operated position
SW0189	1-Pole key removeable in any position

Bulgin Key Switches (Obsolescent)

Part Numbers

SW0012	1-Pole key unremoveable in operated position
SW0078	2-Pole key unremoveable in operated position
SW0093	2-Pole key removeable in any position
SW0117	1-Pole key removeable in any position
HW0213	Spare key (included in all parts above)

Notes: All switches have changeover contacts.
For NZS 4512:1997 and earlier Silence Alarms removeable in any position.
For NZS 4512:2003 and later Silence Alarms unremoveable in operated position.
Trial Evacuation always unremoveable in operated position.

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

Brigade Switch TEV Plate

ME0433 consists of a set of (Trial) Evacuation and Silence Alarms 2-pole 2-way Bulgin keyswitches, pre-assembled and wired on a labelled White (Titania) plate. Both of these switches have their key removable in one position only to comply with NZS 4512:2003. The unit is designed to directly replace the MCP blanking plate in the standard 15U MX4428 configuration, but could also be used in other cabinet configurations, or be mounted directly to an index.

Specifications

Cable Length	1 m
Dimensions	80 x 80 x 35 mm (HWD)
Part Number	
ME0433	T/Evac and Silence Alarm Switch on White (Titania) Plate

Active End of Line Devices

FP0507 Active End of Line

The Pulsing End of Line Device EOL002B is a small, two-lead, line monitoring module designed to be connected at the end of an alarm zone circuit, normally at the last detector. It is small in size and sealed with a robust, insulating resin that excludes moisture. The 0.5mm^2 connecting leads are colour coded red and black to ensure that the correct circuit connections can be easily made. Stranded conductors in the connecting leads provide durable connection. Other Active End of Line Devices are listed here.

Specifications

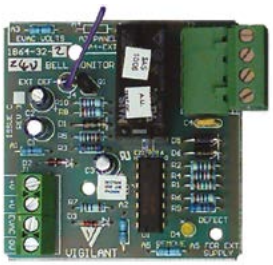
Operating Voltage	16 to 20Vdc
Operating Current	50mA @24V, 100mA @ 12V
Cable Length	1 m
Dimensions	80 x 80 x 35 mm (HWD)
Part Numbers	
PA0203	AEOL for VIC-2 & FP4000
FP0507	AEOL EOL002B

PA0915 Fused Power Distribution Board

A 4-way general purpose fused distribution board is available for use with VIGILANT and SIMPLEX fire alarm equipment. This compact printed circuit board splits one supply into 4 separately fused outputs, each rated at 1A (fuses can be changed up to 5A, subject to a 16A overall load limitation). Voltage transient protection is provided across the supply and to earth via 36V tranzorbs. Earthing of the board via its mounting holes is required for this suppression to be fully effective. No fuse supervision is currently provided (may be required for compliance with AS 4428 if powered item does not supervise its power supply in some way).

Specifications	
Input	0-30Vdc, 16A max, screw terminals 4mm^2
Output	4 separate outputs, each fused at 1A (20 x 5)
Screw terminal	2.5mm^2 – two sets per output
Fuses	Replaceable up to 5A each subject to maximum input current rating above
Suppression	36V bi-directional tranzorbs across supply and to earth (via mounting holes).
Dimensions	101mm x 38mm
Mounting (mm)	4 x 3.5dia, 89 x 25.5
Part Number	PA0915

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. It is available in two versions:

- PA0469 is for use with a fire alarm panel operating from a 12 volt power supply
- PA0494 is for use with 24 volt panels

Specifications	**PA0469**	**PA0494** (where diff.)
Operating Voltage	12V±20%	24V±20%
Operating Current	3mA (5mA LED on)	4mA (8mA LED on)
Evac cct sup Cur:	0.65mA	1.3mA
Evac cct sup Volt:	6.5V[2]	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 Numbers

PA0494	24V Panel Bell Monitor
PA0469	12V Panel Bell Monitor

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

RS485 Network Interface

PA0711 RS485 Comms PCB 1901-139-1 Plug-on (Modem connection to MX4428 Main Board - external power). The PA0711 can be used to interface an MX4428 FIP with the RS485 network. The board is mounted on the modem connector, located at the top of the MX4428 Main Board.

Specifications

	PA0711	PA0712	PA0773
Operating. Voltage			
Ext.24V	8.5 to 30Vdc		-
J2 5V		4.8 to 5.2Vdc	
Quiescent Current			
RX only 24V	24mA	26mA	-
RX only 5V	2mA	26mA	26mA
TX act. 24V	50mA	75mA	-
TX act. 5V	25mA	75mA	75mA
Relative Humidity	10% to 95% (n/cond)		
Ambient Temperature	-5°C to +75°C		
FPANZ Listed		VF/636	
Dims (mm)	130x50	156x50	156x50

Part Numbers

PA0711	RS485 PCB Plug-on (ext pwr)
PA0712	RS232 to RS485 (ext pwr)
PA0773	RS485 CMOS FRC only

PA0712 RS232 to RS485 PCB 1901-139-2 (RS232 to RS485 - external power). It is used to convert between RS485 and RS232 level signals. Because RS485 links can be much longer than RS232, the PA0712 can be used to transmit serial data over long cables between devices which have RS232 serial ports (e.g., between the F4000 printer port and the printer). It can also be used to interface a PC with the RS485 network. Loom LM0065, a 500mm long cable with both RS232 DB9 socket and plug fitted must be ordered separately.

PA0773 RS485 Comms CMOS PCB 1901-139-3 FRC only (FRC connection - including 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 LM0172 (ordered separately), which is also used to power the RS485 Board.

I-HUB Intelligent Network Hub

FP0771 Ring NET Upgrade Kit

PA0868 CMOS/TTL RS232 I/F PCB

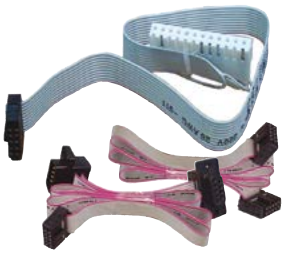
Specifications

Operating Voltage	9.6 to 28Vdc
Operating Current	140mA (9.6V) to 85mA (28V)
Ambient Temp	-5°C to +45°C
Relative Humidity	0 to 95% (non/cond)
Dimensions (mm)	265 x 95 x 25 (LWH)
Weight	0.25kg
FPANZ Listed	VF/634

I-HUB Ordering Codes

FP0771 MX4428/F3200, Ring NET upgrade kit
Includes PA0839 on bracket, LM0151, LM0152, LM0065. Note an F3200 may require an IC0358 to be fitted to U13.
PA0839 PCB, ECM9603 PANEL-LINK I-HUB
Includes I-HUB PCB, software, LM0065
KT0144 PMB/TPI RS485 support module kit
Includes PA0712, LM0084, mounting hardware.
PA0773 PCB 1901-139-3, RS485 bd, TTL
PA0868 PCB 1931-110, CMOS RS232 interface
PA0878 PCB 1931-118, CMOS/TTL signal splitter
LM0572 Loom1901-303, I-HUB to OSD139
Includes a zener diode, dropping resistor for PSU.

LM0065 10-way FRC connector to DB9M & DB9F



The I-HUB performs bridging and routing functions for devices on the VIGILANT Panel-Link network, supporting ring, multi-drop and point to point networks. It can assist in reducing congestion on large networks by using its filtering and 'routing' capabilities. The I-HUB has five network ports; which allow the I-HUB to be connected to a network of devices or to a single device. Messages received on one port can be routed to any or all of the other ports. Ports 1 & 2 are 2 or 4 wire RS485 or fibre, Ports 3 & 4 are RS232. Port 5 is a TTL level serial port.

(ribbon cable - suppllied with I-HUB)
LM0076 DB9F to DB9F 'null modem' cable
LM0084 10 way FRC to 10 way FRC 0.35m
LM0091 10 way FRC to 10 way FRC 0.5m
LM0151 10-way FRC to Molex crossover cable, (Port 5 to MX4428 molex 'Modem' connector)
LM0152 10-way FRC to 10-way FRC special crossover cable (Port 5 to MX4428/F3200 10-way network connector)
LM0160 10 way FRC to 10 way FRC 1m
LT0229 I-HUB User's Manual
SF0202 Software, Panel-Link I-HUB V1.14 EPROM

OSD139 Fibre Optic Modem

The OSD139HS Asynchronous RS232 Transceivers can interconnect one RS232 data channel over 3km of multimode fibre (OSD139HS) or over 40km of single mode fibre (OSD139HSL). These can provide complete end-to-end isolation of a full duplex asynchronous data transmission at up to 120kbps.
The OSD139HS are high performance fibre optic modems capable of linking asynchronous RS232 data over several kilometres at speeds ranging from DC to 120kbps. Recommended for I-HUB Ring network applications.

Specifications

Optical Wavelength	850nm nominal (HS) 1310nm niominal (HSL)
Optical Connector	ST
Ambient Temp	-20°C to +75°C
Relative Humidity	0 to 95% (non/cond)
Dimensions (mm)	15 x 44 x 80 (HWD)
Weight	200g
Part Numbers	
OSD139HS	HS Multimode F/O modem
OSD139HSL	HS Single mode F/O modem
FP1032	OSD139 F/O modem x2 mounting kit

MODBUS Bridge (MBB)

The Modbus Bridge (MBB) is designed to translate data from VIGILANT fire alarm panel RZDU outputs to a Modbus communication line. It does so by monitoring the panel, as appropriate, and storing the information it receives in its database. The bridge is also able to send data received from the MODBUS master onto an IO-NET network, to enable the MODBUS master to control outputs on IO-NET controllers. It is available packaged in a cabinet or as a board set for incorporation into other equipment. MODBUS communications options are RS232 or RS485.

Specifications

Operating Voltage	19 to 28.5Vdc
Operating Current	25mA (RS232) 50mA (RS485)
Ambient Temp	-5°C to +45°C
Relative Humidity	0 to 95% (non/cond)
Dimensions (mm)	450 x 280 x 80 (LWH)
Weight	4kg
Part Numbers	
FP0706	MODBUS Bridge, RS485
SF0144	S/w, MODBUS Bridge, V1.02
SF0220	S/w, MODBUS Bridge, IO-NET I/F V2.01
LT0179	MBB User Manual

Panel-Link MODBUS Bridge (PMB)

The Panel-Link Modbus Bridge (PMB) is designed to translate data from VIGILANT fire alarm systems on a Panel-Link network to a Modbus communication line. The PMB not only monitors the Panel-Link network, but also provides a means of direct control over the fire systems. The PMB database contains data on the states and conditions of fire panels, as well as zone and point information. A Modbus master can access this data by polling the relevant addresses of the PMB and can write to holding registers sending network variables and issuing commands to panels on the Panel-link network. The PMB also has 16 I/O ports which can be read and written to by the Modbus Master. Two of these pins can be programmed as a sounder output if a fault develops in the Modbus system, and an isolate input which can locally isolate the PMB sounder driver.

Specifications

Operating Voltage	9.6 to 28Vdc
Operating Current	135mA (9.6V) to 85mA (28V)
Ambient Temp	-5°C to +45°C
Relative Humidity	0 to 95% (non/cond)
Dimensions (mm)	265 x 95 x 25 (LWH) (PCB) 450W x 280D x 80H (box)
Weight	0.25kg (PCB) 4kg (box)
Battery Capacity	6.5Ah (box)

Part Numbers

FP0699	PMB c/w PSU in box
PA0639	PMB PCB incl. mounting hardware & FA2083
SF0165	S/ware PMB V1.24 EPROM
KT0144	Kit PMB RS485 Module
PA0790	PCB ECM9603 I/O Board
LT0202	PMB User Manual

Panel-Link Internet Protocol Bridge (PIB)

The PIB is a device for interfacing a single VIGILANT Panel-Link device on to a 10BaseT Ethernet network to allow networking with other PIBs and Panel-Link devices. IP Networking is utilised for the Internet, PC Networks and Industrial Networks. IP connection equipment for almost any type of media is readily available.
The PIB is especially applicable to large and/or wide-spread sites. It is also useful where it is not possible or economic to install physical cabling.
The PIB can be used to connect to an Ethernet network (dedicated, or shared) or a variety of other physical media (e.g. fibre optic) via third party switches or media convertors. A redundant ring of single-mode or multi-mode fibre can easily be configured using the switches listed.
One PIB is normally used at each panel; however to connect multiple panels, an I-HUB must be used between the PIB and the panels.
The PIB is self-configuring for many situations. It also has filtering and routing capabilities for larger network optimisation.

Configuration and diagnostics are performed from a standard PC web browser anywhere on the network.
The PIB also provides remote across-network access to the diagnostic port of any panel directly connected to a PIB. It is supplied complete with Ethernet, MX4428 serial port, and I-HUB/panel FRC network port looms.

For more information on IP Networking, refer to Page 51.

Specifications

Operating Voltage	15-28Vdc[1] or 10-14Vdc[2]
Operating Current	60mA (excluding LEDs)
Dimensions (mm)	192 x 120 x 30 (LWH)
Not ActivFire Listed	
FPANZ Listed	pending

Part Numbers

FP0986	Panel-Link Internet Protocol Bridge (PIB)
SU0319	MOXA 5 Port Ethernet Sw. (2 Multi Mode Fibre)
SU0320	MOXA 5 Port Ethernet Sw. (2 Single Mode Fibre)
SU0325	MOXA 5 Port Ethernet Switch EDS-405A
SU0326	MOXA 8 Port Ethernet Switch EDS-408A
LT0519	PIB User Manual
LT0536	IP Networking for Fire App. & Design Manual

1. Connected between 16VAC & 12Vdc terminals
2. Connected between Batt+ & – terminals

Network LED Display Unit (NLDU)

The VIGILANT Network LED Display Unit connects to a Panel-Link network to perform a variety of functions. A single NLDU may simultaneously perform any or all of: event printing, LED display, RZDU output, and bridge functions. Typical NLDU applications are:

- Site-wide network mimic panel (up to 528 LED sets).
- Repeat LED indications at a remote network panel.
- Event printing of selected event types from selected network panels.
- IO-NET Interface for networked panels.

Specifications

Operating Voltage	24Vdc
Operating Current	150mA (excluding LEDs)

Part Numbers

FP0695	NLDU Board Set, 1942-6 Includes PA0804, PA0703, PA0773, mntg hardware
FP0696	NLDU, Packaged, 1942-5 Incl. slimline surf mnt cab, PA0804, PA0703, PA0773, mounting hardware
PA0804	PCB 1931-84-1, Ctrlr Net/NDU,no S/W
PA0703	PCB 1931-27,F3200 Remote I/F
PA0773	PCB 1901-139-3, RS485,CMOS,FRC
SF0145	NLDU Software V2.03
LT0188	NLDU User Manual

Protocol Translation Module (PTM)

The Protocol Translation Module (PTM) provides an interface between VIGILANT fire panels on a Panel-Link network and a network event printer or an XL Graphics computer system. The PTM is programmable as to which panels/events are printed or sent to the XL Graphics system.

- Interfaces VIGILANT fire panels or Panel-Link network to network event printer or XL Graphics
- Event printer could be actual printer or event receiving system - Nurse Call, BMS, etc., that can handle text strings
- Configurable for what event types to print: Zone, System, Circuit, Point, Relay, System Operating
- Programmable group membership
- Individual fire panels can be selected for logging events/passing to XL Graphics
- Selectable fire panel monitoring - failure events generated if no messages received from each panel
- Programmable Panel-Link network operation - including ACK broadcasts
- Non-volatile storage of programmed parameters
- Supplied in painted metal cabinet
- 12V or 24Vdc operation
- RS232 interface to printer/XL Graphics

Specifications

Operating Voltage	24Vdc
Operating Current	19mA (excluding LEDs)
Dimensions (mm)	450W x 280D x 80H (box)
FPANZ Listed	VF/616

Part Numbers

FP0586	Protocol Translation Module (PTM in box)
PA0799	Protocol Translation Module PCB only (no s'ware)

PA0729/730 General Purpose Relay Board

12V (PA0729) and 24V (PA0730) versions of a two pole changeover contact general purpose relay board may be used in either of two modes:

1. Direct Operation:
   The relay will operate when the rated voltage is applied to the +ve and -ve terminals.
2. SIG+ Input:
   Cutting link LK1 will allow the relay to operate if a positive voltage between 3.5V and 30Vdc is applied to the SIG+ terminal. SIG+ is a low current input so it may be driven by a logic level signal.
   In this mode the relay board must have constant power to the + and - terminals.

The relay board provides visual feedback with an LED illuminated whenever the relay is energised. Two sets of changeover contacts are available at screw terminals on the relay board.

Specifications	PA0729	PA0730
Operating Voltage	12Vdc (±20%)	24Vdc (±20%)
Quiescent Current	0	0
Operating Current	20mA	12mA
Relay Cont. Rating (per pole)	2A @ 30Vdc resistive 1A @ 30Vdc inductive 1A @ 30 Vac inductive	
Ambient Temp	-5°C to +45°C	
Relative Humidity	0 to 95% (non/cond)	
Dimensions (mm)	40 x 41	
Weight	0.05kg	
FPANZ Listed	VF/662	

Part Numbers

PA0729	12V GP Relay Board
PA0730	24V GP Relay Board

PA0278 Battery Monitor

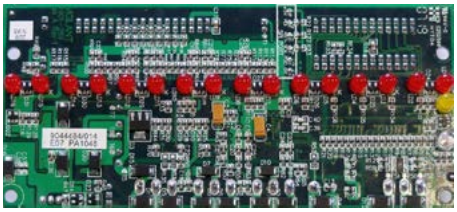
The Battery Monitor is a small module designed to provide supervision of supplementary 12 or 24 volt lead-acid batteries (e.g. evacuation system batteries) in an automatic fire alarm system as required by New Zealand Standard NZS 4512. The module provides electrical isolation between the supervised power supply and the main power supply of the associated fire alarm control unit. An LED provides latched indication of a low battery condition.

Specifications

	12V L/A Battery	**24V L/A Battery**
Defect Set Point of Battery Supply to be Monitored:	12.2V (draws up to 6 mA)	24.4V(drw up to 6mA)
Main Pwr Supply	10V to 14V, 5 mA	20V to 28V, 8 mA
Defect- (D-) O/P	Open Coll.Transistor 30V max, Closure to 0V, 20 mA max[1]	
Transmit- (T-) O/P	Open Coll.Transistor 30V max, Clamp to 10V, 20 mA. max[1]	
Dimensions	91 x 48 mm	
Terminations	Screw Terminals, 2.5 mm[2]	
Part Number	PA0278	

1. When battery voltage low

LED/RZDU



Specifications

Operating Voltage	
12V (nom)	7.0 to 14.0Vdc
24V (nom)	17.0 to 30Vdc
Operating Current	
12V (nom)	50mA to 660mA
24V (nom)	30mA to 900mA
Ambient Temp	0°C to +45°C
Relative Humidity	0 to 95% (non/cond)
Dimensions (mm)	144 x 65 x 30 (LWH)
Weight	0.3kg
FPANZ Listed	VF/661

Part Numbers

PA1048	PCB LED-RZDU Board
LM0356	Loom FP1600 Key Switch
FA2074	FP1600 Door Key Sw Label
SP0424	Empty R/S FP1600 cabinet
SP0425	Empty F/S FP1600 cabinet
PA0787	FP1600 Mimic Display
PA0702	FP1600 Mimic Term Board
FA1210	FP1600 F/S Displ Mtg Brkt
FP0475	MX4428 Mimic Display
FP1002	MX1 LED Display

Other options possible - refer manual LT0460

The VIGILANT LED-RZDU (PA1048) is a Remote Zone Display Unit (RZDU) that provides a flexible and cost-effective "building block" for the construction of remote LED/mimic displays for VIGILANT fire alarm panels equipped with an RZDU port. It is highly configurable, with a range of mounting options for front or rear service, and is compatible with a variety of LED display and mimic termination boards.

The LED-RZDU has 16 on-board red zone Alarm LEDs, one common green Normal LED and one common amber Defect/Fault LED, all fitted on the rear of the board using the *MX1*-style LED arrangement and mounting. It is capable of driving an FP1600 termination or mimic display board, an MX4428/F4000 termination or relay board, and/or a chain of MX4428/F4000 or *MX1* 16-zone LED display boards.

Compact FBA

The Compact FBA provides fire brigade and evacuation alarm control and signalling facilities for sprinkler systems complying with NZS 4541. Different versions are available to cater for Type-X and Type-Y requirements.

Type-X FBA has a single pressure switch with separate drop-in-pressure trip points for Defect and Fire.

Type-Y FBA has an additional rise-in-pressure fire switch, and does not signal Defect on pressure drop.

Specifications

Dimensions 310H x 205W x 150D mm

Complies with automatic sprinkler standard NZS4541. Meets New Zealand Fire Service requirements for connection to remote receiving stations. Insurance Council NZ grandfathered approval numbers:-

Type-X: 436, Type-Y: 437

FPANZ Listed:-

Type-X	VF/809
Type-Y:	VF/810

Features

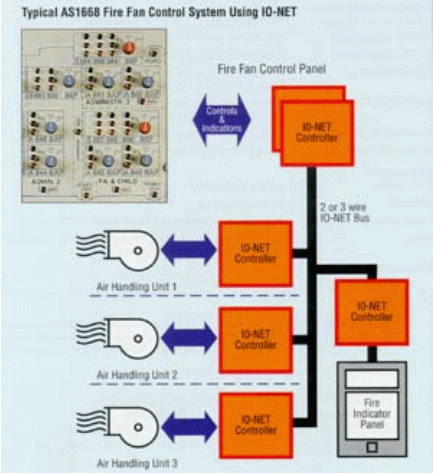
- Compact, robust metal cabinet
- Front panel LED status indications
- Fully supervised anti-interference circuit with isolation switch
- Separate Main Stop Valve supervision input
- Defect input allows supervision of associated equipment
- Internal status & diagnostic LEDs
- "Recall" button allows historical Defect conditions to be displayed
- Low power mode allows powering from SGD brigade line
- High power mode allows ancillary relay drive and brighter LEDs
- Silence Alarms front panel keyswitch standard
- Electronic latching with Reset push button
- All controls door-interlocked
- Two sets of Fire output contacts, 5A Evacuation Alarm output with internal isolation switch
- Internal buzzer (door interlock and non-connected Defect)

Part Numbers

FP0800	Compact FBA, Type-X
FP0801	Compact FBA, Type-Y
PA0861	PCB GP Brigade Relay I/F
PA0862	PCB 1924-25, GP SGD
FP0521	DBA PSU 240VAC 12V 2A
PA0875	FBA Main Board (spare)

IO-NET Programmable Control System

IO-NET Programmable Control System



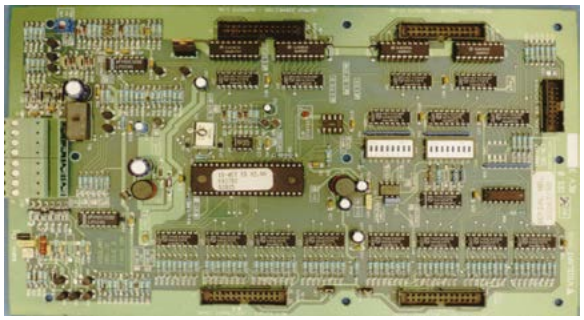
The IO-NET programmable controller is a stand-alone or networkable unit that can be used to provide similar functions to a traditional logic controller. It can also be programmed to monitor the VIGILANT RZDU protocol or provide versatile AS1668 air-handling control and indication functions. Multiple 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 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 custom 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 Unprot. 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
ME0088	IOR/IO-NET Cabinet

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 network. At least 32 Controllers can be supported on a 1mm^2 pair up to 3 km long.

Specifications

Dimensions	270x165x25 mm
Weight	310g
Power Supply	24Vdc

Part Numbers

PA0498	PCB 1901-117 IO-NET Controller
SF0239	IO-NET Controller Software V2.01 (replacement when custom program memory becomes full)

IO-NET Programming Unit

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 also able to be programmed using SmartConfig Version 1.6 onwards. The IO-NET site specific configuration is stored in read-only memory. It may be re-programmed multiple times before requiring chip replacement (SF0239).

Specifications

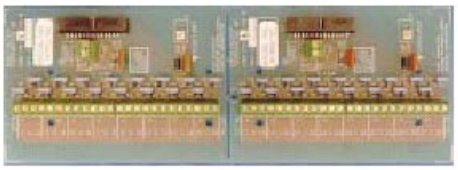
Dimensions (mm)	240 x 180 x 50 (LWH)
Weight	700g

Part Numbers

PA0700	IO-NET Programmer
SF0239	IO-Net Controller Software V2.01 (replacement when custom program memory becomes full)

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 suppression components to protect the IO-NET from electrical transients. They must be used to terminate all IO-NET Controller cabling that extends beyond the IO-NET enclosure. The termination board is connected using 26-way FRC (one FRC is required for each 16 circuits).



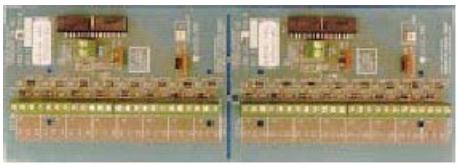
PA0474 IO-NET 32W Input

Specifications

Cable Termination	1.5mm^2 max.
Dimensions	
32-Way	270 x 93 x 23 mm
16-Way	135 x 93 x 23 mm
Weight	
32-Way	200g
16-Way	100g

Part Numbers

PA0474	32W Input Protect. Bd
PA0475	32W Output Prot. Bd
PA0479	16W Input Term. Bd (separate PA0474 in two)
PA0480	16W Output Term. Bd (separating PA0475 in two)



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 indicators 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.

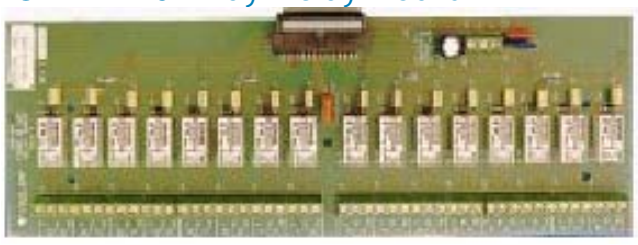
Specifications

Cable Termination	1.5mm^2 max.
Dimensions	69 x 46 x 18 mm
Weight	100g

Part Numbers

PA0483	16W Unprotected Termination Board, no resistors
PA0769	16W Unprotected Termination Board c/w 3k3 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 26-way flat ribbon cable (LM0056) for connection to one of the IO-NET output connectors.

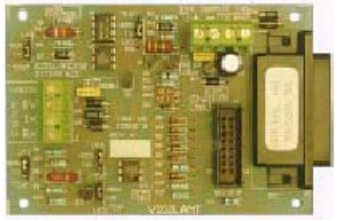
Specifications

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
Weight	350g

Part Number

PA0470	PCB 1901-64 16W Relay board

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 a VIGILANT fire alarm panel RZDU port.

Specifications

Operating Voltage	17 to 30 Vdc
Operating Current	5mA
Dimensions	104 x 72 x 23 mm
Weight	100g

Part Number

PA0481	PCB 1904-100 RZDU/RS232 I/F

I-HUB Ring Networking

The I-HUB is a part of the family of products that connect to the VIGILANT Panel-Link network. The I-HUB performs bridging and routing functions for the Panel-Link network. The I-HUB supports ring, multi-drop and point-to-point networks. Deploying an I-HUB in a ring can add extra levels of redundancy and service protection otherwise not possible in conventional Panel-Link networks.
The I-HUB can be used in a number of different applications. The following diagrams illustrate some of the possible I-HUB uses. Please note that these are a small overview of what can be achieved using the I-HUB and do not represent detailed implementations. Duplicated channel operation is a standard feature of the Panel-Link Network and in certain conditions is a requirement to meet fire installation standards. Refer to the appropriate standard, AS1670.1 for Australia, NZS4512 for New Zealand.

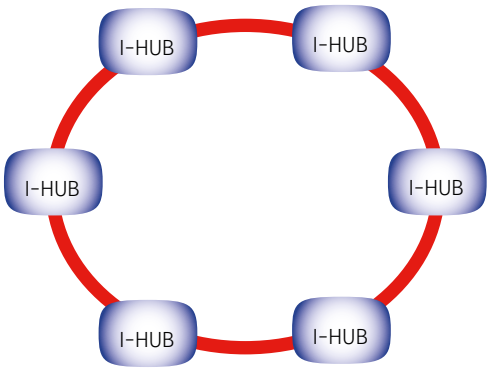


Fig 1 Network Ring example

The "RING" method shown in Figure 1 provides a level of redundancy not found in other kinds of network topology. The 'ring' configuration, with an I-HUB incorporated in each panel, is one way of providing the two separate paths required by AS1670.1 section 2.6.1 (c) and NZS4512:2010 402.2 (o).

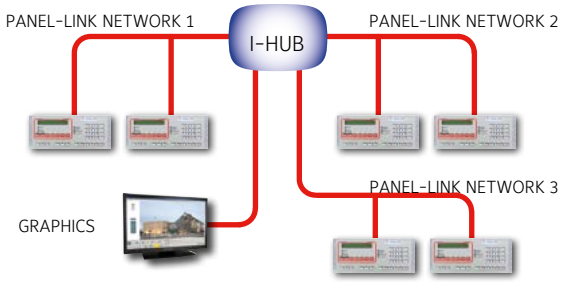


Fig 2 Joining Multiple Networks

The I-HUB can be used to connect two to four Panel-Link networks together to allow a greater physical length as shown in Figure 2.

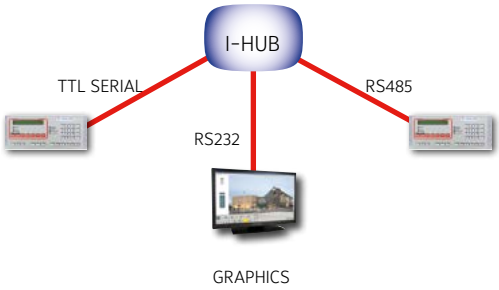


Fig 3 Networking Different Media

The I-HUB can be used to interconnect two or more networks that use different media or signalling speeds.

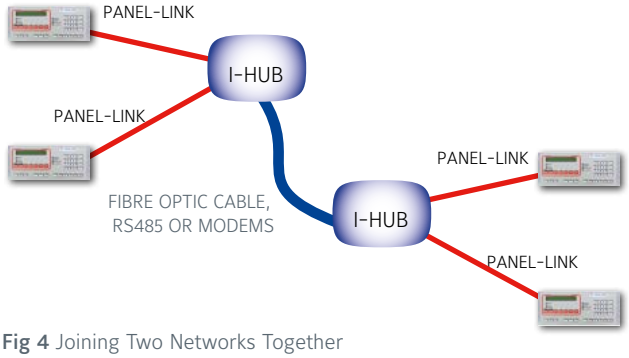


Fig 4 Joining Two Networks Together

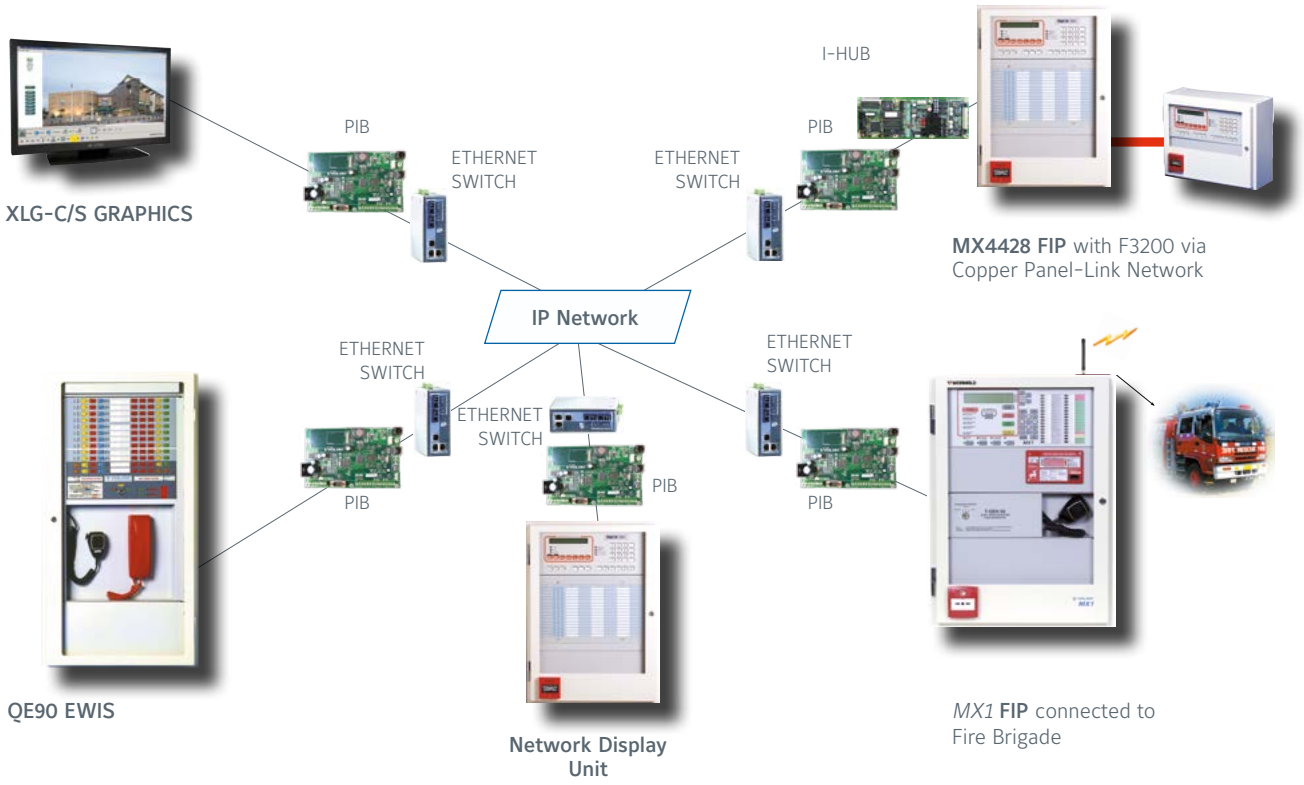
Two I-HUBs can be used to connect two distant Panel-Link networks together using fibre optic cables, modems or a customer-supplied network (WAN).

With large systems, care must be taken to minimise the number of messages that are passed through an I-HUB so as to avoid overloading any part of the network. For slow data links such as one using 1200 baud modems, the absolute minimum number of messages should be passed across it.
With the exception of RING mode, network designs that result in more than one path to any one device must be avoided.

Part Numbers

FP0771	F3200/MX4428 Ring Network Upgrade Kit
PA0839	PCB ECM9603 Panel-Link I-HUB
KT0144	Kit PMB/TPI RS485 Support Module
PA0773	PCB RS485 TTL
PA0868	PCB CMOS RS232 Interface
PA0878	PCB CMOS/TTL Signal Splitter
PA0880	PCB DB25 to 10-way FRC Adaptor
LM0572	LOOM, I-HUB to OSD139 Fibre Optic Modem
LM0076	ECM Programming Cable, DB9F - DB9F Null Modem
OSD139HS	Fibre Optic Multi mode RS232 Modem
OSD139HSL	Fibre Optic Single mode RS232 Modem

VIGILANT IP Networking



VIGILANT IP (Internet Protocol) Networking opens up a world of previously unimaginable possibilities, particularly for large, remote, and difficult sites. It is now both possible and easy for fire systems to be networked across large distances (such as within, or even between, cities) and / or to network on a large site using a customer's own network without installing new dedicated cables.

IP networking is often the most cost-effective method of networking between panels, and/or providing remote diagnostics and programming for many panels from a single point on the site, or even from off-site. This applies particularly when long distances are involved, or where special media must be used (i.e., media other than copper wire).

IP networking can use an existing customer's network (where standards compliance is not required for the networking), or alternatively a dedicated standards-compliant IP network can be installed for the fire system. Note: only some configurations are standards-compliant.

If a connection to the internet can be provided, remote diagnostic access could be obtained from virtually anywhere in the world.

The VIGILANT IP solution uses a PIB (Panel-Link IP Bridge) to connect between a VIGILANT Panel-Link device and the IP network. Additional Ethernet switches and Ethernet Extenders allow operation over fibre optic cable or long cable distances.

Features	Benefits
Uses an industry-standard interface (Ethernet) and standard protocols	Suports a wide variety of third party interfaces
Can use a wide variety of physical media	Provides a cost-effective solution for short and long distance communication Can use fibre-optics to eliminate susceptibility to EMC (electrical interference) Can use wireless transmission systems where physical access is difficult
Provides remote access to panel diagnostics and programming, as well as providing networking	Diagnostics and programming of a whole network can be done from a single point on site, or potentially from off site
Web access is provided via panel serial port	Uses standard web browser for remote diagnostics. No special software (such as a terminal emulator) needs to be installed. This is particularly useful when using a customer's network
Many 'channels' can be multiplexed over the same cable	The same network can be used for a Fire and EWIS network, Colour Graphics client / server network, etc.
IP networking can be used for subsections of a Panel-Link network	Existing installations can be upgraded to IP networking in stages, or can use mixed systems
The interface is specially designed for Panel-Link and VIGILANT products	Avoids a large number of compromises that result if an IP interface was used

Graphics

XLG - Client/Server (XLG-C/S) Colour Graphics

Using a combination of symbols, floor plans, pictures and text, XLG-Client/Server (XLG-C/S) can display the precise location of a fire alarm event and give detailed emergency response instructions. Communications can be established with floor wardens via EWIS WIP phones to co-ordinate evacuation procedures. A detailed map of the affected area can be printed automatically for use by emergency response personnel. Prompt response to a fire emergency, with the correct action, provides the opportunity to greatly improve safety and reduce financial loss. Multiple XLG Client terminals can be connected on the same network for redundancy or ease of operation. Individual user access levels allow maintenance/engineer's functions for performing higher level network investigations and configuration changes, as well as limited lower-level operator functions. XLG-C/S is able to annunciate and control both Fire and EWIS/ Occupant Warning systems.

Operation

When the status of a device on the network changes, the screen displays the type and location of the event. The operator can then navigate to a more detailed view of the zone or device.

From the XLG-C/S screen (with the appropriate password access) the operator has the ability to:

- acknowledge alarms
- silence sounders & turn off visual indicators
- perform a system reset.

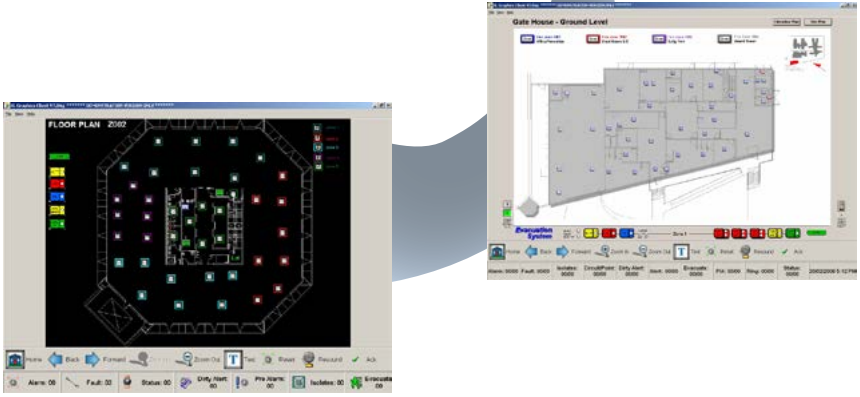
Route arrows showing the recommended access path for the fire brigade can be displayed on alarm events screens. Custom alarm and fault messages can be added to provide operator dispatch assistance. Location-specific information, such as hazardous material storage and lists of people to notify, can be automatically or selectively displayed.

Features

- Monitors all events on Fire and EWIS networks using graphics and text
- Automated graphic display and printing of latest fire event locations
- Simple and effective graphic interface
  - Custom alarm and fault messages guide an operator through dispatch response
- Extensive history logging
  - Full and extensive event log of the entire fire and evacuation graphics system
  - Rapid event filtering for easy event location
  - Printing of event log, graphics screens and fire system reports
- Multiple XLG terminals on a network can perform redundant operation or specific functions
- Easy site configuration
  - Point-and-click device positioning and configuration
- Supports common graphics file formats
  - Importing of CAD drawing files, metafiles, image files and scanned media
- Centralised security and service administration
  - Multiple operator levels with password control
- One-off configuration for all terminals
- VIGILANT Panel-Link network support
  - Enables monitoring and control of fire alarm and evacuation/ occupant warning networks
  - Integrates numerous Fire Indicator Panels (FIPs); Conventional and Analogue Addressable
  - F3200 and *MX1* via IP Networking (requires VIGILANT PIB)
- Supports a variety of Fire Detection systems
  - VIGILANT *MX1*, MX4248, F3200, QE90
  - SIMPLEX 4100 range
  - MINERVA *MX*
- Graphical diagnostic tools identify status of fire network nodes
  - PC environment monitor

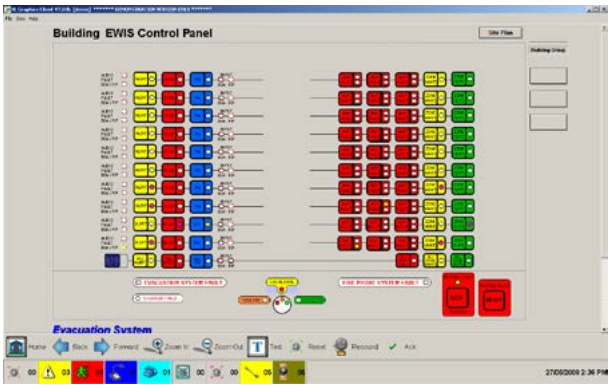
XLG-C/S Screens

Graphics screens can provide easily recognisable site plan and floor plan information. The level of detail can be customised for the specific facility to easily and accurately direct the operator to the immediate area of interest. Optional icons can be added to identify the exact device of interest, and may be used to directly navigate to other predetermined screens for more detail.
In addition to screen text or graphical information, the operator can be presented with specific messages that provide emergency response information and directions. These messages can be easily edited to suit local requirements.



XLG Client Screens

XLG-C/S Typical Screen



XLG-C/S Virtual ECP Screen

Multiple Network Integration

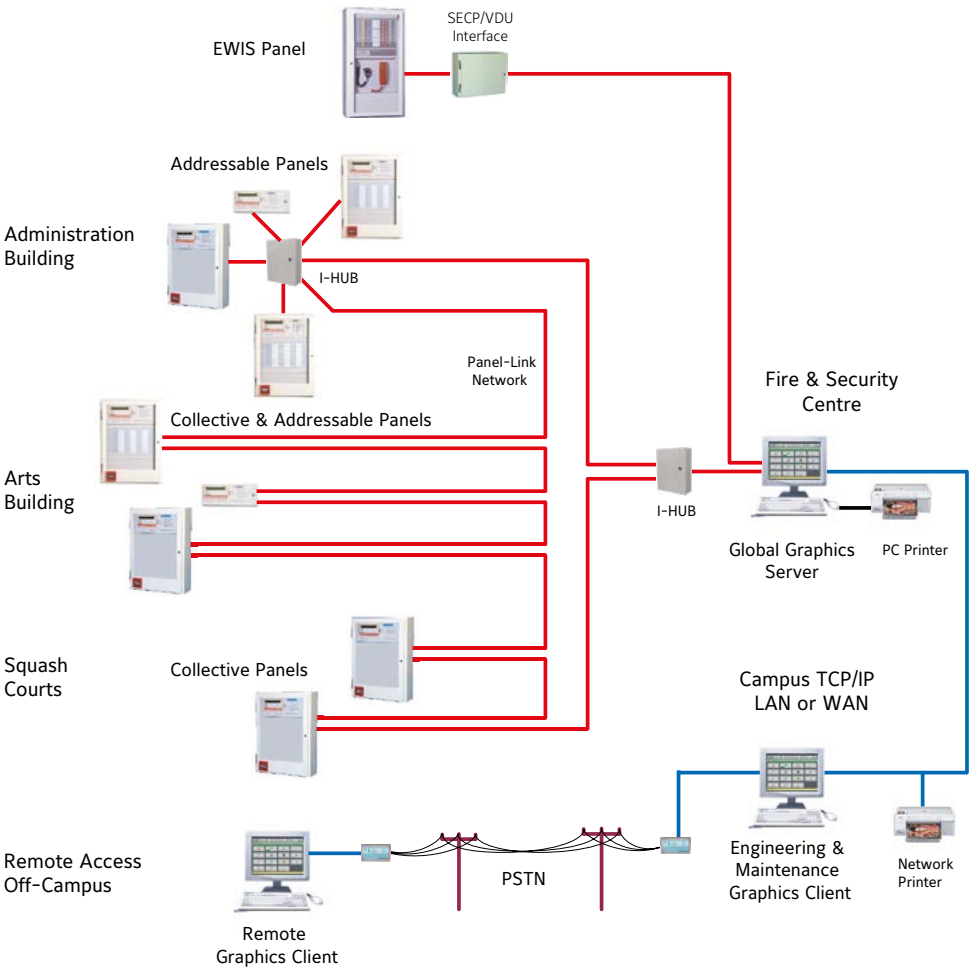
XLG-C/S supports extensive fire network integration and interconnection. Multiple networks as well as conventional FIPs can be monitored and controlled by XLG-C/S.

Each fire network and/or standalone FIP connected to the Panel-Link network interfaces to the XLG Server using a suitable communications device such as the Protocol Translation Module (PTM), Intelligent-Hub (I-HUB), or Panel-Link IP Bridge (PIB) depending on the network configuration.
EWIS networks interface to the XLG Server using a SECP/VDU Interface.

Each XLG Client terminal communicates with the XLG Server using IP networking.

XLG-C/S Operation on Panel-Link Network

- VIGILANT Panel-Link Network
  - Multidropped RS485 connections or IP via various media
  - Up to 64 networked devices multidropped depending on required functionality
  - Multidropped cable length <1200m, shielded twisted pair
  - Galvanic isolation between panels & network
    - High noise immunity
    - Reduced earth loop problems
  - I-HUBs used to extend copper network (ring configuration)
  - Link Integrity function supervises XLG-C/S network



Hardware Requirements:

1. Fire panels on the Panel-Link network connect to the XLG Server using the PTM, I-HUB or PIB interface. EWIS panels are connected using the SECP/VDU Interface. The XLG Server requires a serial comm's port for each interface.
2. The XLG Server must have a free USB port.

Software Requirements:

1. WINDOWS 7 32-bit or 64-bit Operating System (WINDOWS 8/10 not currently supported)

Part Numbers

CG0002-SERVER	XLG-C/S Client/Server Software & Dongle
CG0002-CLIENT	XLG-C/S Client only Software
FP0586	PTM Protocol Translation Module in box
FP0697	SCP/VDU Interface (requires programming)

See also pages 50 (I-HUB Networking) and 51 IP Networking).

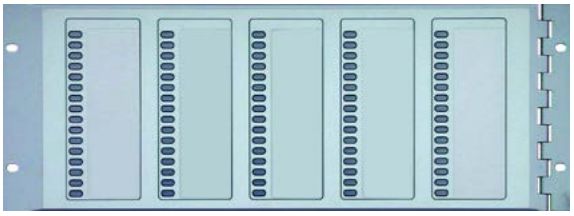
LED Display Extender Modules

Additional LED Display - 7U Door
Increasing the number of LED zone displays on either an NLDU or MX4428 requires 1 x ME0060 plus 1 x LM0092 (NLDU) plus up to 4 x FP0475 (as required). The 7U Display Door 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.

ME0060 7U Inner Display Door

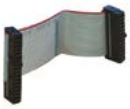
FP0475 Display Extender Kit, (Incl. PA0454 16Z Display PCB, LM0046, standoffs, power leads, diffuser, Zone name label master)
LM0092 Loom FRC 26W Keyboard to First Display, 1.1m shown.

Additional LED Display - 4U Door
Increasing the number of LED zone displays on either an *MX1* or MX4428 requires 1 x ME0457 plus 1 x FP1002 plus up to 4 x FP1002 (as required.) The 4U Display Door mounts directly below the standard 4U LCD. The Zone LEDs are Alarm (Red) and Isolate/Disable (Yellow). A Zone name space of 9mm x 44mm per zone on a paper label; e.g. 1 line of 12 characters at 5mm high (23 characters at 3mm high).



ME0457 4U Inner Display Door

FP1002 16Z Display PCB



LM0339 Loom FRC 26W Kybd to 1st Disp, 200 mm

Table 1. Cables for 4U LED Display Door

	F3200/ NDU/ NLDU	MX4428	*MX1*
Controller to highest numbered LED Display Board	LM0092	LM0295 or LM0056	LM0092 or LM0339*
Controller Connector	J13 on Controller Board	J6 on Main Board	J2 on LCD/ Keyboard
Connect additional 4U LED Display Door	LM0056	LM0056	LM0056 or LM0291*
Inter-connect LED Display Boards	LM0291	LM0291	LM0291*

* LM0291 and LM0339 are included with FP1002

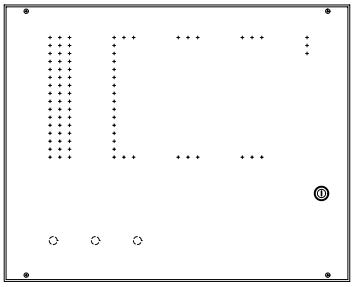
Table 2. LED Display Module Comparison

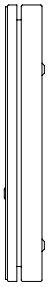
	FP1002	FP0475
Dimensions	144 x 52 mm	250 x 97 mm
Electrical	Electrically identical; FP1002 uses 1/3 of the power	
End-of-Chain link	Not Required	Required
Separate Fault LED	No	Yes
External Output	No	Yes

Part Numbers

FP0475	Display Extender Kit (incl. PA0454, LM0046, standoffs, power leads, diffuser, Zone name label master)
FP1002	4U 16 Zone LED Display PCB (incl. PCB, LM0291 FRC, LM0339 FRC, mounting hardware)
ME0060	7U Inner Display Door 1901-75 (incl. M6 fasteners). It mounts up to 4x 16 Zone LED display boards
ME0457	4U Inner Display Door (mounts up to 5x FP1002 LED Display Boards)
LM0044	FRC 26W Style B 2m
LM0045	FRC 26W Style B 5m
LM0046	FRC 26W Style B 500mm
LM0049	FRC 26W Style B 250mm
LM0056	FRC 26W Style B 1400 mm
LM0092	FRC 26W Kybd to 1st Disp, 1100mm
LM0291	FRC 26W Style B 230 mm
LM0295	FRC 26W Style B 700 mm
LM0339	FRC 26W Kybd to 1st Disp, 200 mm

Picture Frame Display (PFD) Mk2





The VIGILANT Picture Frame Display (PFD) Mk2 comprises a slim cabinet which houses a 31-Zone brigade index using the LED-RZDU (PA1048) and (if required) *MX1* 16-zone Display Boards (FP1002). The PFD cabinet can alternatively accommodate one 16-Zone FP1600 Mimic Display Board (PA0787) for multicore or FRC connection to a panel. This configuration requires a custom index.
The key switch loom and key switch label can be ordered separately if required.

Specifications

Dimensions (mm)	440H x 515W x 60D
Material	1.2mm Zinc coated mild steel
Finish	Cream Wrinkle powdercoat
Index	3mm thick White Acrylic
Lock type	003 keyed
Hinging	Left hand hinged
Cable Entry	4 x 25mm Knock-outs top/bot 2x 20mm Knock-outs in sides
Bulgin key switch	3 x holes, FP1600 spacing

Part Numbers

FP0967	PFD Mk2
LM0356	Key Switch Loom
FA2074	Key Switch Label - Cream

19 inch Rack Cabinets

FP0576 Empty Battery Box
Dimensions 440x550x211mm (HWD)

ME0251 QE90 21U Cabinet only.
Dimensions 1050x573x312mm (HWD)
(shown with QE90 system installed)

Blanking Panels *incl. mounting hardware*

FZ9002	7U Blank Inner Door (312mm)
FZ9003	6U Blank Panel Acrylic (267mm)
FZ9016	6U Blank Panel (267mm)
FZ9015	5U Blank Panel (223mm)
FZ9004	4U Blank Panel (178mm)
FZ9005	3U Blank Panel (134mm)
FZ9006	2U Blank Panel (89mm)
FZ9007	1U Blank Panel (45mm)

***MX1* Cabinets**

FP1029	8U Battery Box Titania
FP1030	15U Empty Window Cabinet Titania
FP1031	15U Empty Blank Cabinet Titania
FP1084	15U Empty Full Window Cab. Titania
FA2581	8U Blank Door Titania
FA2600	8U Titania Flush Surround
FA2601	15U Titania Flush Surround
FA2602	8U+15U Titania Flush Surround
ME0503	15U Std Window Door Titania
ME0505	MCP Blank Plate Titania

Accessories

NT0030	Nut, Cage M6 zinc plated
SC0058	Screw, Machine Pan Pozi M6x12 zinc pl
WA0008	Washer, Flat M6x1.2 zinc plated
ME0258	1919-21-2 RAC CAB 1U SHELF 135 DP
ME0259	1919-21-1 RAC CAB 1U SHELF 310 DP

Gear Plates

FA1917	Blank 15U 450x430x10 (HWD)
FA1267	F3200 std 15U 480x460x10 (HWD)
FA1185	F4000 std 15U 450x460x10 (HWD)
FA2040	MX4428 std 15U 540x460x10 (HWD)
FA2454	*MX1* std 15U 482x455x140 (HWD)
FA2564	*MX1* 18U Sided 776x480x188 (HWD)
FA2656	*MX1* 28U Sided 1186x480x188 (HWD)
FA1984	18U Sided 770x482x10 (HWD)
FA1983	18U Sideless 770x483x10 (HWD)
FA1199	28U Sided 1200x483x180 (HWD)
FA1366	28U Sideless 1200x483x10 (HWD)
FA1846	QE90 std 21U 480x489x175 (HWD)

Other Cabinets (not 19 inch rack)

ME0088	IOR Cabinet 449x494x82 (HWD)
ME0292	T-GEN 50 Cab 294x240x85 (HWD)
FP0944	*MX1* Empty Cab 590x480x120(HWD)
SP0424	FP1600 Empty Cab R/S 510x485x110
SP0425	FP1600 Empty Cab F/S 510x485x110
SM0437	SIGMA 5 Empty Cab F/S 350x290x100 (HWD)
SM0471	SIGMA 5 Empty Cab R/S 350x290x100 (HWD)
FP0552	FP1600 Blank Cab 510x485x110
FP0529	Responder Box Empty 240x185x53

Standard Cabinet Part Numbers

FP0556	F3200, Empty Cab, c/w window
FP0557	F3200, Empty Cab, c/w blank door
FP0576	F3200, Battery Box
FP0584	F3200, Small Empty Cab, full window
ME0250	20Ux200 IP65 990x630x260 (HWD)
ME0341	Rack Cab, 20Ux310 IP65
ME0260	Rack Cab, 20Ux310, 304 S/S IP65
ME0270	Rack Cab, 30Ux310 IP65
ME0280	Rack Cab, 40Ux310 IP65
ME0252	Rack Cab, 18U 135, Full Wndw
ME0253	Rack Cab, 18U 310, Full Wndw
ME0268	Rack Cab, 21U 310, Full Wndw
ME0254	Rack Cab, 28U 135, Full Wndw
ME0255	Rack Cab, 28U 310, Full Wndw
ME0256	Rack Cab, 40U 135, Full Wndw
ME0257	Rack Cab, 40U 310, Full Wndw
ME0262	Rack Cab, 18U 135, Blank Door
ME0263	Rack Cab, 18U 310, Blank Door
ME0269	Rack Cab, 21U 310, Blank Door
ME0264	Rack Cab, 28U 135, Blank Door
ME0265	Rack Cab, 28U 310, Blank Door
ME0266	Rack Cab, 40U 135, Blank Door
ME0267	Rack Cab, 40U 310, Blank Door

ME0251	Small QE90, 21U 310, Full Wndw, Crm
ME0261	Small QE90, 21U310, Blank, Cream

(These cabinets have studs fitted for QE90 modules)

Standard Cabinet Sizes

Part No	Units	Dimension (internal depth)
FP0584	8U	440x550x211 (180 Deep)
FP0556	15U	750x550x211 (180 Deep)
FP0576	8U	440x550x211 (180 Deep)
ME0252	18U	885x575x205 (135 Deep)
ME0253	18U	885x575x380 (310 Deep)
ME0268	21U	1050x575x312 (310 Deep)
ME0254	28U	1330x575x165 (135 Deep)
ME0255	28U	1330x575x340 (310 Deep)
ME0256	40U	1865x575x165 (135 Deep)
ME0257	40U	1865x575x310 (310 Deep)

Special IP65 Cabinet Sizes

ME0250	20U	990x630x260 (200 Deep)
ME0260	20U	S/S 990x630x370 (310 Dp)
ME0341	20U	990x630x370 (310 Deep)
ME0270	30U	1435x630x370 (310 Deep)
ME0280	40U	1879x630x370 (310 Dp)

Finish

Standard Cabinet
Baked Epoxy Powdercoat, Cream Wrinkle BFF998CW.

MX1 Cabinet (19inch Rack)
Baked Epoxy Powdercoat DULUX DURALLOY Tiitania

MX1 Cabinet (Slimline)
Baked Epoxy Powdercoat, Cream Wrinkle BFF998CW

IP65 Cabinet
Off-White Gloss Powdercoat, Western PE802S.

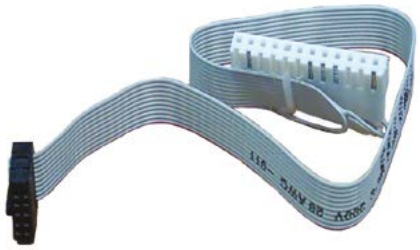
Stainless Steel Cabinet
Natural finish.

Looms and Cables

Looms

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

LM0065 RS-485 Comms 10W FRC to DB9



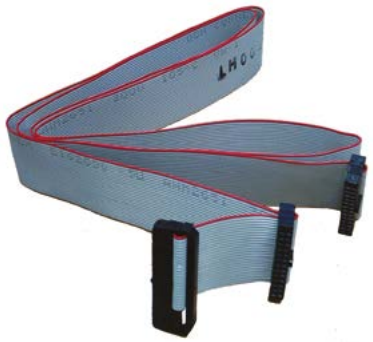
LM0185 MX4428 Molex to CMOS/RS-232 1901-214

LM0047 Loom FRC 26W Style D 1.3m QE90 TRAN8872

LM0076 Prog DB9F to DB9F (ADU, ECM)

LM0049 Loom FRC 26W Style B 0.25m

LM0053 Loom FRC 20W Style A 0.3m



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

Cables

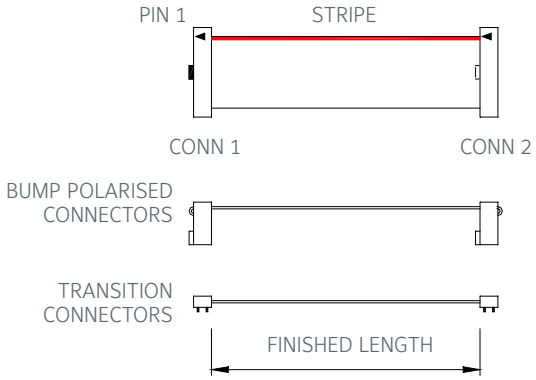
A range of commonly-used fire system cables is available from Johnson Controls Fire Detection. These include specially-manufactured 2+2 core Responder loop cables for MX4428 systems. Cable is available only in the drum lengths shown.

Part Number	Cores	X-sec	Sheath and Type	Length (m)
Standard TPS cable				
CA1021	2	1.0 mm^2	Red TPS	100
CA1022	2	1.0 mm^2	Red TPS	200
CA1521	2	1.5 mm^2	Red TPS	100
CA1522	2	1.5 mm^2	Red TPS	200
CA2521	2	2.5 mm^2	Red TPS	100
MX4428 Responder Loop cable				
CA1510	2 + 2	1.5/1.0 mm^2	Red TPS	250

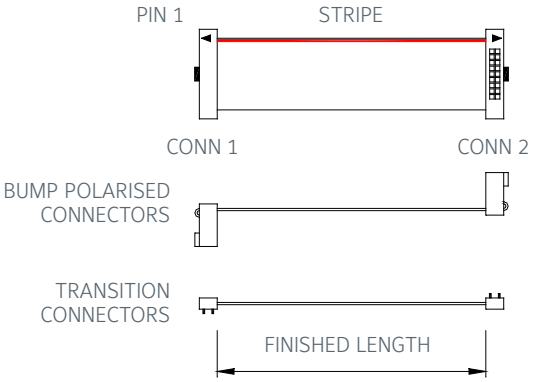
Loom Style Types

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

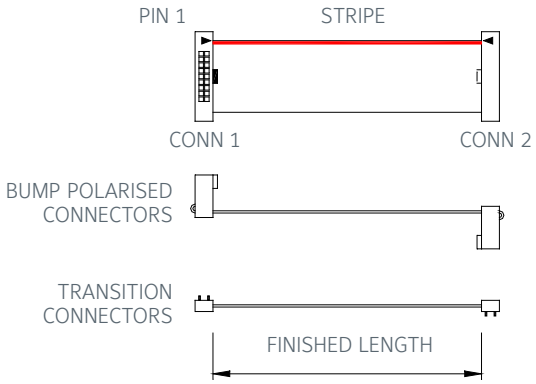
STYLE A



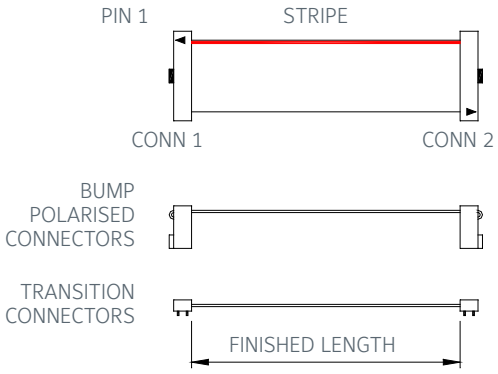
STYLE B



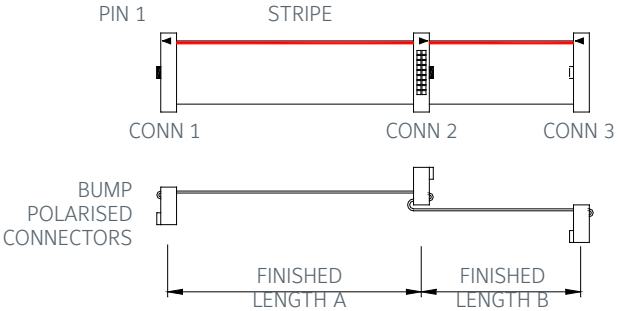
STYLE C



STYLE D



STYLE E

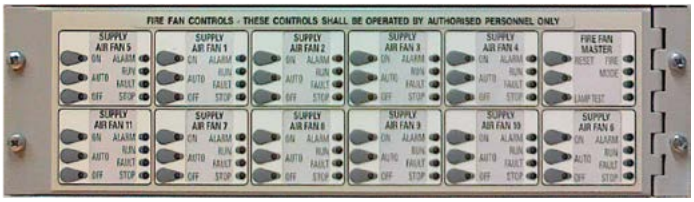


Looms and Cables

ITEM CODE	EXTENDED DESCRIPTION	APPLICATION
LM0041	LOOM F3200/F4000/FP4000/MX4428 PROG TO DB9F SERIAL 1888-58	F3200/F4000/MX4428
LM0042	LOOM F3200/F4000/FP4000/MX4428 PROG TO DB25F SERIAL 1888-62	F3200/F4000/MX4428
LM0044	LOOM FRC 26W STYLE B 2.0m	
LM0045	LOOM FRC 26W STYLE B 5.0m	
LM0046	LOOM FRC 26W STYLE B 0.5m	F3200 8Z MAF to Controller
LM0047	LOOM QE90 TRANSFORMER MODULE TWISTED FRC 26W STYLE D 1.3m	QE90
LM0048	LOOM FRC 20W STYLE B 0.25m (ECP Interconnect)	QE90
LM0049	LOOM FRC 26W STYLE B 0.25m	
LM0056	LOOM FRC 26W STYLE B 1.4m	*MX1*/F3200/MX4428
LM0060	LOOM FRC 34W STYLE B 1.2m (ECP to SPIF/SE9004 board)	QE90
LM0061	RZDU/RS232 FRC incl with PA0481	
LM0065	LOOM 1901-174 RS485 COMMS BD (also ECM) 10W FRC TO DB9 CABLE	QE90
LM0073	LOOM FRC 20W STYLE C 1.45m	
LM0076	LOOM ECM PROG DB9F - DB9F 1922-25	QE90/ADU/I-HUB/*MX1*
LM0084	LOOM FRC 10W STYLE B 0.35m	
LM0091	LOOM FRC 10W STYLE C 0.5m	F3200 Network
LM0092	LOOM FRC 26W STYLE E F3200 MKII CTL TO 1ST DISP 1931-88 1.1m	F3200
LM0098	LOOM FRC 34W STYLE B 0.8m (WTRM board to WIPS board)	QE90
LM0101	LOOM QE90 FRC 26W STYLE E 0.45m + 0.9m QE90	QE90
LM0107	LOOM FRC 16W STYLE C 0.7m (LCD to Main Board)	MX4428/F4000
LM0131	LOOM SERIAL PRINTER CABLE DB9(M) TO DB9(M) + DB9(F)	
LM0138	LOOM DB9M-DB9F PINS STRAIGHT THROUGH 1.8m (non-ECM prog. cable)	QE90
LM0141	LOOM QE90 AMP200 INTERCONNECT LOOM 150mm 699-253	QE90
LM0151	LOOM FRC 10W to MOLEX MX4428 RING NET U/G X-OVER 1901-201 1.1m	F4000/I-HUB [F4000 < Iss C]
LM0152	LOOM FRC 10W ECM/F3200 NETWORK X-OVER 0.7m	F3200/MX4428 Iss C/I-HUB
LM0161	LOOM FRC 10W STYLE A 0.1m	
LM0166	LOOM V-MODEM RJ45-DB9 FEM PLUG 1963-55	V-MODEM
LM0168	LOOM V-MODEM DB9M TO 4W MOLEX 1963-55	V-MODEM
LM0172	LOOM FRC 10W STYLE A 0.25m (PSU to Main Bd, also Main Bd to Network bd)	MX4428/F4000
LM0291	LOOM FRC 26W STYLE B 0.27m	*MX1*/F3200/MX4428
LM0295	LOOM FRC 26W STYLE B 0.8m	
LM0319	LOOM, *MX1* MAINBOARD TO T-GEN 50	*MX1*
LM0324	LOOM, FRC 10W STYLE B 0.9m (Keyboard to Main Board)	*MX1*
LM0339	LOOM FRC 26W *MX1* CTL TO 1ST DISP 0.22m	*MX1*

AS 1668 Controls and Gas Controls

AS 1668 Control Module Kits - *MX1*



FP1056 3U Door with 12x AS 1668 Control Positions c/w 2x Fan Controls (*MX1* only)

FP1057 Expansion Kit (only PCB shown)

AS 1668 Fan Controls for use on the VIGILANT *MX1* fire alarm system provide up to 126 fan controls per panel. They feature push button controls, can be duplicated between *MX1* panels over a network, and have been assessed to the functional requirements of AS 4428.7-1999. These controls can also provide convenient general purpose switches and indicators for ancillary functions such as drain valves, deluge control, and test switches.

The **FP1057** Expansion Kit provides 2x Additional Controls. Up to 5x FP1057 can be added to FP1056 to give 12 Fan Controls per 3U Door (*MX1* only).

Part Numbers

FP1056 *MX1* 3U 12x AS 1668 Controls (two fitted)

FP1057 *MX1* 2-Way AS 1668 Control Expansion Kit

AS 1668 Control Module Kits - MX4428/F3200

The AS 1668 modules/kits consist of small PCBs that are fitted with the required components for several different AS 1668 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 AS 1668 type control circuits can be achieved by using KT0113 module using different wiring configurations, and/or by minimal PCB modification (i.e. the cutting of two components). While the kits were primarily developed to simplify factory assembly of custom panels with AS 1668 controls, they are available to purchase for fitting to panels in the field.

Refer to the Product Bulletins PBG0015C and PBG0145C and manuals LT0159, LT0368 and LT0438 for further information regarding AS 1668 kits.

Circuit Type	3	4
AZCs Used	2	2
Open Collectors Used	2	3
Relays Used	1	1
Load Current (max.)	1A	1A
Load Supervised Option?	Yes	Yes
Fail Safe Load Option? (non- supervised load)	Yes	Yes
Air Flow Switch Supervised?	Yes	Yes
Fault If Not Running?	Yes	Yes
Fault If Not Stopped?	Yes	Yes
Fault After Delay?	Yes	Yes
Programmable Switch Logic?	Yes	Yes
Load RUN State Programmable?	Yes	Yes
All LEDs Programmable via Logic?	No	Yes

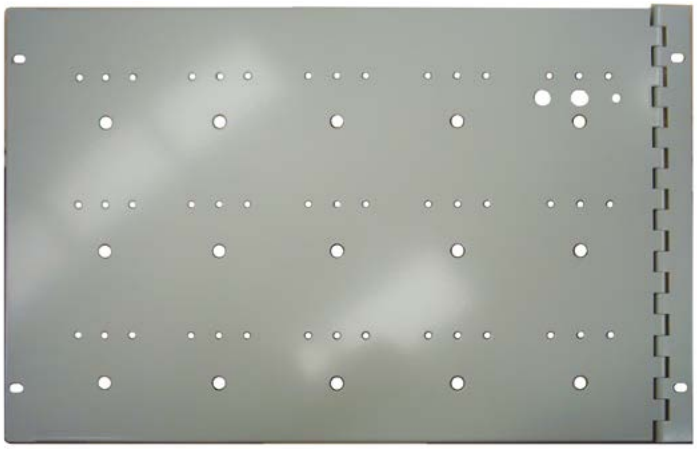
NOTES: 1 Open Collector OR 1 Relay output (as available)
Open Collector = 0.1A maximum
Relay Contacts = 1A maximum

Part Numbers

FZ9011	7U Door 19" Rack, 5 x AS 1668 Controls
FZ9012	7U Door 19" Rack, 15 x AS 1668 Controls
FZ9036	2U Door 19" Rack, 5 x AS 1668 Controls
KT0113	Kit, 1945-1-3 AS 1668 Control Module Type 3/4
KT0512	Kit, 4 x AS 1668 + Common Master Control Module
KT0478	Kit, AS 1668 5 way Fan Control Module

FZ9036 2U Panel with 5x AS 1668 Fan Controls Drilled

KT0113 Kit, AS 1668 Control Module Types 3/4

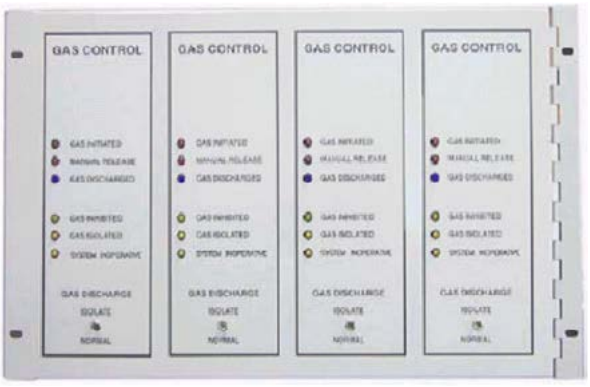


FZ9012 7U Panel with 15 x AS 1668 Fan Control positions (includes mounting hardware)

KT0478 Kit, AS 1668 5 way Fan Control Module
(Includes PCB, 5x switch knobs and caps, 5x panel labels, 2x 26W FRC 2m cables, LT0368 instructions).
Optimised for use with MX4428 IOR.

FZ9011 7U Panel with 5 x AS 1668 Fan Control positions (includes mounting hardware)

Gas Control Modules



ME0441 4 Zone Gas Flood 7U Door

ME0442 1 Zone Gas Flood 1U Plate and Loom

Gas Control Modules provide indication and control of 1-4 zones of gas extinguishing on compatible 19in rack mounted c.i.e. (e.g. F3200 and MX4428). 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.

Specifications

Dimensions (mm)

7U Door	485 x 312 (WH)
1U Plate	485 x 45 (WH)

Part Numbers

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 Plate & Loom

Local Gas Control Station

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. Both versions utilise a resettable flexible element.

Specifications

Dimensions (mm)

FP0570/2	192 x 124 x 82 (HWD)
FPANZ Listed	VF/663

Part Numbers

FP0570	1937-3-1 Local Gas Control Station - Auto
FP0572	1937-3-2 Local Gas Control Station - Manual
SU0601	Spare Glass Element (pkt 10)

MX1-NZ Fire Suppression Control Solution

The *MX1* Gas Flood / Fire Suppression solution uses a standard *MX1*-NZ analogue addressable Fire Alarm System (Slimline or 19" rack format) plus other off-the-shelf components such as *MX1* 16-zone LED display boards, *MX1* detectors, Local Gas Control Stations (LGCS), AVI signs, and a kit (KT0507).
Configuring an *MX1* Gas Flood Controller from the standard SmartConfig Template simply requires adding the detection points, mapping them to the appropriate zones, entering point and zone names, checking timing and operational defaults, and configuring any extra ancillary outputs. The fire detection can be point detectors, VESDA, or a combination of these. Pre-defined zones are used for combining detection devices, control station inputs and outputs, and actuator outputs. The Template logic uses the status of these zones to perform the gas logic operation.
Visual Warning Device control outputs are provided for connection of VIGILANT Audio Visual Indicators (AVIs). Automatic switching of AVIs for Stage 1, Stage 2, plus optional Stage 3 (Gas Discharged), is provided (additional relays required).

The *MX1* Single Zone accessories kit provides the hardware items necessary to convert a standard *MX1* into a single risk gas supression control panel. Additional items (LGCS, AVI, etc.) are also required. Refer LT0462.

Part Number

KT0507	*MX1* Single Zone Gas Access.

VIGILANT Remote Annunciators

Compact Firefighter Facility (FF)

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 Networked fire alarm systems, e.g. MX4428 and F3200, and VIGILANT RZDU panels MX4428, F3200, FP1600 and Sigma 5. The Compact FF is able to display alarms and selectively control fire alarm panels connected, and this may be modified by programming to achieve a variety of display and control facilities.

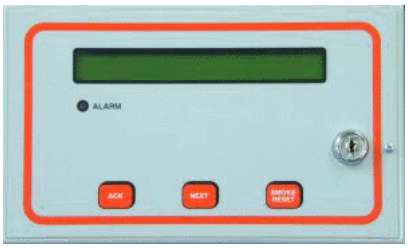
Specifications

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
FPANZ Listed	VF/665
ActivFire Listed	afp-789, afp-1446

Part Numbers

FP0865	Compact FF surface mnt
FP0866	Compact FF flush mount
LM0076	DB9F-DB9F prog. cable

Nurse Station Annunciator (NSA)



The Nurse Station Annunciator (NSA) 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 Networked fire alarm systems, e.g., *MX1*, MX4428 and F3200 and VIGILANT RZDU panels - *MX1*, MX4428, F3200, FP1600, Sigma 5. 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
IP Rating	IP41
Cabinet (surface)	250x150x50mm HWD
(flush)	301x192x75mm HWD
Weight	2.5kg
FPANZ Listed	VF/664
ActivFire Listed	afp-789, afp-1446

Part Numbers

FP0880	Nurse station, flush mnt
FP0881	Nurse station, surface mnt
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

FP0791	NDU, AS4428 Slimline surf. mnt
FP0792	NDU, AS4428 Slimline flush mnt
FP0794	NDU, AS4428 4U, 19" rack mod.

Specifications

Power Supply	External 24Vdc
Quiescent Current	19mA
Alarm Current	78 mA
Inputs	
RDU MCP	Supervised, 10k ohm EOL
Outputs	
RZDU Comms	F3200/MX4428 compatible
Printer	Pseudo RS232, Xon/Xoff, 300 to 9600 baud
LED Display/Relay	33 (max) external boards
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
FPANZ Listed	VF/632

AS 4428.1 Remote Display Unit (RDU)

FP0789 4U 19" Rack Mount RDU

The AS4428.1 Remote LCD Display Unit (RDU) is an RZDU non-networked fire alarm repeater panel compatible with the MX4428 and F3200 range of fire alarm systems. It provides an alphanumeric display of alarms on a 2 line by 40 character LCD and keypad. The RDU's programmability enables remote displays to be configured for a variety of purposes using various modes of operation and freely programmable zone display mappings. In this way each RDU in a large system can be assigned to display exactly the zones required at that location. The text messages displayed on the LCD are programmed locally, or uploaded from the fire panel.

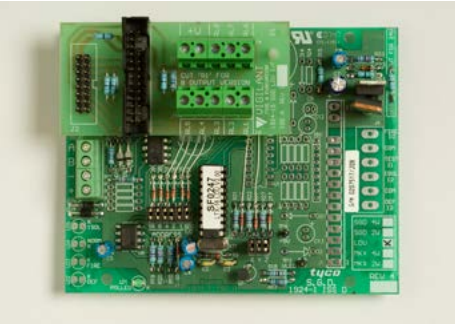
Specifications

As per AS 4428 NDU (no network interface)	
FPANZ Listed	VF/615
ActivFire Listed	afp-789, afp-1446

Part Numbers

FP0787	RDU, Slimline Wall Mount
FP0788	RDU, Slimline Flush Mount
FP0789	RDU, 4U 19" Rack

ASE Local Display Unit (LDU)



The ASE Local Display Unit (LDU) is designed to provide output status indication for up to 16 Private Fire Alarms (PFAs) connected via Signal Generating Devices (SGDs) to an ASE or ASE-16 concentrator. The LDU receives status information via an RS-485 connection from the ASE's Local Indication Port (LIP). This information is then decoded to drive output status LEDs or to provide open collector outputs as required. The LDU is supplied as a printed circuit board module for incorporation into the user's equipment. It can operate from 12 or 24 volt supplies (link selected).

Specification

Format	Unpackaged circuit board
Dimensions (mm)	119 x 95 x 40 (LWH)
Operating Voltage	
12V Typ	9.6-13.8V
24V Typ	19.2-28.3V
Current	
12V	15mA @ 12V - excl o/p current
24V	20mA @ 24V - excl o/p current
Operating Temp	0°C to +45°C
Baud Rate	2400, 4800, 9600 (link select)
Output Modes	2 to 8 Open Collector Outputs MX4428 LED Display Boards
+V Output Current	
12V	1A max
24V	100mA max
Open Coll. O/P	200mA max, 30V
LDU Cable	400m 1mm² TPS 1km T/Pair

Part Numbers

PA0471	ASE Local Display Unit Control Card
PA0475	16 Way x 3 LED Display Board (24V)
PA0480	16 Way Output Termination Board
PA0470	16 Way Relay Board C/W FRC (24V)
LM0044	2 Metre FRC
LM0045	5 Metre FRC
LM0046	0.5 Metre FRC

SGD

The VIGILANT 1924-25 General Purpose 2-Wire/4-Wire SGD transmits the Fire, Defect, Isolate and Test signals from a compatible Fire Alarm Panel or DBA (PFA) over 2 wires to the NZ Fire Service via the ASE Interface Unit and System. The SGD derives its power either from the ASE (4-wire mode), or locally from the system (2-wire mode) and has an on-board reserve supply to ensure signalling for a short time if the main supply fails. It operates in either single line or multidrop mode.
The GP version has a plug-on interface to compatible VIGILANT panels and it incorporates Brigade Test and Isolate switches.
"Classic" SGDs (PA0802/3) are used for hard-wired situations or use in panels with a legacy SAFE interface.

Specifications

Power Supply	
4 Wire SGD	9 to 15Vdc
2 Wire SGD	9 to 29Vdc
Current	
Standard	12mA to 20mA
Multidrop	5mA to 7.5mA
Ambient Temp	-10°C to +55°C
Relative Humidity	0 to 95% (non/cond)
Dimensions (mm)	120 x 96
FPANZ Listed	VF/502
Part Numbers	
PA0802	SGD Multidrop 4 wire
PA0803	SGD Multidrop 2 wire
PA0862	SGD GP PCB & Loom (with switches)

PA0861 General Purpose Brigade Relay Interface

The 1922-43 General Purpose Brigade Relay Interface is designed to provide compatible VIGILANT fire alarm panels and sprinkler FBAs with the means to connect to a wide variety of remote (Brigade) signalling devices. It is a single plug-on board, with duplicate clean contact relay outputs for FIRE and DEFECT, and on-board toggle switches for BRIGADE TEST and BRIGADE ISOLATE. More than 1500V electrical isolation is provided between the Interface's output terminals and the rest of the fire alarm system.

Specifications

Power Supply	9.6V to 18V (LK1 fitted) 19.2V to 32V (LK1 removed)
Current	
Normal	20mA
Defect/Fire	2mA to 38mA
Ambient Temp	-10°C to +55°C
Relative Humidity	0 to 95% (non/cond)
Dimensions (mm)	95 x 100 x 35
Weight	0.1kg
FPANZ Listed	VF/507
Part Number	
PA0861	PCB GP Brigade Relay I/F

PA1034 SAFE/Beneconda/Mk10 SGD

The SAFE/Benecoda/Mk10 SGD (SBM-SGD) is used to interface fire alarm and sprinkler systems with an existing SAFE Transponder, Benecoda Transmitter, or Mk10 Modulator onto the multidrop SGD system. This allows these older systems to be connected to the ASE's SGD ports without the need to change the existing transmitting device. The SBM-SGD appears as one or more multidrop SGDs connected to the ASE's SGD port. The SBM-SGD translates between the SAFE, Benecoda or Mk10 protocols and the SGD protocol. The SBM-SGD provides indicators to display the status (fire, defect, etc.) of the fire alarm or sprinkler system (PFA) and also provides a Brigade Test switch for use when connected to a Mk10 Modulator. The SAFE/Benecoda/Mk10 SGD can either be mounted in the ASE Mk2 cabinet (on the PCB standoffs above the battery), or in a separate enclosure, or in an existing fire alarm system cabinet (using the supplied adhesive - backed standoffs). The SBM-SGD and ASE Mk2 replace the LTX-3 when used with the Mk10 interface, and replace the LTX-8 when used with the SAFE or Benecoda interfaces. One SBM-SGD can interface up to eight SAFE Transponders.

Emergency 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 (via copper, IP, fibre)
- 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
- ActivFire listed afp-524 (Wormald)
- ActivFire listed afp-1423 (Simplex)
- 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 (opt)
- Operation of non-emergency Paging Console to perform WIP, BGM and general indication functions

Optional Extra Facilities:

- More than 3 WIP circuits per zone
- Secondary Emergency Control Panel(s)
- Remote amplifier racks
- Multiple FIP/ 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
- Special cascade sequences
- Automatic test sequence
- Warden zones to alert wardens of alarm in another area
- Monitor zones to repeat highest priority signal that other nominated zones are receiving
- After-hours timer input to override cascade
- Custom digitised multi-lingual voice messages
- Stand-by amplifier(s) with auto-changeover
- Distributed amplifier system
- Inter-ECP WIP calls
- 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
- Paging chimes
- PABX paging interface
- Local zone non-emergency paging
- Event-logging printer
- High-level data links
- Networking (multiple media options)
- 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					

Spares - Refer to Page 107

A Combo QE90/Fire Panel is available. Contact Johnson Controls Fire Detection for more information.

A QE90 Configuration Sheet must be completed and submitted with each QE90 order for new panels and upgrades to existing panels. Refer to the relevant Johnson Controls Product Bulletin for guidance on completing the configuration sheet.

QE90 Ancillaries & Spares

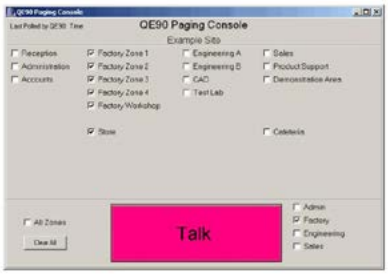
FP0539 Paging Console

One or more VIGILANT 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 Vigilant". 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. Only one microphone is required per paging location 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 (AGC)
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 interface and software allows announcements to be made to up to 480 ECM-based QE90 zones from a single WINDOWS 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 to make a paging announcement. When using the SU0169 microphone it is necessary to use the PTT button on the microphone.

Specifications

Platform	Windows 7, 8, 10
Capacity	Supports 480 ECM-based 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 (PTT) button. It is suitable for plugging into T-GEN 50 and QE90 to provide emergency PA and on-site recording of digitised speech message. Two models are available;

- ME0213 has a DIN plug for use on older QE90 ECP9002.
- ME0290 (illustrated) has a flat plug for use on T-GEN 50 and QE90 ECP9702.

Part Numbers

ME0213	**Microphone c/w DIN plug for QE90 ECP9002**
ME0290	Microphone c/w flat plug for T-GEN 50 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)
Freq. Response	150Hz-12kHz
Part Number	SU0168

SU0169 Desktop Microphone

The SU0169 Desktop Paging microphone is a dynamic microphone with a cardioid polar pattern. It features a short-off press-to-talk (PTT) 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)
Freq. 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

FP0938 WIP Phone

The VIGILANT. FP0938 Warden Intercom Point (WIP) phone is designed specifically for use with sound and intercommunication systems for emergency purposes. WIP phones are used by wardens to communicate between evacuation zones and the intercom control and indication equipment (CIE). When the handset is lifted, a call is automatically initiated to the intercom CIE. The FP0938 has been certified as complying with AS/ACIF S004. It has been tested as a WIP phone for intercommunication systems for emergency purposes complying with AS 2220.1 and installed to AS 1670.4 at both the CIE and the WIP locations.

Specifications

Operating Voltage	6Vdc (@ 9mA) to 15Vdc (@ 22.5mA)
AC Impedance	600 ohms (off hook) 25 - 50 ohms (on hook)
Ring Voltage	6Vac r.m.s.
Ring SPL	82dBA @ 1m (approx)
Screw Terminations	Suit 0.75 to1.5mm^2 wire
Ambient Temp	-10°C to +50°C
Material	Red ABS, impact resistant
Dimensions (mm)	215 x 70 x 70 (HWD)

Part Numbers

FP0938	VIGILANT WIP Phone
PA0689	PCB WIP Flashing Board

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

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

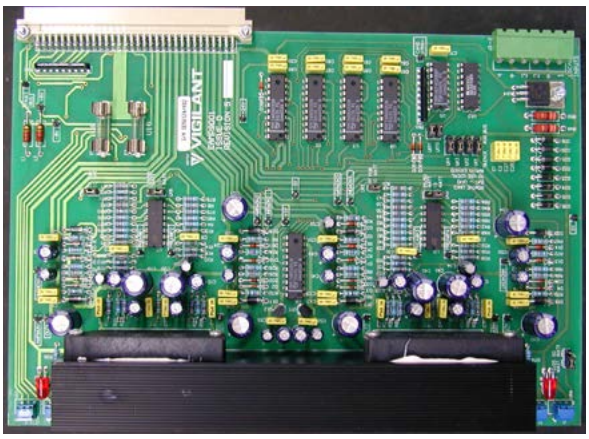
Power Supply[1]	12Vdc, 190mA via 8 x AA batteries or AC adaptor at 500mA (12Vdc, tip positive)
SPL Output	0 dB to 100 dBA (STI-PA test tone)
Ambient Temp	0 to 50°C
Dimensions (HWD)	470 x 360 x 180mm
Weight	520g

Part Numbers

STI-CIS	Analyser & TALKBox Kit

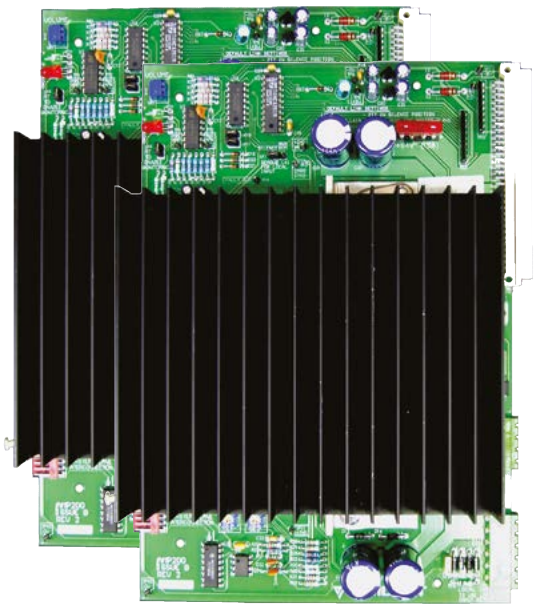
1. 92dB(A) STI-PA tone out

QE90 Spares - Amplifiers



PA0650 EAMP9001
4x10W / 2x25W Zone Power Amp PCB

PA0688 1923-19 Microphone Pre-Amp PCB

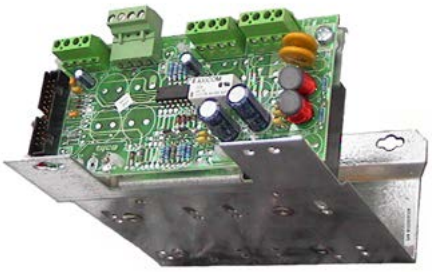


KT0519 200W Amplifier Module Kit
The 200W amplifier comprises two PA0647 AMP200 PCB modules and one LM0141 FRC loom.

PA0690 HAMP9308
2x50W/1x100W Amplifier Module PCB

QE90 Spares - Transformer Modules

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

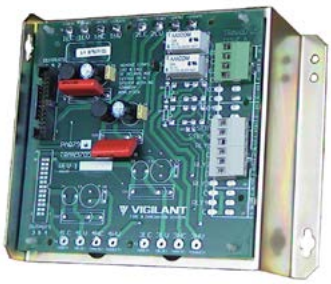


PA0692 HTRN9308-2
1x100W Transformer Module
PA0696 HTMS9408-2
1x100W Transformer Music Switching Module

PA0648 TRAN200
200W Transformer Module

QE90 Spares - Transformer Modules

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



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

PA0795 TRAN9706-1
4x10W Transformer Module without Relays

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

QE90 Spares - Interface Modules

PA0657 SE9004 Signal Interface

PA0481 RZDU/RS232
Interface 1901-100,
includes LM0061

PA0644 VIF0907
VoIP Interface incl. 1x LM0448, 2x LM0552, DIN rail mntg h'ware

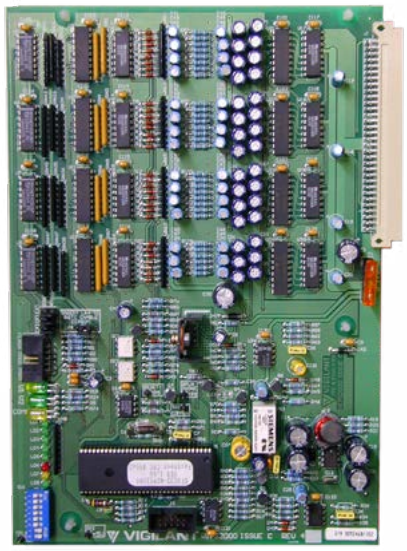
FP1071 SPIF9709
SECP Panel Interface

QE90 Spares List - Major Components

Part No.	Description
FA2027	Keypad Only, ECP+2Z Keyboard,no Name,3 WIP per Zone
FA2029	Keypad Only, 8Z Extender Keyboard,3 WIP per Zone
FP1083	Display Assy 3 WIP per Zone, 8 Zone Extender incl. PCB
ME0207	ECP Assembly 3 WIP per Zone including ECP
ME0381	Assy, ECP + 2Z Keybd, 3WIP/Z Inner Door & Keypad only (>21u)
ME0382	Assy, ECP 8Z Keybd, 3WIP/Z Inner Door & Keypad only (>21u)
PA0623	PCB ECP9702-2 Evac Cntrl, Socket for Site-Specific WIP s/w
PA0642	PCB Assy, WIPS2000 WIP Slave, 0v Ref
PA0643	PCB Assy, ECP9702-2 Evac Cntl Panel 3WIP/Zone
PA0646	PCB Assy, ALIM9706 Audio Line Isolator Module
PA0647	PCB Assy, AMP200 200W Amplifier Module
PA0648	PCB Assy, TRAN200 200W Transformer Module
PA0650	PCB Assy, EAMP9001 4 Zone Power Amp
PA0653	PCB Assy, EMSP8911-2 Disp Kbd 3WIP/Zone - refer FP1083
PA0657	PCB Assy, QE90 SE9004 Signal Interface (DIN Rail)
PA0660	PCB Assy, QE90 BPLN2000 Backplane
PA0690	PCB Assy, QE90 HAMP9308 2x50W Amplifier Module
PA0691	PCB Assy, QE90 HTRM9308-1 2x50W Transformer Module
PA0692	PCB Assy, QE90 HTRM9308-2 1x100W Transformer Module
PA0695	PCB Assy, QE90 HTMS9408-1, 2x50W Xfmr Mod Music Sw

Part No.	Description
PA0758	PCB Assy, QE90,EMUX9601, Multiplexer 16sec Speech
PA0759	PCB Assy, QE90,EMUX9601, Multiplexer 60sec Speech
PA0792	PCB Assy, TRAN9705-2, 4x25W Module c/w Relays
PA0794	PCB Assy, TRAN9705-4, 2x25W Module c/w Relays
PA0795	PCB Assy, TRAN9706-1, 4x10W Module Without Relays
PA0796	PCB Assy, TRAN9706-2, 4x10W Module c/w Relays
PA0916	PCB Assy, QE90 WTRM2000, WIP Termination (DIN)
FP1068	PCB Assy, FIB8910 FIP/BGA Master (DIN Rail)
FP1069	PCB Assy, FIPE9004 FIP/BGA Extender Module (DIN Rail)
FP1070	PCB Assy, QE90 STRM9502 Strobe/relay Module (DIN Rail)
FP1071	PCB Assy, SPIF9709 Secondary Panel Interface (DIN Rail)
FP1072	PCB Assy, QE90 ECM9603 Evac Comms Module (DIN Rail)
FP1073	Assy, WIP Slave + Termination PCBs Upgrade Kit
FP1074	Assy, 100W Amp + HTRAN9308-2 Upgrade Kit
FP1075	Assy, 2x50W Amp + HTRM9308-1 Upgrade Kit
FP1076	Assy, 2x25W Amp + TRAN9705-4 Upgrade Kit
FP1077	Assy, 4x10W Amp + TRAN9705-2 Upgrade Kit
FP1078	Assy, 4x25W Amp + TRAN9705-2 Upgrade Kit
FP1079	Assy, 200W Amp + TRAN200 Upgrade Kit

QE90 Spares

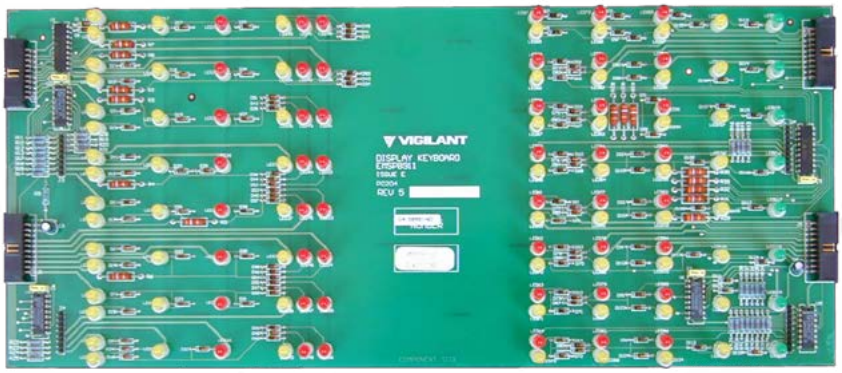


PA0642 WIPS2000
WIP Slave Module 0V Ref Inputs

PA0916 WTRM2000
WIP Termination Module

PA0646 ALIM9706
Audio Line Isolator Module

FP1068 FIB8910 FIP/BGA
Master Module
DD0084 FIP EOL Zener Diode



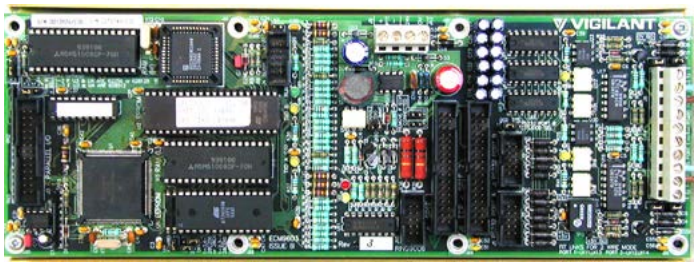
PA0653 EMSP8911-2
3 WIP/Zone Display Keyboard Module
For replacement part use FP1083

FP1069 FIPE9004
FIP/BGA Extender Module

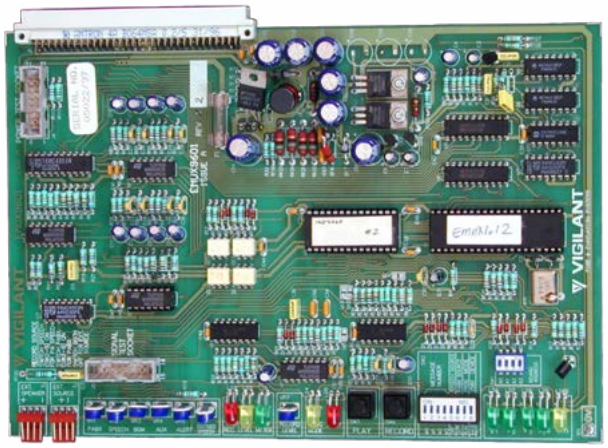
PA0643 ECP9702-1
3 WIP/Zone Control Module

FP1070 STRM9502
Strobe/Relay Module
(WEB) with AS 2220/ISO
8201 Selection

QE90 Spares - Communications



FP1072 ECM9603
Evac Communications Module upgrade kit



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

QE90 Upgrades

The VIGILANT QE90 features forwards and backwards compatibiity such that almost any QE90 manufactured in the last 20+ years can be upgraded, hardware refurbished or software re-configured.

Your local Johnson Controls Fire Detection representative will be able to assist with advice and recommendations, and a comprehensive list of available upgrade kits. Note that panel upgrades usually require a software change; contact your local TFPP representative.

Part Code	Description
FP1067	QE90 4U MODULE BLANK UPGRADE KIT
FP1068	QE90 FIP/BGA MASTER UPGRADE KIT
FP1069	QE90 FIP/BGA EXTENDER UPGRADE KIT
FP1070	QE90 STROBE MASTER UPGRADE KIT
FP1071	QE90 SPIF MODULE UPGRADE KIT
FP1072	QE90 ECM MODULE + LOOMS (NO S/W) UPGRADE KIT
FP1073	QE90 WIP SLAVE + TERM BOARD UPGRADE KIT
FP1074	QE90 100W AMP + TRANSFORMER UPGRADE KIT
FP1075	QE90 2x50W AMP + TRANSFORMER UPGRADE KIT
FP1076	QE90 2x25W AMP + TRANSFORMER UPGRADE KIT
FP1077	QE90 4x10W AMP + TRANSFORMER UPGRADE KIT
FP1078	QE90 4x25W AMP + TRANSFORMER UPGRADE KIT
FP1079	QE90 200W AMP + TRANSFORMER UPGRADE KIT
FP1080	QE90 5 MODULE HINGE UPGRADE KIT
FP1081	QE90 6 MODULE HINGE UPGRADE KIT
FP1082	QE90 7 MODULE HINGE UPGRADE KIT
FP1083	QE90 8Z DISPLAY EXTENDER + LOOMS UPGRADE KIT

FP1135 Isolation Amplifier

The FP1135 T-Gen2 Isolation Amplifier connects to an existing 100V speaker line and reproduces this signal at up to 60W 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, either from an existing supply, or a dedicated mains-powered supply.

To support a full 60W load, a 5A PSU is required, such as the FP0804.

Specifications

Supply Voltage	19.6V to 28.8Vdc
Quiescent Current	170mA[1]
Active Current	3A (60W @ 27Vdc)
Input Signal	100V rms @ 1W max.
Output Voltage	100V rms
Output Power	60W rms[2]
Dimensions (HWD)	295x240x80 mm

Part Numbers

FP1135	Isolation Amplifier
FP0804	24V 5A PSU
FP0766	24V 2A PSU (40W max.)

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

SIM-Mk2 Speaker Isolation Module 100V

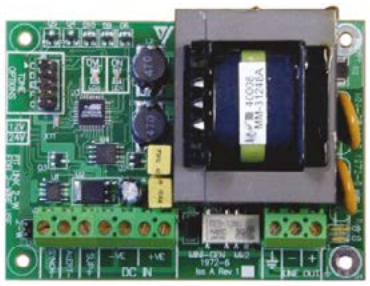
To prevent PA loudspeakers in a secure area from being used as microphones, the Speaker Isolation Module SIM-Mk2 is installed within the secure area between an incoming 100V speaker circuit and the speakers to be secured.

Specifications

Supply Voltage	19.6V to 28Vdc
Quiescent Current	35mA (max.)
Active Current	70mA (max.)
Input Signal	100V rms
Output Voltage	100V rms, 20W (max.)
Power Dissipation	2W (max.)
Secure Area Isolation	>100dB (Typ.120dB)
Operating Temperature	0ºC to +50ºC
Dimensions (HW)	90.5 x 76.5 mm
Part Number	SIM-Mk2-V

Warning System Tone Generators

Mini-Gen Mk2



The Mini-Gen Mk2 is designed to connect directly to 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	
PA1025	12V Mk2
PA1026	24V Mk2

T-Gen2

The T-Gen2 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 60 provides 60 watts rms of alarm tone into a 100 volt speaker line. Different tones can be selected including the AS 2220 Alert and Evacuate signals and the ISO 8201 Evacuate tone. T-Gen 60 provides fault supervision, Public Address facilities and recorded speech message generation. Readily available accessories ensure that installing the T-Gen 60 is quick and easy..

Specifications

T-GEN 2 (19.2 - 28.8V)	
Power Output (@ 27Vdc)	60W (rms) tone
	120W (rms) speech
Warning Signals	AS 2220, ISO 8201
Other Tones	RH3, HeeHaw, Wail
Operating Temp.	-5°C to +45°C
Relative Humidity	0 to 95% (non-cond.)
PCB Dimension (LWH)	125x195x55mm (60W)
	125x195x110mm
	(120W T-Gen120)
Weight	0.65kg/1.5kg

Part Number	Description	FPANZ
FP1115	PCB Assy 60W	VF/424
FP1116	PCB Assy 120W	VF/425
FP1121	T-GEN60 3U rk mt (Gry)	VF/428
FP1122	3U rk mt (Gry) no PCB	
FP1123	3U rk mt (Blk) no PCB	
FP1144	T-Gen2 60W BOWS	VF/429
FP1134	T-Gen2 120W BOWS	VF/430
ME0290	Handheld Microphone	
ME0292	T-GEN 50 box, 003 lock	

FP1121 T-Gen 60 3U Rack Mounting Panel (includes FP1115)
FP1122 3U Rack Mounting Panel incl. Mic. and switch only - no T-Gen 60.

100V Switching Module

FP1117 T-Gen2 Switching Module

Specifications	FP1117	FP1118
Op. Voltage	19.2 - 28.8V)	
Current (Iq)	10mA@24V	15mA@24V
Current (Ia)	43mA@24V	40mA@24V
Pwr @ 27Vdc	60W (rms)	120W (rms)
Warning Sig.	AS 2220, ISO 8201	
Other Tones	RH3, HeeHaw, Wail	
EOL(1br/2br)	56k/100k Ohm	
Operating Temp.	-5°C to +45°C	
Rel. Humidity	0 to 95% (non-cond.)	
Dims (LWH-mm)	142x104x40	
Weight	0.65kg	1.5kg
FPANZ Listed	VF/426	VF/427

100V Splitter Module

FP1118 T-Gen2 Splitter Module

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 of 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

T-Gen2 Emergency Warning System (EWS) - Grade 3

FP1121 3U Grade 3 User Interface with T-Gen60 & mic., shown installed in 15U VIGILANT *MX1*

The VIGILANT T-Gen2 Grade 3 EWS forms part of a Building Occupant Warning System (BOWS) that can be incorporated into fire panels with the T-Gen2 powered from the FIP power supply.

For larger systems the FP1139 PSE can be added to power the T-Gen2 amplifiers.

A 3U User Interface with PA microphone can be supplied to suit the *MX1*.

Additionally the grey 3U User Interface is available with a T-Gen60 mounted on the rear.

A self-contained Grade 3 BOWS containing a T-Gen2, integral power supply and PA microphone can be supplied to connect directly to a fire alarm panel, but can also be used as a stand-alone unit. The BOWS is available in 2 standard configurations:

- 8U with 60W audio output for smaller buildings (exp. to 2x 60W outputs)
- 15U with 120W audio output (exp. with an additional 60W / 120W output)

Both support a number of optional 100V Switching or 100V Splitter Modules to provide multiple protected outputs.

FP1144 8U 60W T-Gen2 Grade 3 BOWS

FP1134 15U 120W T-Gen2 Grade 3 BOWS

Specifications	**FP1144 (8U)**	**FP1134 (15U)**
Weight	17.5kg	26kg
Dimensions (HWD mm)	440x550x210	750x550x210
Supply Voltage	19.2Vmin to 28.8Vmax	
Operating Temperature	-5°C to +45°C	
Relative Humidity	0 to 95% non-condensing	
Storage Temperature	-20°C to +70°C	
Quiescent Current	290mA[1]	
Active Current 27Vdc[5]	3.1A @ 60W	6.1A @ 120W
Line Voltage		
- AC (Tones)	100VAC rms (tones)	
- DC (Supervision)	2.5Vdc (56k ELD 5.0V (O/C)	
Line Power Tones/Audio	60W rms	120W rms
Maximum Line Capacitance	200nF	
ActivFire Listed	afp-3315	
FPANZ Listed	VF/429	VF/430

Notes.
1. Power Save Mode (audio off) 2. Audio idle 3. Isolated, for full power
4. PTT driven, optionally supervised 5. Excludes strobe current

FP1122 3U Grade 3 User Interface incl. mic., no PCB (Gry)
FP1123 3U Grade 3 User Interface incl. mic., no PCB (Blk)

FP1143 High Level Interface module

FP1117 T-Gen2 Switching Module

FP1118 T-Gen2 Splitter Module

The 100V Switching and Splitter Modules provide 4x 100V speaker outputs from one 100V input, with each output separately supervised and isolated if a short circuit fault is detected.

Specifications	**FP1117**	**FP1118**
Operating Voltage	19.2V to 28.8Vdc	
Quiescent Current	10mA @ 24V	15mA @ 24V
Alarm State Current[1]	43mA @ 24V	40mA @ 24V
100V EOL Resistor	56k Ohm (1 branch) 100k Ohm (2 branches)	
100V load/output	100W	
100V load (all 4 outputs)	120W	
Relay Contact Rating	-	1A @ 24Vdc
Fault on 100V in	-	25k Ohm
Ambient Temperature	-5°C to +45°C	
Relative Humidity	10% to 95% (non cond.)	
Dimensions (HWD)	142 x 104 x 40 mm	
Wire Size (maximum)	2.5sq. mm	
ActivFire Listed	afp-3315	afp-3315
FPANZ Listed	VF/426	VF/427
Part Numbers	FP1117	FP1118

1. All 4 outputs in short circuit fault.

Part Numbers

FP1115	T-Gen60 Class D 60W amplifier
FP1116	T-Gen120 Class D 120W amplifier
FP1117	4-Way 100V Switching Module
FP1118	4-Way 100V Splitter Module
FP1119	T-Gen2 60W/120W mounting brkt for PDI bay
FP1120	T-Gen2 Splitter/Switching Module brkt for PDI
FP1121	3U Grade 3 User Interface with T-Gen60, mic.
FP1122	3U Grade 3 UI and microphone (grey)
FP1123	3U Grade 3 UI & mic (black)
FP1130	15U Expansion cabinet, gear plate, 14A PSE
FP1134	15U 120W T-Gen2 Grade 3 BOWS, 14A PSE
FP1135	60W Isolation Amplifier
FP1139	14A 24V PSE gear plate mount
FP1142	14A PSE mounting bracket for PDI bay
FP1143	T-Gen2 High Level Interface module
FP1144	8U 60W T-Gen2 Grade 3 BOWS, 14A PSE
ME0290	Dynamic Microphone with 1m coiled lead
ME0490	ME0290 Dynamic microphone with longer lead
ME0292	T-Gen Empty Box 240W x 295H x 85D

T-Gen2 Emergency Warning System (EWS) - Grade 2

This is a multi-zone EWS where the activation and silencing of the warning signals is controlled by the fire alarm system. This will usually have a phased evacuation and may involve the alert signal as well. The emergency Speech function may also be present. It must be powered separately to the fire alarm panel, but is controlled by it.

A Grade 2 EWS may be used where phased evacuation is required but Warden Intercom Point phones are not used.

The Grade 2 EWS and associated 14A PSE may be housed with the *MX1* FIP in a suitable 28U to 40U cabinet, or supplied as a self-contained EWS in its own cabinet. Up to 20 zones in total can be provided by adding a FP1126/27 8-zone 3U Expansion door fitted with an optional FP1128 8-zone expansion kit.

A self-contained EWS is available in a standard configuration (FP1129) in a 15U cabinet with a 120W audio output and one 100V Switching Module. It can be expanded to support two T-Gen120 amplifiers or up to six Switching Modules for additional zone outputs.

The gear plates of FP1129/FP1130 can support up to 3x T-Gen60 /T-Gen120 units, up to 2x 14A PSE, up to 10x 100V Switching/Splitter Modules and 1 HLI module.

The FP1130 expansion module cabinet must be mounted immediately adjacent to the FP1129 EWS cabinet with the interconnection cabling running directly between them.

FP1129 T-Gen2 120W 15U Grade 2 EWS
FP1130 T-Gen2 15U EWS expansion cabinet (not shown)

FP1128 T-Gen2 8-zone Grade 2 expansion board

FP1126 T-Gen2 3U Grade 2 Zone Extender

FP1124 T-Gen2 3U Grade 2 User Interface incl. Microphone

Specifications	**FP1129 (15U)**
Weight	26kg
Size (HWD)	750 x 550 x 211 mm
Supply Voltage	19.2V to 28.8V
PSU Capacity	14A Peak
Battery Space	2x 40Ah
Operating Temp.	-5°C to +45°C
Relative Humidity	0 to 95% non-cond.
Storage Temp.	-20°C to +70°C
Quiescent Current[1]	300mA
Op. Current@27Vdc[4]	6.2A @ 120W
Line Voltage AC	100V rms
- DC (Supervision)	2.5V (56k ELD 5.0V (O/C)
Line Power	120W
Maximum line cap.	200nF
Audio Performance	
SNR	>75 db(A)
THD	<0.25%
Freq. range +/- 1dB	260Hz – 3800Hz
Freq. range +/- 3dB	215Hz – 8400Hz
100V Speaker Line Supervision ELD	
- 1 Branch	56k 0.4W
- 2 Branches	100k 0.4W
Strobe Output	
- 1 to 3 branch	1x10k - 3x27k 0.4W
Current rating	Max 2.0A
Audio Inputs 1 & 2	250mVrms (min) into 5kOhm[2]
Mic. Input Level	3mV rms to 100mV rms[3]
Digital Input Supervision	2k7 EOL, <3.5V Active
Open Collector Outputs	<1V @ 100mA, 30Vdc
Fault Relay	Change-over, 2A @ 30Vdc
Interfaces	OLED, 4 button menu
Master/Slave	Up to 9 slaves
On-board Storage	4MB (configuration and audio files)
MicroSD Card	32GB max size FAT32 support
Headphone Output (internal)	
Load impedance	8 Ohm min 6mW
Output Level	1.30V_{RMS}
ActivFire Listed	afp-3315

Notes.
1. Audio idle 2. Isolated, for full power 3. PTT driven, monitored
4. Excludes strobe current

Part Numbers

FP1115	T-Gen60 Class D 60W amplifier
FP1116	T-Gen120 Class D 120W amplifier
FP1117	4-Way 100V Switching Module
FP1118	4-Way 100V Splitter Module
FP1119	T-Gen2 60W/120W mounting brkt for PDI bay
FP1120	T-Gen2 Splitter/Switching Module brkt for PDI
FP1124	3U Grade 2 UI and microphone (grey)
FP1125	3U Grade 2 UI & mic (black)
FP1126	3U Grade 2 16-zone UI extender (grey)
FP1127	3U Grade 2 16-zone UI extender (black)
FP1128	8-Zone Expansion board for FP1126/27
FP1129	15U 4-Zone 120W T-Gen2 Grd 2 EWS, 14A PSE
FP1130	15U Expansion cabinet, gear plate, 14A PSE
FP1139	14A 24V PSE gear plate mount
FP1142	14A PSE mounting bracket for PDI bay
FP1143	T-Gen2 High Level Interface module
SU0360	A4488 4-Zone Paging Console
SU0361	A4489 Audio Switcher module (use with SU0360)
ME0290	Dynamic Microphone with 1m coiled lead
ME0490	ME0290 Dynamic microphone with longer lead

Warning System Ancillaries

Visual Devices

SR

SR Wall Strobe, Red

Specifications	
Operating Voltage	24Vdc
Operating Current	210mA max.
Flash Rate	1 Hz
Flash Energy	15 to 115 cd (7 settings)
Ambient Temp	0°C to +49°C
Relative Humidity	10 to 93% n/cond
Dimensions (HWD)	142x119x64 mm
Part Number	SR

SRK

SRK Wall Strobe, Red, Outdoor

Specifications	
Operating Voltage	24Vdc
Operating Current	210mA max.
Flash Rate	1 Hz
Flash Energy	15 to 115 cd (7 settings)
Ambient Temp	-40°C to +66°C
Dimensions (HWD)	145x130x115 mm
Part Number	SRK

SW

SW Wall Strobe, White

Specifications	
Operating Voltage	24Vdc
Operating Current	210mA max.
Flash Rate	1 Hz
Flash Energy	15 to 115 cd (7 settings)
Ambient Temp	0°C to +49°C
Relative Humidity	10 to 93% n/cond
Dimensions (HWD)	142x119x64 mm
Part Number	SW

P2R

P2R 2-Wire, Wall Horn/Strobe, Red

Specifications	
Operating Voltage	24Vdc
Operating Current	229mA max.
Flash Rate	1 Hz
Flash Energy	15 to 115 cd
SPL (@ 24V) *	76 to 84/88 to 93 dBA
Ambient Temp	0°C to +49°C
Relative Humidity	10 to 93% n/cond
Dimensions (HWD)	142x119x64 mm
Part Number	P2R

P2RK

P2RK 2-Wire Wall Horn/Strobe, Red, Outdoor

Specifications	
Operating Voltage	24Vdc
Operating Current	229mA max.
Flash Rate	1 Hz
Flash Energy	15 to 115 cd
SPL (@ 24V) *	76 to 84/88 to 93 dBA
Ambient Temp	-40°C to +66°C
Relative Humidity	10 to 93% n/cond
Dimensions (HWD)	145x130x115 mm
Part Number	P2RK

P4R

P4R 4-Wire Wall Horn/Strobe, Red

Specifications	
Operating Voltage	24Vdc
Operating Current	229mA max.
Flash Rate	1 Hz
Flash Energy	15 to 115 cd
SPL (@ 24V) *	76 to 84/88 to 93 dBA
Ambient Temp	0°C to +49°C
Relative Humidity	10 to 93% n/cond
Dimensions (HWD)	142x119x64 mm
Part Number	P4R

Notes * The tone is selectable between Temporal 3 and Non-Temporal (continuous). The tone volume is selectable between Low, Medium, High. SPL is 76/80/84 dBA Temporal 3 and 83/86/88 dBA Continuous from a 24Vdc supply.

4906-9103 Wall Mount

Multi-Candela Strobe

The 4906-910x Multi-Candela strobes are high output xenon strobes capable of signalling evacuation using the ISO 8201 "T3" temporal pattern, as required by AS1670.4-2004 and AS 1670.1-2004. They produce white light with a link-selectable intensity of 15cd, 30cd, 75cd or 110cd. Control is by either the ISO 8201 Strobe Driver Module (PA1043) or a QE90 STRM Strobe Relay Module (PA0697).

Specifications	
Operating Voltage[1]	16-33Vdc (pulsed)
Average Current[2]	41 to 164mA
Luminous Intensity[3]	15 to 110 cd
Operating Temperature	0°C to +50°C
Relative Humidity	10% to 93% (non-cond.)
Dimensions (LWD)	103x127x70 mm (9103)
	121x75x67 mm (9104)
Housing Colour	White
Strobe Light Colour	White (Clear)
Part Numbers	
4906-9103	Wall Mount
4906-9104	Ceiling Mount

4906-9104 Ceiling Mount

Note: A 24V supply cannot be used directly as the strobes will flash only on power removal.

1. Voltage from PA1043 or PA0697. 2. Current depends on intensity 3. 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 80mm
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 94mm
Weight	230g
Part Numbers	
EA0305	Amber
EA0306	Red

DLE201215A/R

Specifications	
Operating Voltage	24Vdc
Operating Current	600mA
Flash Rate	120 fpm
Lum. 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)	86x86x83mm
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.)
Dims. (HWD)	250x150x80mm
Weight	450g
Part Number	EA0313

1. Ratings at 24Vdc

Where two distinct visible signals are required, the Vigilant 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.

40020B

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.)
Dims. (HWD)	180x130x115mm
Weight	450g
Part Numbers	
40020B	Strobe, Back Box
40020	Strobe only

1. Ratings at 24Vdc, 5.6 Ohm, inrush limiting resistor fitted

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

ESS7111XR

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

The ESS7111XR is a CENELEC approved EEx d IIC T4, IECEX EEx d T5 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. IECEX Certificate SIM 04.0002.

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
Dims. (HWD)	86x86x93 mm
Weight	400g
IECEX Certificate	SIR04.0039X
Part Numbers	
ESS7010ISA	Amber Lens
ESS7010ISR	Red Lens

1. Via suitable galvanic isolator, the outputs of which do not exceed Uo:28Vdc, Io:660mA, Po:1.2W.

The ESS7010ISx is an EExia rated LED warning light. It is rated IECEX EExia IIC T4, IECEX certificate SIR04.0039X. ATEX certificate is ITS02ATEX2006.

Audio Devices

Exd Rated 100V Line Speaker 15W & 20W

The GNEx range of flameproof PA loudspeakers is suitable for Zone 1 and Zone 2 applications. It features enclosures manufactured from GRP (glass reinforced polyester).
The re-entrant flare horn is made from high impact, fire retardant ABS. The speakers have two M20 cable entries, large termination areas containing in & out terminals and an ingress protection of IP66/67. The standard mounting bracket is made from 304 stainless steel and features ratchet adjustment.

Specifications

	GNExL1	GNExL2
Power rating (RMS)	15W	25W
Line Voltage	100V	100V
Line Tappings (W)	15/7.5/3/125/12.5/6/2	
Line Monitoring	2.2µF	2.2µF
SPL @ 1m	113dB (15W)	119dB (25W)
Freq. Response	400 to 8kHz	300 to 8kHz
1kHz Disp. Angle	120°	130°
Cable Entry	Dual M20	
Terminals	0.5 to 4.0mm^2 cable	
Dims (dia. x D mm)	182x282	220 x 332
Weight	3.8kg	4.3kg
Material	GRP & ABS	
Colour	RAL3000 Red	
Temp. Rating	T4 / T5	
Relative Humidity	10 to 95% (non-cond.)	
Ingress Protection	IP66/67	
ATEX Certificate	SIRA 13ATEX1139X	
IECEx Certificate	SIR 13.0029X	
Part Numbers	GNEXL1	GNEXL2

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	C2053

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

This IP66 rated weatherproof horn speaker is ideal for indoor or outdoor use. It features marine grade aluminium mounting bracket and stainless steel fixings, making it ideal for use in marine environments, on board drilling rigs, ships, industrial plants and other areas of harsh environments. The EA0017 will also endure extreme temperature variations. The UV stabilised ABS construction, coupled with the aluminium mounting bracket and stainless steel fixings make it the first choice for use in outdoor & marine applications.

Specifications

Power Rating	30W
Power Taps	3.75,7.5,10,15,30W
Sound Pressure Level	109dB 1W @ 1m
Frequency Response	330Hz to 8kHz
Dispersion Angle	130°
Dimensions (dia x L)	238 x 287 mm
Weight	2.6 kg
Operating Temperature	-20°C to +55°C
Ingress Protection	IP66
Part Number	EA0017

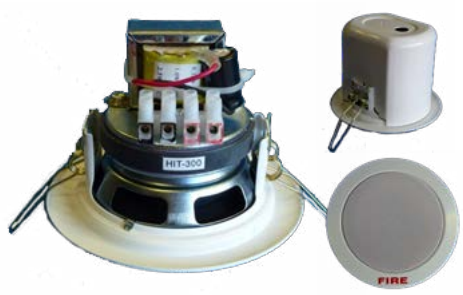
EA0020 8 ohm 10W Horn Speaker

The EA0020 is a high performance 8 ohm horn speaker for use in smaller PA applications requiring a low impedance audio solution.
It is ideal for use as an external sounder for the VIGILANT IP65 AVI Mk2 where increased warning tone volume is required.
The EA0020 should be mounted adjacent to the IP65 AVI Mk2. The cable supplied with the speaker should enter the AVI using the supplied 16mm cable glands and be terminated at the AVI Controller board.

Specifications

Impedance	8 Ohm
Power rating	10W
SPL 1W@1m	104dB
Frequency Response	340Hz to 10kHz
Dispersion Angle	110°
Dimensions (dia. x D)	180 mm x 230 mm
Weight	1kg
Material	ABS
Operating Temp.	-20°C to +55°C
Relative Humidity	10 to 95% (non-cond.)
Ingress Protection	IP65
Part Number	EA0020

SU0346 100V Line 2.5W Fast-Fit Speaker



The SU0346 (HIT-300) is a 75mm fast-fit 100V Line Loudspeaker with a very low profile – only 70mm – which fits in most wall and ceiling cavities. It offers transformer-coupled 0.33W, 1.0W, and 2.5W power taps, plus an integral DC blocking capacitor. Spring-loaded clamps allow installation directly into an 86mm ceiling aperture without needing any other fixings.
It offers clear sound reproduction of both emergency tones and voice messages.

Note: This speaker has no fire resistance rating. This must be provided, where required, by other means.

Specifications

Power Rating	2.5W
Power Taps	0.33, 1.0, 2.5W
Sound Pressure Level	86dB 1W @ 1m typ.
Frequency Response	145Hz to 20kHz
Dimensions (dia x L)	104 x 74 mm (+5 for cover)
Ceiling Cutout	85 to 86mm
Mounted Depth	70mm (incl. ceiling tile)
Weight	450g (580g incl. cover)
Cable Termination	2 sets 2.5mm^2 (2-in,2-out)
Part Numbers	
SU0346	HIT-300 Speaker
SU0353	Back Cover

FP0864 Mini Speaker

Mini Speaker is a compact 100V speaker suitable for use with tone warning systems. It is intended as a more compact, albeit less powerful, alternative to a ceiling mounted cone speaker, primarily for use in residential situations. The mini speaker mounts on an electrical industry standard flush or surface box.
Note: This speaker has no fire resistance rating. This must be provided, where required, by other means.

Specifications

Equivalent Power	1.25W @ 100V line
Sound Pressure Level	82dBA to 90dBA@1m*
Cable Size	4mm^2 (max.)
Dimensions	119x74x41 HWD
Part Number	FP0864

* Adjustable in 4 steps. AS 2220 Evac (AS2220 Alert Tone approximately 10 dBA lower, not rated for waking occupants on Alert tone).

EA0006 - 100V Line Ceiling Recessed Speakers

SRSPR4S (EA0006) Speaker

The EA0006 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.

Note: This speaker has no fire resistance rating. This must be provided, where required, by other means.

Specifications

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°
Dimensions	diameter 100mm
Part Numbers	
SRSPR4S	EA0006 4" Speaker
SRSPRGFA4S	Grille (white "Fire")
EA0102	Grille (white, no label)
EA0104	Screw Covers pkt 80

SRSPRGFA4S Speaker Grille

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.
Note: This speaker has no fire resistance rating. This must be provided, where required, by other means.

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

EA0009 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) with transformer 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 are included.

Specifications

Power Rating	5W
Power Taps	0.33, 0.66, 1.25, 2.5, 5W
Sound Pressure Level	90dB, 1W @ 1m
Frequency Response	100Hz - 15kHz
Dimensions	210 dia x 67H mm
Weight	900g
Part Number	EA0009

100V Line Audio Attenuators

A2260 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 emergency signals at full volume. The override relays can be configured to operate in two modes. The standard mode requires 24Vdc to be applied to the relay coil to enable the volume setting. The fail-safe mode switches the attenuator off when 24Vdc is removed.

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	A2260	A2255	A2339

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	DB3BDGD048N2BNR

* tone dependent

150mm (6") Diameter Motorised Bell

Features - SRALM612
- Low current draw
- Slim profile
- Polarised for use with supervision circuitry

Features - SSM246
- Low cost
- Slim profile (53mm)
- Fully suppressed and polarised
- Quick and easy to install

Specifications	**SRALM612**	**SSM246**
Op. Voltage	12Vdc	24Vdc
Rated Current	30mA	53.5mA
SPL (dBA @ 1m)	95	82
Ambient Temp.	-10°C to +50°C	
Colour	Red	Red
Part Numbers	SRALM612	SSM246

"RH" Sounders

The RH series includes two sounder types - RH3, a 12Vdc device; and RH4, a 24Vdc device. Both sirens are finished in Signal Red to shade No 537 NZS 7702. They feature a mounting bracket adjustable to angle the siren over 90 degrees. The sirens are provided with flying leads 300mm in length.

Specifications	**RH3**	**RH4**
Operating Voltage	12Vdc	24Vdc
Rated Current	250mA	125mA
Sound Character	5Hz sweep, 500Hz - 1400Hz	
SPL (dBA @ 3m)	100	100
Ambient Temp	-10°C to +50°C	
Colour	Red	Red
Dims (Dia x L)	132 x 150 mm typical	
FPANZ Listed	VF/401	VF/402
Part Numbers	FP0416A	FP0469

Audio Visual Indicators (AVI)

FP1037 with **FP0853** AVI MK2 2 LINE RED shown with FA2700 and FA2701 Faceplates respectively

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.
The IP65 model comprises an indoor AVI mounted inside a UV-resistant IP65 enclosure with a transparent lid.
A range of high visibility UV-resistant faceplates is available.

Specifications

	Indoor AVI	IP65 AVI
Op. Voltage	19 to 28Vdc	
Current (@24Vdc)		
Supervision	2µA max.@ 25°C	
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	75dBA@1m
Dims (HWD) (mm)	206x316x85	280x280x132
Op. Temperature	0°C to +50°C	
Rel. Humidity	Up to 95% (non cond.)	
IP Rating	IP30	IP65
Weight (Housing)	2kg	5kg
Weight (faceplate)	0.25kg	0.25kg
Designed to comply with	AS1603.11	
FPANZ Listed	VF/417	

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).

Part Numbers

FP0853	AVI Mk2 2 line red
FP0854	AVI Mk2 3 line yellow
FP1037	IP65 AVI Mk2 2-line red
FP1038	IP65 AVI Mk2 3-line yellow
EA0020	IP65 8 ohm 10W Horn Speaker
KT0292*	Exp Kit: red LED PCB + hardware
KT0293**	Expansion Kit: red double sided
FA2700	Fire Alarm, Evacuate Area, 2-line Red UV-stable
FA2701	Fire Alarm, Do Not Enter, 2-line Red UV-stable
FA2702	Do Not Enter, CO2 Gas Discharged, 3-line Red UV-stable
FA2703	Do Not Enter, FM-200 Gas Discharged, 3-line Red UV-stable
FA2704	Do Not Enter, INERGEN Gas Discharged, 3-line Red UV-stable
FA2710	Warning, Fire Door Closing, 3-line Red UV-stable
FA2776	Extinguishing System Inoperative, 3-line Yellow UV-stable

* 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 (Other faceplate legends available to special order).

FP0854 AVI MK2 3 LINE YELLOW

KT0292 AVI MK2 EXPANSION RED LED PCB & HARDWARE

KT0293 AVI MK2 RED DOUBLE SIDED EXPANSION KIT

FA2700 AVI MK2 FACIA & DIFFUSER,FIRE ALARM,EVACUATE AREA

FA2701 AVI MK2 FACIA & DIFFUSER,FIRE ALARM,DO NOT ENTER

FA2702 AVI MK2 FACIA & DIFFUSER,DO NOT ENTER,C02 DISCHARGED

FA2703 AVI MK2 FACIA & DIFFUSER, DO NOT ENTER, FM-200 GAS DISCHARGED

FA2704 AVI MK2 FACIA & DIFFUSER, DO NOT ENTER, INERGEN GAS DISCHARGED

FA2776 AVI MK2 FACIA & DIFFUSER,EXTINGUISHING SYSTEM INOPERATIVE

FA2710 AVI MK2 FACIA & DIFFUSER, WARNING FIRE DOOR CLOSING

Batteries and Power Supplies

Batteries

Part Number	Voltage (V)	Ah	Dimensions (mm)			Weight (kg)
			Length	Width	Height	
BA12012	12	1.2	97	47.5	55	0.65
BA12070	12	7	150	65	98	2.8
PSH-12100	12	10	151	65	117	3.2
BA12120	12	12	151	98	98	4.7
BA12170	12	17	180	75	168	6.0
BA12240	12	24	175	165	125	9.0
BA12330	12	33	195	130	159	9.9
BA12400	12	40	197	165	170	14.5
BA12650	12	65	350	166	174	24.1
BA12750	12	75	260	169	235	22.6
BA121200	12	120	407	177	225	34

These 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

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 5 Amp in 19" rack mounting (2U) or gear-plate mounting (brick) and 10 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. The power supplies are respectively rated for 5A and 10A continuous, with 6A and 12A peak loads for a short duration respectively.

ME0333 - 24Vdc 10A (QE90-PSU2412)
(Pictured above, supplied with 2 circuit breakers, and 2 blanked circuit breaker positions)
ME0331 - 24Vdc 5A (QE90)
(supplied with 1 switch and 1 circuit breaker, no blank positions)

ME0330 - 24Vdc 5A Brick (QE90)
(Suitable as general purpose PSU)
ME0334 - 24Vdc 5A Brick (MX4428)

ME0340 - 24Vdc 5A (MX4428)
ME0343 - 24Vdc 10A (MX4428-PSU2412F)

Specifications	**2406**	**2412**
Output	24Vdc 5A	24Vdc 10A
19" Rack Type		
Dims. (mm HWD)	89x483x123	89x483x185
Weight	6kg	7.5kg
Brick Type		
Dims (HWD) (mm)	96x262x158	
Weight	5kg	
FPANZ Listed	VF/648	
Part Numbers		
19" Rack Type		
QE90	ME0331	ME0333
MX4428	ME0340	ME0343
Brick type		
QE90	ME0330	
MX4428	ME0334	
Accessories		
50A Circuit Breaker (replacement)	SW0142	
Circuit Breaker Kit (additional)	KT0546	

FP0521 DBA PSU 12Vdc 2A

The VIGILANT 1926 DBA Power Supply is mainly intended for powering 2-wire SGD installations in DBAs but may also be used to power any fire alarm system or load where supervised 12 volt power is required. It is based on FP0765 but additioinally includes a defect (battery monitor) circuit with relay contact output which is usually wired in series with the defect input of one of the SGDs it powers.

Specifications	
Output	12Vdc 2A
Input	230Vac 50Hz
Battery Capacity	7Ah (BA12070)
Dimensions (HWD)	295x240x80mm
FPANZ Listed	VF/629
Part Number	FP0521

FP0576 Empty Battery Box

This battery box provides 8U of 19" rack capacity and has a similar finish to the range of standard Vigilant 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. 24 volt battery capacity is 80Ah using 2 x PS-12800 batteries (not stocked) or up to 120Ah using 6x 40Ah batteries (BA12400).

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

FP0765 PSU1948 12Vdc 2A Power Supply

Series 1948 Power Supplies are designed specifically for use in fire alarm systems. They provide a compact, self-contained 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	12Vdc 2A
Input	230Vac 50Hz
Battery Capacity	6.5 Ah (BA12070)
Dimensions (HWD)	295x240x80mm
ActivFire Listed	afp-1341
FPANZ Listed	VF/629
Part Number	FP0765

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 (2x BA12070)
Dimensions (HWD)	295x240x80mm
ActivFire Listed	afp-1341
FPANZ Listed	VF/629
Part Number	FP0766

MX4428 24Vdc 5A Power Supply

The 5A ME0476 Power Supply is a direct replacement for older 2.5A FP0874/FP0825 supplies. The ME0476 is used in MX4428 panels (or F4000 upgraded to V3.10+ software). It features a 3 pin GPO, replacing the metal mains cover & panel mount mains switch.

Specifications

Output	24Vdc 5A
Input	230Vac 50Hz
ActivFire Listed	afp-1341
FPANZ Listed	VF/648
Part Number	ME0476

FP0804 24Vdc 5A MX4428 Power Supply

FP0804 comprises a power supply for MX4428 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.

Specifications

Output	24Vdc 5A
Input	230Vac 50Hz
Battery Capacity	40Ah
Dimensions (HWD)	440x550x211mm
Cabinet	1.6mm mild steel, powder coat cream wrinkle
Ingress Protection	IP51
FPANZ Listed	VF/648
Part Number	FP0804

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
ActivFire Listed	afp-1341
FPANZ Listed	VF/629
Part Number	FP0852

Aspirating Smoke Detectors - VESDA

VESDA LaserFOCUS

Designed to protect spaces of less than 250 m^2, the VESDA LaserFOCUS VLF-250 is the cost-effective solution for areas such as: Local Telecommunication Exchanges, Air Handling Units / Cabinets, Smaller Server Rooms, Control Rooms / Switch Rooms, Railway Signal Hubs, Storage Facilities, Hazardous Areas (Class 1 Div 2).

The VESDA LaserFOCUS VLF-500 is designed to protect areas less than 500m^2. 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.

Specifications

Operating Voltage	18 to 30Vdc
Operating Current	220mA
Alarm Current	295mA
Operating Temperature	0°C to +40°C
Relative Humidity	5 to 95% (non-cond.)
Ingress Protection	IP30
Dimensions (HWD)	185x255x90mm
Weight	1.9 kg

Part Numbers

VIC-010	VESDANet for VLF-500
VIC-020	Relay Card for VLF-500
VLF-250-02	VLF-250 Relays only
VLF-500-02	VLF-500 Detector

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 three versions of interface: relays only (RO), relays and VESDAnet , Vigilant *MX*.

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

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.)
Ingress Protection	IP30
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 (RO)	Relays Only Version
VLC-500D	Duct detector
VLC-505D	Duct detector
VESDAnet	
VLC-505ETN	VN - Equivalent-to-New
VLC-800MX	Vigilant*MX* Addressable
VSP-510	Termination Bd (RO)
VSP-515	Termination Bd (VN)

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-002 LaserPLUS Detector and display

VLP-400 LaserPLUS Detector with fire OK LED

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

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
Dimensions (HWD)	130x105x30 mm
In Remote Mounting Box (as shown below)	
Operating Current	90mA
Alarm Current	110mA @ 24Vdc
Dimensions (HWD)	150x140x85 mm
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

LaserINDUSTRIAL Displays
VRT-Q00 Remote display including 7 relays
VRT-T00 Remote detector display- no relays

VRT-300 Remote VESDAnet socket

VESDA VLI by Xtralis

The VESDA VLI is an industry first early warning aspirating smoke detection (ASD) system, designed to protect industrial applications and harsh environments of up to 2000m^2. With up to 4 inlet pipes and a total pipe length of up to 360m, the IP54 rated VLI detector combines a fail-safe Intelligent Filter (patent pending) with an advanced clean-air barrier for optics protection allowing the use of absolute detection and a long detection chamber life without the need for recalibration. The Intelligent Filter effectively reduces the level of pollution in the air sample before it enters the detection chamber, which dramatically extends the operational life of the detector in harsh and polluted environments. It is fully monitored, therefore providing consistent sensitivity over the entire operational life of the detector.

Specifications

Operating Voltage	18 to 30Vdc
Operating Current	415mA
Alarm Current	440mA
Relay Outputs	5, rated 2A @ 30Vdc
Operating Temp	0°C to +39°C
Relative Humidity	10 to 95% (non-cond.)
Ingress Protection	IP54
Dimensions (HWD)	317x427x180mm
Weight	6 kg
ActivFire Listed	afp-2765

Part Numbers

VLI-880	VESDA VLI
VLI-885	VLI with VESDANet
VRT-Q00	Remote Display 7 Rly.
VRT-T00	Remote Display No Rly.
Spares	
VSP-030	VLI Intelligent Filter
VSP-031	VLI-Sec'dry Foam Filter
VSP-032	VLI Aspirator
VSP-033	VLI Chamber Assembly
VSP-034	VLI-VESDANet Board

VESDA ECO Gas Detection

VESDA ECO installed on sampling pipe

VESDA ECO component parts - (L-R) Housing, Sensor Cartridge, Detector

Gas Range and Specifications

VESDA ECO can provide detection of the following gases:-

- Carbon Monoxide (CO) 0-500ppm
- Oxygen (O_2) 0-25% V
- Hydrogen Sulphide (H_2S) 0-100ppm
- Nitrogen Dioxide (NO_2) 0-10ppm
- Propane (C_3H_8) 0-100% LEL
- Ammonia (NH_3) 0-100ppm
- Hydrogen (H_2) 0-100% LEL
- Sulphur Dioxide (SO_2) 0-100% LEL
- Methane (CH_4) 0-100% LEL

Specifications

Operating Voltage	18 to 30Vdc
Operating Current	135mA
Operating Temperature	-20°C to +55°C
Relative Humidity	10 to 90% (non-cond.)
Sampling Pipes	25mm Dia,
Outputs	RS485 MODBUS RTU 4 Relays 1A/30Vdc One 4-20mA
On-Board Memory	Mini SD card 2GB
Ingress Protection	IP65
Dimensions (HWD)	125x34x110mm
Weight	250g
Approvals (pending)	ETL listed to UL 61010-1 ETL listed to CAN/CSA C22.2 No. 61010-1 EN 61010-1

Part Numbers

ECO-D-B-AA	VESDA ECO detector with single gas sensor cartridge for gas AA
ECO-SC-AA	Single gas sensor cartridge

The release of toxic gases, oxygen deficiency, or the presence of combustible gases and vapours can present an invisible yet potentially fatal hazard. When detected at an early stage, countermeasures can be initiated to protect personnel and property. In many facilities, unseen dangers exist from gases and other hazardous substances that can cause enormous damage and loss of life. Combined with the VESDA aspirating smoke detection system, VESDA ECO can provide cost-effective gas detection and environmental monitoring in numerous applications and environments.

LaserPLUS Standard 19 Inch Sub-Rack Remote Display Assemblies

Part Number Examples

VSR-0002	19" Sub-rack with 3 blanks,1 LaserPLUS display
VSR-0021	19" Sub-rack, 2 blanks,1 LaserPLUS display, 1 programmer
VSR-004A	19" Sub-rack, 2 blanks, 1 SCANNER display, 1 Programmer
VSR-300J	19" Sub-rack, 1 VESDANet socket, 2 blanks, 1 COMPACT display

Specifications
Dimensions: 128 x 482 x 120 mm (HWD)

The 19" sub-rack is available as a mounting option, with 4 mounting slots for display or programming modules.
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 disp. sub-unit + 7 relays
VSR-5	Blank sub-unit with 7 relays
VSR-6	Plus display with RTC , 0 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 disp. sub-unit + 7 relays
VSR-K	Compact display + RTC-no relays
VSR-S	System Relay Module
VSR-V	Focus display RTC7
VSR-W	Focus display RTC0
VSR-Q	Industrial display +7 Relays
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. Johnson Controls Fire Detection also stocks pipe and sampling points.

Part Numbers

VHH-100	Hand held programmer & leads
E700-SPLR	Sampling point label
E700-SPDCL	Aspirating pipe label
VSP-511	DB15M - DB15F VESDANet RS485
VSW-004	VConfig Basic software
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 VSM4. 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).

Part Numbers

VHX-0200	PC link HLI plus leads (MK2)
VHX-0310	HLI - Open Protocol
VHX-0400	Simplex HLI
VSP-509	DB9M - DB9F Prog. RS232 2m
18265	DB15M - DB15F VESDANet RS485

VESDA Spares

The following common VESDA LaserPLUS spares are kept in stock by Johnson Controls Fire Detection. Other spares can be supplied as required.

Part Numbers

E700-FILFOAM	FILASSY Filter elements
E700-FMK-2	Filter for VESDA Mk2
VLC-500ETN	Compact RO (Equiv-To-New)
VLC505-ETN	Compact RO (Equiv-To-New)
VLC-505ETN	Compact VN (Equiv-To-New)
VLF-250-02ETN	Focus 250-02 (Equiv-To-New)
VLP-000ETN	Plus 3 blanks (Equiv-To-New)
VSP-001	Programmer (spare)
VSP-002	Display (spare)
VSP-004	Scanner display (spare)
VSP-005	Filter cartridge (spare)
VSP-006	Plus chassis & manifold
VSP-006ETN	Plus chassis (Equiv-To-New)
VSP-008	Remote term. card 7 relays
VSP-009	Scanner chassis & manifold
VSP-009ETN	Scanner Chassis (Equiv -To-New)
VSP-019	Filter cover door (spare)
VSP-014	Spare Head term. card 7 relays
VSP-015	Spare aspirator fan
VSP-018	Filter Switch Assy for VLP/VLS
VSP-025	VSP-005 Filter Assy - pack of 20
VSP-715	VLF-500 2-Fan Module
VSP-850-G	Inline Filter
VSP-855-20	Inline Filter Elements - pk of 20

E700-FILASSY Inline Pre Filter to suit all VESDA detectors. Includes **E700-FILFOAM** Filters

E700-FMK-2 Filter for VESDA Mk2 System

VSP-850-G Inline Filter for any VESDA System

VSP-005 Filter Cartridge (suits VLF, VLC, VLP, VLS)

VESDA-E VEU Ultra-wide Sensitivity Aspirating Smoke Detector

The VEU series of aspirating smoke detectors are the premium detector of the VESDA-E range. An Ultra-wide sensitivity range; 15 times greater than VESDA VLP, and provision for more sampling holes provide an increased coverage in high airflow applications by at least 40%. Considerably longer linear pipe runs and extended branched pipe network configurations cater perfectly to applications with higher ceilings providing an increased coverage by up to 80% whilst allowing convenient detector mounting for ease of service and maintenance. A range of revolutionary new features provide unsurpassed detection performance, flexibility, field programmability, connectivity and reduced total cost of ownership.

Flair Detection Technology

Flair is the revolutionary new detection chamber that forms the core of VESDA-E VEU, providing better detection, fewer nuisance alarms, higher stability, increased longevity and particle characterisation. Direct imaging of the sampled particles using a CMOS imager combined with multiple photo-diodes provides vastly more data that can be used to derive actionable information about the observed particles using analytics.

Ethernet and WiFi Connectivity

VESDA-E detectors offer Ethernet and WiFi connectivity as standard features. The detector can be added to a corporate network, allowing WiFi enabled tablet devices and laptops installed with Xtralis configuration software to connect wirelessly to the detector via the network.

Backward Compatibility

VESDA-E VEU is fully compatible with existing VESDA installations. The detector occupies the same mounting footprint, pipe, conduit and electrical connector positioning as VESDA VLP. VEU is also compatible with existing VESDAnet installations allowing monitoring of both VESDA-E and legacy detectors via the latest iVESDA application.

Features

- Flair detection technology delivers reliable very early warning in a wide range of environments with minimal nuisance alarms
- Multi stage filtration and optical protection with clean air barriers ensures lifetime detection performance
- Four alarm levels and an ultra wide sensitivity range deliver optimum protection for the widest range of applications
- Intuitive LCD icon display provides instant status information for immediate response
- Extensive event log (20,000 events) for event analysis and system diagnostics
- Fully backward compatible with VLP and VESDAnet
- Ethernet for connectivity with Xtralis software for configuration, secondary monitoring and maintenance

Specifications

Operating Voltage	18 to 30Vdc
Operating Current	290 to 660mA
Operating Temp.	0°C to +39°C
Relative Humidity	10 to 90% (non-cond.)
Sampling Pipes	25mm Dia,
Sample Air Temp.	-20°C to +60°C
Output	7 Relays, 2A/30Vdc (Resistive)
Ingress Protection	IP40
Dimensions (HWD)	225x350x135mm
Weight	4.9kg
Coverage Area	6,500m^2
Pipe Length (Total)	800m (max.)
ActivFire Listed	afp-2953

Part Numbers

VEU-A00	VESDA-E VEU c/w LEDs
VEU-A10	VESDA-E VEU with 3.5" Display
VSP-960	Mounting Bracket

VESDA Pipe and Fittings

E700-CSC Capillary Sampling Connector

E700-PC Pipe Clip - Single Point Fix

E700-SP Sampling Point - Mini

E700-SPLR Sampling Point Label (1 label)

E700-SPDCL Sampling Point Decal (200 per roll)

E700-HASP Heat Activated Sampling Point

E700-SRB Standard Base for HASP with CSC

E700-CT Capillary Sampling Tube 8mm OD

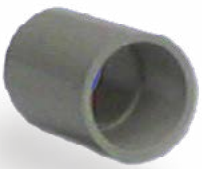
E700-LB Long Radius Bend 150mm

E700-SB Small Radius Bend 90mm

E700-P VESDA Pipe 4 metre x 10 Lengths (bell end) - 100% UPVC

E700 HASP Kit Heat Activated Sampling Point requires E700-TA, E700-SRB, E700-CSC and E700-HASP.

E700-EC End Cap - Not Drilled



E700-PJ Pipe Junction Fitting

E700-TA Trunk Adaptor

E700-T Solid Tee

E700-J 2 Branch Adaptor

E700-Y Y- Branch Adapator

FV400 FLAMEVision Triple IR Solar Blind Flame Detector (Flameproof)

FLAMEVision FV400 uses Triple IR Solar Blind technology for flame detection. This provides a reliable and cost effective solution in standard flame detection applications especially where there is a single hazard in the field of view. The FV400 FLAMEVision Triple IR Solar Blind sensing technology and flame detection algorithms provide high performance sensing capabilities for hydrocarbon fires. This includes the ability to reliably sense flames through high densities of solvent vapours and black smoke, increasing the probability of early detection with consistent high sensitivity to flame throughout the whole field of view. They also ensure consistent detection of many different types of hydrocarbon fuels from alcohol to aviation fuel. Multiple interfaces are provided.

The FLAMEVision FV400 detectors are intended for applications demanding a high level of protection and where a rapid response to fire is important. Typical applications are:

- Refineries
- Drilling and Production Plants
- Fuel loading facilities
- Compressor Stations
- Chemical production
- LNG/LPG processing & storage
- Gas Turbines
- Waste management/transfer
- Aircraft Hangars
- Sports Stadia
- Tank Farms
- Printing Industry
- Warehousing
- Munitions Storage

Specifications

Supply voltage:	15 to 30 Vdc
Current (@24Vdc):	12 mA quiescent 22 mA Alarm (interface dependant)
Window Heater:	245mA @ 24 V
FPANZ LIsted	VF/364 (FV411f) VF/365 (FV412f) VF/366 (FV413f)

External supply required only for heater or MODBUS options

Part Numbers

516.300.411	FV411f Flameproof, no camera
516.300.412	FV412f Flameproof, PAL Camera
517.300.001	MB300 Mounting Bracket
517.300.002	WH300 S/S Weather Hood
517.300.003	ADP300 Adaptor, FV411 to S200 Mnt
517.300.021	WT300 Walk Test Tool
517.300.024	CTI400 Off-line Configuration Tool
517.300.006	MK300 Field Spares Kit

Benefits

- Heated optics ensures no sensitivity-reducing moisture build-up on the lens
- Range of integral field interface options including a 4–20mA output, configurable as Sink or Source
- Automatic monitoring of detector functionality including signal transmission through the window. In addition, in most configurations the WT300 test tool can be used to simplify servicing
- Over 50m detection range with unrestricted 90° field of view
- Internal event log to help operators review post-incident data

Features

- Triple waveband infrared solar-blind flame detection for optimum false alarm immunity
- Unrivalled black body rejection
- Automatic Optical Integrity Monitoring
- 4 Range settings: <6m, 15m, 33m & 65m ($0.1m^2$ n-heptane fire on-axis)
- Configurable via DIP switch or PC software
- Able to see flames through smoke and through high densities of solvent vapours, thus increasing the probability of early detection of hydrocarbon fires
- Insensitive to artificial light sources
- Consistent high-sensitivity flame detection throughout a 90° field of view
- Consistent detection of different types of hydrocarbon fuels
- Integral flame simulation for verification of detection path enabling either easy walk-testing of the installation or testing by remote control to ensure continued reliability of the detector operation

Intrinsically Safe Detectors

Features

- Collective and addressable I.S. systems
- Suitable for worst case (EEx ia IIC T5)
- Vigilant 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 Johnson Controls 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. Johnson Controls 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.)
Dimensions	109 dia x 43 H mm
Weight	128g
ATEX Certificate	BAS01ATEX11134X.
IECEX Certificate	BAS 07.0056X
Part Number	516.054.011.Y

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.)
Dimensions	109 dia x 43 H mm
Weight	126g
ATEX Certificate	BAS01ATEX1134X
IECEX Certificate	BAS 07.0056X
Part Number	516.061.001

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.)
Dimensions	109 dia x 43 H mm
Weight	116g
ATEX Certificate	BAS01ATEX1134X
IECEX Certificate	BAS 07.0056X
Part Numbers	
516.052.051	MD601EX ROR Heat Detector
516.052.041	MD611EX Fixed Temp Heat Detector

MCP220Ex Intrinsically Safe Manual Call Point

The MCP220Ex Intrinsically Safe Waterproof Break Glass Manual Call Point is designed to monitor and signal the condition of the switch contact associated with the call point.
The callpoint is designed to comply with EN 50 014 and EN 50 020 for intrinsically safe apparatus. It is certified:

IECEX Certificate	IECEX SIR 08.0105X
ATEX Certificate	SIRA 06ATEX2131X
Cenelec Classification	EEx ia IIC T4 Ga

The MCP220Ex is not certified to NZS4512.

Specifications

Operating Voltage	18 to 30Vdc
Alarm Current	500mA (max.)
Operating Tempearture	-30°C to +70°C
Relative Humidity	10% to 95% (non-cond.)
Dimensions (HWD)	93x 98 x 63 mm
Weight	270g
Ingress Protection	IP67
ATEX Certificate	SIRA 06ATEX2131X
IECEX Certificate	IECEX SIR 08.0105X
Part Number	514.001.109

601FEx Infrared Flame Detector

The 601FEx point type flame detectors are part of the 600 series of non-addressable detectors. The 601FEx is a full featured 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]
Dimensions	108 dia x 22 H mm
Weight	110g
Range	0.1m² n-heptane @ 20m 0.4m² n-heptane @ 50m
Field of View	100°
ATEX Certificate	BASEEFA03ATEX0422X
ATEX Code	Ex II 1 G
Cenelec Code	EEx ia IIC T5
IECEX Certificate	BAS 07.0075X

Part Numbers

516.600.066	601FEx Detector
592.001.012	T110 Test Source
592.001.018	Test Source Adaptor

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

5BEx Detector Base

The 5BEx detector base is classed as a simple apparatus, the detectors are certified:
ATEX Ex II 1 G, certificate number BAS10ATEX1134X
IECEX Ex ia IIC T5, certificate number BAS07.0063X.

Specifications

Dimensions	126 dia x 24H mm
Weight	64g

Part Numbers

517.050.023	5BEx Base for Intrinsically Safe Detectors

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

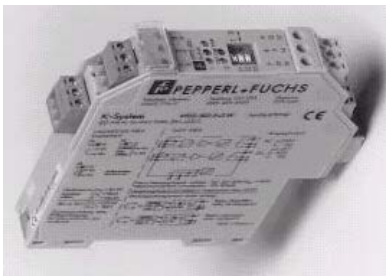
PA0838	ZAU401 Zone Adaptor Unit

Intrinsically Safe Barriers

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

Galvanic Barriers

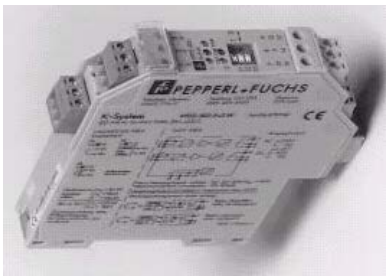
KFD0-Ex151



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%
FPANZ Listed	VF/660

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%
FPANZ Listed	VF/660

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

Intrinsically Safe - *MX* Analogue Addressable

801PHEx Smoke and Heat Detector

The 801PHEx Intrinsically Safe Optical Smoke & Heat Detector plugs into a 5BEx base. The detector is designed to transmit to a remote *MX* fire controller, digital signals which represent the status of the optical smoke and heat elements of the detector. Software within the controller interprets the returned optical and heat values to raise an alarm or other appropriate response according to the type of programmed configuration. The mode of detector may be:

- Optical smoke only detector (sensitivity High, Normal or Low)
- HPO smoke detector (sensitivity High, Normal or Low)
- Heat only rate-of-rise (A1R) detector (no sensitivity selection)
- Heat fixed temperature 60°C (A2S) (no sensitivity selection)
- Optical (sensitivity High, Normal or Low) combined with heat fixed temperature 60°C (A2S)
- HPO (sensitivity High, Normal or Low) combined with heat fixed temperature 60°C (A2S)

These detectors are designed to comply with EN 50 014 and EN 50 020 for intrinsically safe apparatus. They are certified:

ATEX Classification: Ex II 1G
Cenelec Classification: EEx ia IIC T5
IECEx Classification Ex ia IIC T5

Specifications

Operating Voltage	18 to 24Vdc
Queiscent Current	400µA (max.)
Alarm Current	3.5mA (max.)
Operating Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non-cond.)
FPANZ Listed	VF/351
IECEX Certificate	IECEx BAS 07.0063X
Part Number	516.800.530

801CHEx Carbon Monoxide and Heat Detector

The 801CHEx Intrinsically Safe Carbon Monoxide plus Heat Detector forms part of the 800Ex Intrinsically Safe Series of *MX* Addressable Fire Detectors. The detector plugs into a 5BEx base. The detector is designed to transmit to a remote *MX* fire controller, digital signals which represent the status of the carbon monoxide and heat elements of the detector. Software within the controller is used to interpret the returned Carbon Monoxide and heat values to raise an alarm or other appropriate response according to the programmed configuration. The mode of detector may be:

- Heat only detector (A1R or A2S) (sensitivity: High, Normal or Low)
- Compensated Carbon Monoxide detector (sensitivity: High, Normal or Low)
- Compensated Carbon Monoxide detector (sensitivity: High or Normal) combined with heat (A1R)

These detectors are designed to comply with EN 50 014 and EN 50 020 for intrinsically safe apparatus. They are certified:

ATEX Classification: Ex II 1G
Cenelec Classification: EEx ia IIC T5
IECEx Classification Ex ia IIC T5

Specifications

Operating Voltage	18 to 24Vdc
Queiscent Current	400µA (max.)
Alarm Current	3.5mA (max.)
Operating Temp.	0°C to +50°C
Relative Humidity	15% to 90% (non-cond.)
FPANZ Listed	VF/352
IECEX Certificate	IECEx BAS 07.0063X
Part Number	516.800.531

801HEx Heat Detector

The 801HEx Intrinsically Safe Heat Detector forms part of the 800Ex Intrinsically Safe Series of *MX* Addressable Fire Detectors. The detector plugs into a 5BEx base. The detector is designed to transmit to a remote *MX* fire controller, digital signals which represent the status of the heat element of the detector. Software within the controller is used to interpret the returned heat values to raise an alarm or other appropriate response according to the programmed configuration.
The mode of detector may be:

- EN54-5 A1R, rate-of-rise normal ambient
- EN54-5 A2S, fixed 60°C
- EN54-5 CR, rate-of-rise high ambient

These detectors are designed to comply with EN 50 014 and EN 50 020 for intrinsically safe apparatus. They are certified:

ATEX Classification: Ex II 1G
Cenelec Classification: EEx ia IIC T5
IECEx Classification Ex ia IIC T5

Specifications

Operating Voltage	18 to 24Vdc
Queiscent Current	400µA (max.)
Alarm Current	3.5mA (max.)
Operating Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non-cond.)
FPANZ Listed	VF/216
IECEX Certificate	IECEx BAS 07.0063X
Part Number	516.800.532

801FEx Flame Detector

The 801FEx Intrinsically Safe Flame Detector forms part of the 800Ex Intrinsically Safe Series of MX Addressable Fire Detectors. The detector plugs into a 5BEx base. The detector is designed to transmit to a remote MX fire controller, digital signals which represent the infrared radiation produced by flaming fires involving carbonaceous materials. The 801FEx is a full featured flame detector for indoor applications. It must be connected via an EXI800 interface and galvanic barrier.

These detectors are designed to comply with EN/IEC 60079-0:2006, EN/IEC 60079-11:2007 and EN/IEC 61241-11:2006 for intrinsically safe apparatus. They are certified:

ATEX Classification	Ex II 1 GD
IECEX Classification	Ex ia IIC T4

Specifications

Operating Voltage	18 to 24Vdc
Queiscent Current	350µA (max.)
Alarm Current	3.3mA (max.)
Operating Temp.	-25°C to +70°C
Relative Humidity	10% to 90% (non-cond.)
FPANZ Listed	VF/355
ATEX Certificate	Baseefa03ATEX0422X
IECEX Certificate	IECExBAS07.0075X
Part Numbers	
516.800.066	801FEx (Aus)
801FEx	801FEx (NZ)
592.001.012	T110 Test Source
592.001.018	Test Source Adaptor

CP840Ex Manual Call Point

The CP840Ex Intrinsically Safe Waterproof Break Glass Manual Call Point is designed to monitor and signal the condition of the switch contact associated with the call point.

The callpoint is designed to comply with EN 50 014 and EN 50 020 for intrinsically safe apparatus. It is certified:

IECEX Classification	Ex ia IIC T5
ATEX Classification	Ex II 1 G
Cenelec Classification	EEx ia IIC T5

The CP840Ex is not certified to NZS4512.

Specifications

Operating Voltage	18 to 24Vdc
Queiscent Current	300µA (max.)
Alarm Current	5mA (max.)
Operating Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non-cond.)
Dimensions (HWD)	124 x 124 x 59 mm
Ingress Protection	IP67
ATEX Certificate	BAS01ATEX1394X
IECEX Certificate	BAS 07.0063X
Part Number	514.800.513

EXI800 Interface Module and Galvanic Isolator

The EXI800 Interface Module, used with a galvanic isolator, provides a path for an *MX* Panel to transparently communicate to slave devices (800Ex Detectors, IF800Ex Interface Module or CP840Ex Addressable Break Glass Callpoint) connected to the Intrinsically Safe loop. The interface reduces the standard *MX* loop supply voltage and signalling currents to levels that are acceptable for hazardous areas. The EXI800 can detect a short circuit on the left-loop, the right-loop, or the IS loop and will isolate the offending loop connections from the other loop connections. The IS loop output of the EXI800 interfaces with the Pepperl+Fuchs KFD0-CS-Ex1.54 Galvanic Isolator, supplying loop voltage and signalling currents to the Intrinsically Safe loop. The Galvanic Isolator has IECEX approval.

Specifications

DC Input Voltage	20 to 37.5Vdc
DC Output Voltage	28.0Vdc
AC Input Signal Voltage	1 to 4Vpp
AC O/P Signal Voltage	1 to 4Vpp
AC Input Signal Current	40mA (max.)
AC O/P Signal Current	40mA (max.)
Operating Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non-cond.)
Dimensions (HWD)	115 x 103 x 20 mm
Ingress Protection	IP20
FPANZ Listed	VF/658 (EXI800) VF/660 (Isolator)
IECEX Certificate	IECEx BAS 08.0079
Part Numbers	
EXI800	514.001.063
Galvanic Isolator	517.001.259

IF800Ex Interface Module

The Intrinsically Safe IF800Ex Interface Module is designed to monitor fire contacts such as extinguishing system controls, ventilation controls, fire door controls etc. The IF800Ex is contained within a grey compression moulded glass filled polyester box with 3x20mm cable gland holes. The electronic components and PCB are built into a potted module formed from a plastic moulding. Connectivity is via two terminal blocks fitted to the PCB. The interface module is designed to comply with EN 50 014 and EN 50 020 for intrinsically safe apparatus. It is certified:

ATEX Classification	Ex II 1 G
Cenelec Classification	EEx ia IIC T5
IECEx Classification	Ex ia IIC T5

Specifications

Operating Voltage	18 to 24Vdc
Queiscent Current	325µA (max.)
Alarm Current	3.5mA (max.)
Operating Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non-cond.)
Dimensions (HWD)	120 x 122 x 95 mm
Ingress Protection	IP65
FPANZ Listed	VF/659
IECEX Certificate	IECEx BAS 07.0063X
Part Number	514.001.062

Beam Smoke and Linear Heat Detectors

OSID Smoke Detector

Open area Smoke Imaging Detection (OSID) is designed for large, open spaces - airports, train stations, stadiums and shopping centres, etc. applications that pose unique challenges to reliable fire detection. By using UV and IR wavelengths to detect particles, the system is able to distinguish between particle sizes, and provide repeatable absolute smoke obscuration values, while rejecting the presence of dust particles or solid intruding objects. With a range of up to 150m (OSI-10 only) and easy alignment OSID is ideal for use in a wide range of applications.

Specifications

Operating Voltage	20 to 30Vdc
Imager Op. Current	4mA nom. (1 Emitter) 7mA nom. (7 Emitters)
Peak Current	27mA (training mode)
Operating Temp	-10°C to +55°C
Relative Humidity	10 to 95% (non-cond.)
Ingress Protection	IP44 (electronics) IP66 (optics enclosure)
Dimensions (HWD)	130x198x96mm
Weight	585g (Emitter) 610g (Imager)
ActivFire Listed	afp-2539
FPANZ Listed	Various (refer to Xtralis section)

Part Numbers

OSI-10	Imager 7deg (1 SP Emitter max.)
OSI-45	Imager 38deg
OSI-90	Imager 80deg
OSE-RBA	OSID Emitter Battery
OSE-SP-01	Emitter (std. pwr. Batt.)
OSE-SPW	Emitter (std.pwr. 24V)
OSE-HPW	Emitter (high pwr 24V)
OSP-002	Laser Alignment Tool
OSE-ACF	Anti-Condensation film for Emitter, Pkt of 10
OSEH-ACF	EH Anti-Condensation film for Emitter, Pkt 10
OSI-LS	Light Shield for OSI-10
OSID-EHE	Emitter Environmental Housing
OSID-EHI	Imager Environmental Housing
OSID-INST	Install Kit incl. Laser & Filter
OSID-WG	Wire Guard

Features of OSID

- Maximum detection range up to 150m
- Status LEDs for fire, fault and power
- High nuisance-alarm immunity
- Dust and intrusive solid-object rejection
- Easy alignment with large adjustment and viewing angles
- High tolerance to building flex and vibration
- Simple DIP switch configuration
- Dual wavelength LED-based smoke detection
- Limited maintenance requirements
- Conventional alarm interface for straightforward fire system integration
- Configurable alarm thresholds
- Both wired and battery-powered Emitters available

Benefits of OSID

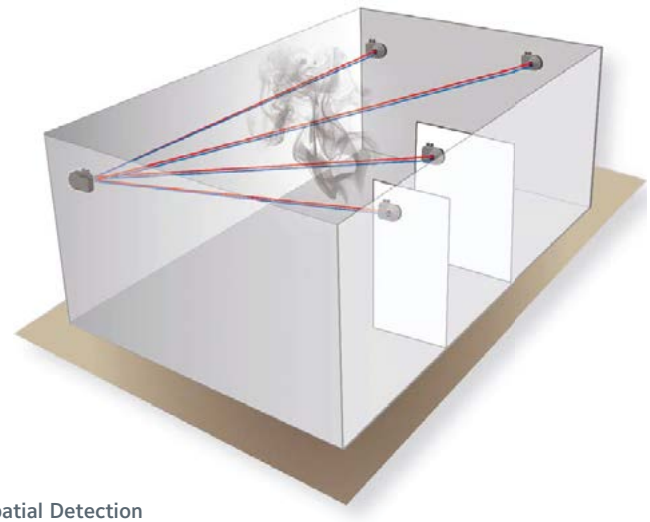
- Simple and quick installation
- High tolerance to vibrations, building movement and high airflow
- Reliable discrimination between real smoke and other intruding objects such as dust, steam, birds, insects and forklifts
- Requires only 200mm free space
- 3-D coverage

OSID Applications

OSID is ideal for use in a wide range of industries and applications. These include atriums, domes and large rooms in:

- Airports
- Train Stations
- Shopping Centres
- Stadiums
- Educational facilities
- Hotels, convention centres and office buildings/complexes
- Entertainment venues
- Warehouses and production floors

Four OSID Emitters within the field-of-view of a single Imager



True Spatial Detection

BEAM1224

BEAM1224 / BEAM200 detector & reflector

Part Numbers

BEAM1224	4 wire conv. det & 200 mm refl.
BEAM1224S	4 wire conv. det & 200 mm refl. c/w sensitivity test
BEAM200	Analogue addressable det.
BEAM200S	Analogue addressable det c/w sensitivity test
BEAMLRK	Long range accessory kit
BEAMMMK	Multi-mount kit
BEAMSMK	Surface mount kit
RTS451	Remote test station used to initiate the sensitivity test
RTS451KEY	Remote test station with key lock
BEAMHK	Heater kit for transmitter/ receiver
BEAMHKR	Heater kit for reflector

The BEAM1224 is a 4-wire conventional projected beam smoke detector suited for protecting open areas with high ceilings where other methods of smoke detection are difficult to install and maintain.

It is to be used with Listed compatible control panels only. Installation of the single-ended reflective design is much easier than the dual-ended projected beam detectors.

Alignment is quickly accomplished via an optical sight and a 2-digit signal strength meter incorporated into the product.

Rated for operation from –30°C to +55°C, BEAM1224 can be used in open area applications to provide early warning in environments where temperature extremes exceed the capability of other types of smoke detection.

BEAM1224 Specifications

Operating Voltage	
BEAM1224	10.2 to 32 Vdc
BEAM1224S	15 to 32 Vdc
BEAM1224S should not be used with 12V power sources	
Current (24Vdc)	
Standby	17mA avg.
During Testing	500mA max.
Alarm	38.5mA max.
Fault	8.5mA max.
Alignment Mode	28mA max.
Indicator LED Colour	
Alarm	Red
Fault	Yellow
Normal	Green flashing
Protection Range	5m to 100 m
FPANZ Listed	VF/347

BEAM1224 & 200 Common Specifications

Adjustment Angle	+/– 10° horiz. & vert.
(The optics move independent of the unit)	
Sensitivity Level	25% to 50%
Fault Condition	≥96% obsc. blockage
Operating Temperature	–30°C to +55°C
Relative Humidity	10% to 93% (n/cond)
Dimensions (HWD)	
Detector	254x191x84 mm
Reflector (4.8m to 70m)	200x230 mm
Reflector (>70m)	400x460 mm

BEAM 200 Specifications

Operating Voltage	15 to 32 Vdc
Current (24Vdc)	
Standby	2mA avg.
During Testing	500mA max.
Alarm	8.5mA max.
Fault	4.5mA max.
Alignment Mode	20mA max.
Indicator LED Colour	
Alarrm	Red
Fault	Yellow
Normal	Green flashing
Protection Range	5m to 100 m
FPANZ Listed	VF/346

BEAM200

The BEAM200 is an intelligent projected beam smoke detector. It is uniquely suited for protecting open areas with high ceilings where other methods of smoke detection are difficult to install and maintain. It is to be used with UL Listed compatible control panels only. Installation of the single-ended reflective design is much easier than dual ended projected beam detectors. Alignment is quickly accomplished via an optical sight and a 2-digit signal strength meter incorporated into the detector.

Rated for operation from –30°C to 55°C, The BEAM200 consists of a transmitter/receiver unit and a reflector. When smoke enters the area between the unit and the reflector it causes a reduction in the signal and, when the smoke level reaches the predetermined threshold, an alarm is activated. BEAM200 has four standard sensitivity selections along with two Acclimate settings.

When either of the two Acclimate settings are selected the detector will automatically adjust its sensitivity to select the optimum sensitivity for the specific environment. BEAM200S is equipped with an integral sensitivity test feature that consists of a test filter attached to a servo motor inside the detector optics. Using the remote test station RTS451, the motor is activated and moves the filter in the pathway of the light beam, thereby testing detector sensitivity.

Optical Fibre Temperature Sensing

The reliability and precision of a fire detection system plays a key role in the early detection of fire. The MZX SensorLaser™ Plus provides fast and continuous fire detection even in difficult and varying ambient conditions. This linear heat detection system enables long and heavily fragmented facilities such as traffic and supply tunnels, cable routes and conveyor belts, as well as large-scale buildings such as production halls, cold stores and multi-storey car parks, to be monitored at all times. The MZX SensorLaser™ Plus is ideal for use in areas that are hard or impossible to access after installation, e.g. false floors, because maintenance can be carried out from the control unit.
The MZX SensorLaser™ Plus enables a measuring range of up to 8 km per sensor cable to be monitored. Up to two 8km spurs or one 8km loop can be connected. Because the ambient conditions in a monitoring area of this size can vary enormously, the individual sensor cables can each be divided into up to 256 zones. Several alarm criteria that can be freely defined as required operate in each zone.
A further unique selling proposition is the use of a laser with a particularly low power output with the class 1M. The accessible laser radiation emitted by this class of laser is not hazardous to the eyes, while operation is absolutely fail-safe even in the event of a break in the cable.
In addition, the sensor cable can be used in explosive atmospheres (ATEX zones) up to zone 0 without any additional measures required. In contrast to other laser supported systems, the low laser output of < 20mW ensures that the measuring system has a long service life.

Features

- Fibre optic sensor loop up to 8km
- Continuous temperature profiles of temperature on a PC
- Programmable functions
- Up to 256 programmable 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, radiation, dust, moisture, etc.
- 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

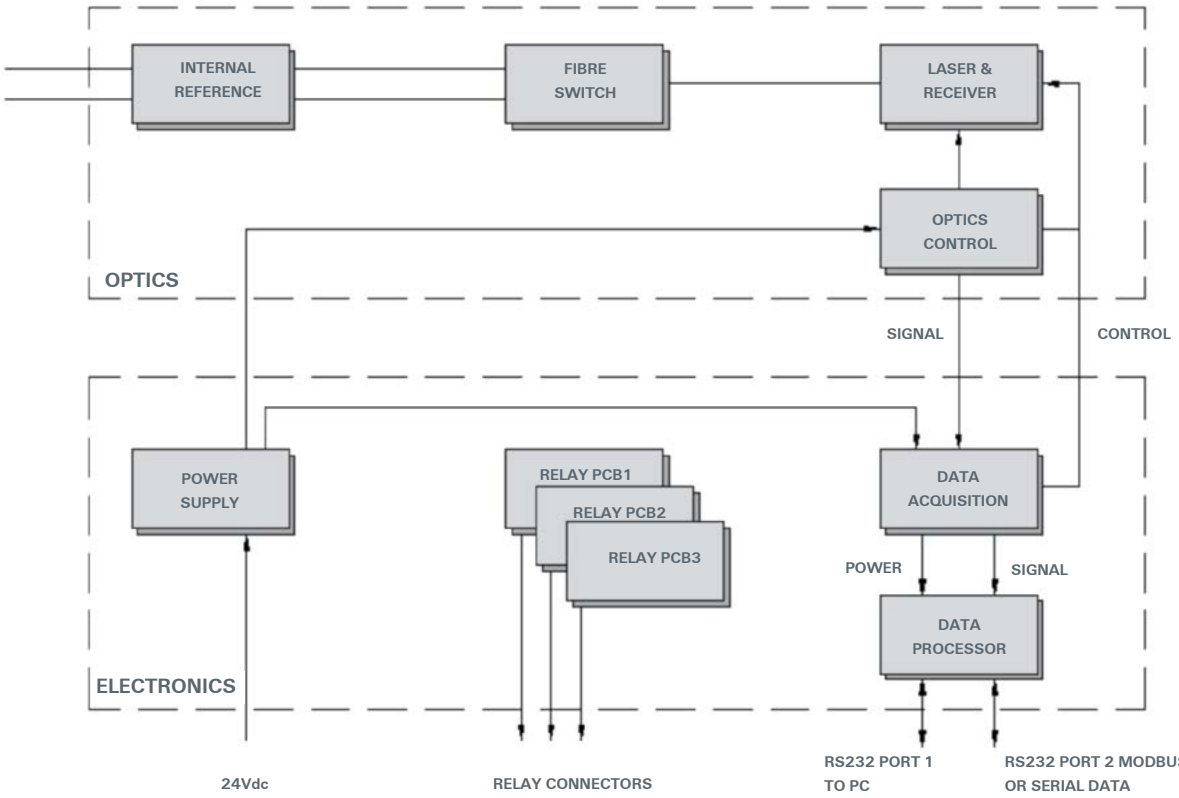
Supply Voltage	24Vdc (-6/+12Vdc)
Power Consump'n	20W max
Supply Current	<1A
Fuse Rating	<2A (anti-surge)
Fibre	62.5/125 graded index multi-mode
Operating Temp	-10°C to +60°C
Storage Temp	-40°C to +80°C
Relative Humidity	15% to 95% (non-cond.)
Dimensions	88x448x364mm
Weight	9kg
Compliance	
Class 1M Laser	IEC 60825-1 (2001)
EMC	IEC 61326 (1997)
Low Voltage	Directive 73/23/EEC

System Components

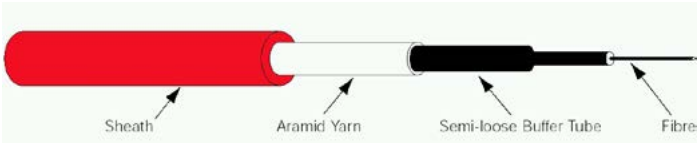
- Control Unit - available as:
  - Cabinet, including 32 relays and PSU in both 2km or 4km model
  - 19in Rack Mounting including 32 relays, in both 2km or 4km model
- Sensor Line thermoplastic sensor cable in 1, 2 or 4.4km reel
- Sensor Tube stainless steel sensor cable in 1, 2 or 4.4km reel
- For further information,ordering codes and pricing, contact Johnson Controls Fire Detection Representative

Important The Fibre Optic Linear Heat Detection products are the single highest value fire detection products available from Johnson Controls Fire Detection. 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

Part Numbers
There are different models to suit specific length of risk to be protected. Please contact Johnson Controls for the appropriate order codes.

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 1.25 metres.
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 ±1.25 m. 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.

Summary of Cable Features

- 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

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 Equipment Bag and Pole 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
517.001.243	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, SOLO101 extension tube and SOLO610 equipment bag. 800RT and SOLO704 may be ordered separately.
517.001.254	SOLO461 Heat Detector Tester Head Unit
517.001.264	SOLO610 Equipment Bag and Pole Bag

Part Number
517.001.279
Solo Test Smoke
250ml can

Part Number
CRC-TEST
Test Smoke
71g 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 Vigilant detector changers and testers

Part Number
516.800.917
800RT M600/M800 Detector removal tool. 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
X61
Brandax VS Smoke Cartridge, 5 60g cartridges, dia 32x62mm, 55m³ smoke vol, 180-240s burn time

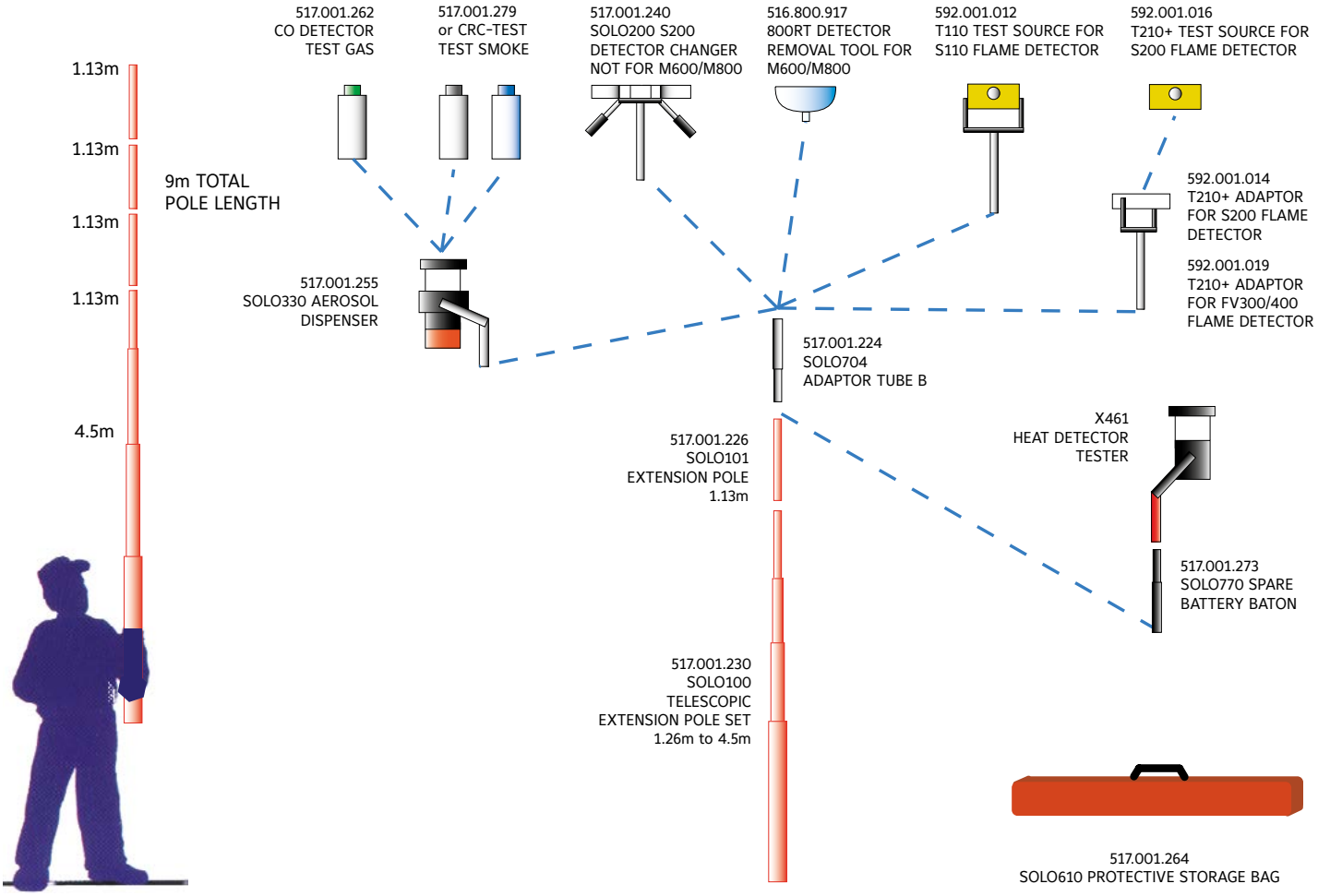
Part Number
X62
Ventilax Smoke Cartridge, 5 60g cartridges, dia 18x62mm, 17m³ smoke vol, 180-240s burn time

Part Number
X65-25
Splintax Smoke Matches, 25 1g matches, 0.7m³ smoke vol, 25s burn time

Part Number
X66
Miniax Smoke Cartridge, 10 3g cartridges, dia 14x32mm, 2.5m³ smoke vol, 40s burn time

Smoke emitters are classified as Dangerous Goods for transport purposes.

SOLO Test Equipment for Point & Flame Detectors



S200 Series Test Equipment

Part Numbers

592.001.016	T210+ Test Source for use with SOLO 704 Adaptor Tube B and SOLO100/101 poles
592.001.014	T210+ Adaptor for S200 Detectors
592.001.019	T210+ Adaptor for FV300/FV400 Detectors

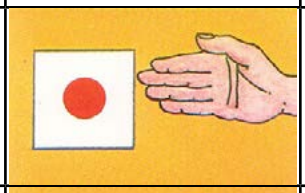
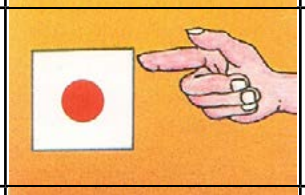
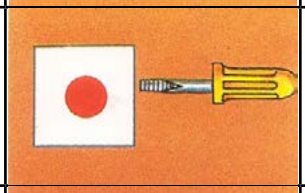
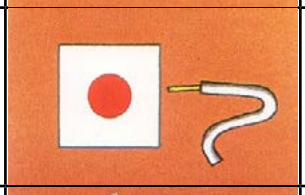
Note the Test Source and appropriate Adaptor are required to test S200 and FV300/400 Detectors

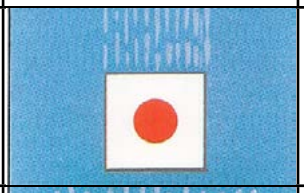
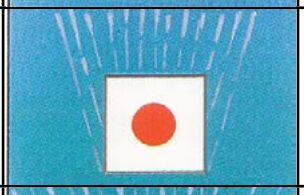
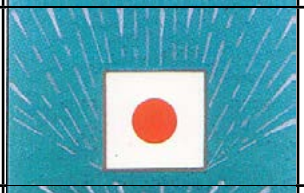
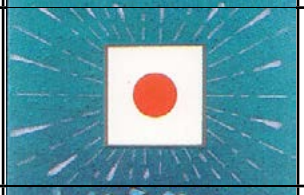
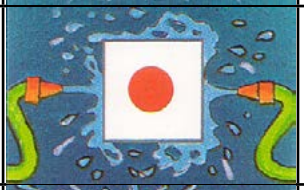
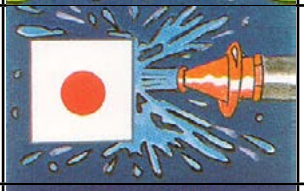
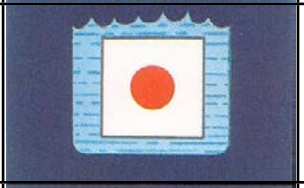
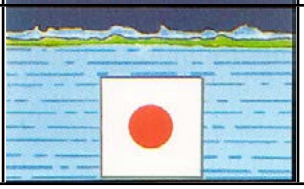
S100 Series Test Equipment

Part Numbers

592.001.012	T110 Test Source for use with SOLO 704 Adaptor Tube B and SOLO100/101 poles
592.001.010	T110/T210 PP9 NiMH Battery and Charger kit

International Protection Ratings

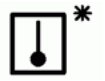
	TEST	PROTECTION
X	No test applied	No specific protection
0	No test applied	Inherent degree of protection
1		Protected against solid objects larger than 50mm (e.g. accidental contact with hand)
2		Protected against solid objects larger than 12mm (e.g. finger of the hand)
3		Protected against solid objects 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.

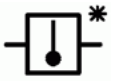
Symbols



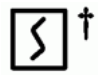
Heat detector (exposed or ceiling mounted)

Heat detector in concealed space

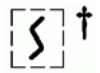
Heat detector within air duct



Line detector



Smoke detector (exposed or ceiling mounted)

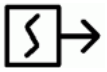


Smoke detector in concealed space

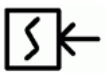
Smoke detector within air duct

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

Fire indicator panel

Sub indicator panel

Remote control equipment

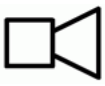
Repeater panel

Addressable device

Storage battery

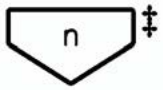
Fire alarm bell

Visual warning device

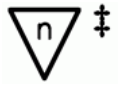


Alarm sounder

Loud speaker



Device address



Alarm zone

Circuit wiring

Flow switch

Pressure switch

Manual call point

Monitored valve

Multi-Sensor detector

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

† 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

Spare Parts List

SIGMA 5 Comprehensive Spares List

FP0759	_SIGMA_ 5 Fire Panel, Rear Service
FP0760	_SIGMA_ 5 Fire Panel, Front Service
PA1025	20W Mini-Gen Tone Generator, 12V
PA0861	General Purpose Brigade Relay Interface
PA0862	General Purpose SGD incl. switches
SW0189	Services Restore Keyswitch
PSH-12100	Battery, 12V 10.5Ah (largest that will fit in _SIGMA_ 5)
PA0483	Unprotected Termination Board
LM0049	Loom, 26-way FRC, 250mm
SM0437	Empty Cabinet Front Service c/w Index
SM0471	Empty Cabinet Rear Service c/w Index
FA2070	_SIGMA_ 5 Front Service Index
FA2073	_SIGMA_ 5 Rear Service Index
PA0841	_SIGMA_ 5 Main Board, Rear Service
PA0842S	_SIGMA_ 5 Main Board Front Service

FP1600 / OMEGA 64 Comprehensive Spares List

FP0547	Master FP1600, R/S with 16 zone index, Complete with Master PCB set
FP0548	Master FP1600, F/S with 16 zone index complete with Master PCB set
SP0424	FP1600 R/S Empty Cabinet, C/W Index
SP0425	FP1600 F/S Empty Cabinet, C/W Index
FP0896	FP1600 Empty Cabinet, R/S with PSU and 16 zone index
FP0897	FP1600 Empty Cabinet, F/S with PSU and 16 zone index
KT0216	Master PCB set (for zones 1 to 16) This kit contains: Master PCB (F/S or R/S), LED board (break-off), FRC Looms, Replacement Gear Plate for older systems
KT0215	Slave Extender PCB set Ignore PSU for zones 17-32, 49-64, or 81-96, Use PSU for zones 33-48, 65-80, This kit contains: Slave PCB (fi ts on F/S or R/S), LED board (break-off), FRC Looms
KT0131	Kit, Comms Extender for 2+ Slaves PA0771 Comms Interface PCB, FRC: 1 x 250mm, 1 x 400mm, 2 x 1500mm, 4 x PCB Standoffs
KT0142	Kit, FP1600 MkII or MkIII, upgrade to 32 zones,
KT0438	= KT0142 + SP0424 (see page 6)
KT0439	= KT0142 + SP0425 (see Page 6)
LM0074	Loom Master - First Slave
LM0073	FRC Loom, 20 Way, 1500mm
SF0217	Software, OMEGA 64, Master V3.01, OTPROM (MkII only)
SF0218	Software, OMEGA 64, Slave V3.01 OTPROM (MkII only)
LB0589	Label, OMEGA 64 Diagnostics/Operation
LB0537	Label, OMEGA 64 Zone Numbering
SU0159	10A Thermal Cutout (see note on page 3)
FA1371	Fabrication, OMEGA 64, R/S Index (Master 32 zone)
FA1372	Fabrication, OMEGA 62, F/S Index (Master 32 zone) (spares only for earlier cabinets)
FA1379	Fabrication, OMEGA 64, R/S Index (Extender 16 zone)
FA1380	Fabrication, OMEGA 64, F/S Index (Extender 16 zone) (spares only for earlier cabinets)

MX4428 Comprehensive Spares List

FA1174	MCP Blanking Plate
FA1193	7U Blank Inner Door
FA2150	MX4428 Keyboard Membrane Overlay
FP0575	MPR Responder in Box (PA0713 PCB only)
FP0814	MX4428 Software Update Kit
FP0824	MXP Responder in box (PA0893 PCB only)
FP0882K	F4000 AS1603 Power Supply 24V 5A
FP1007	F4000 AS1603 Batt Test Kit for ME0476
HW0040	Lock A/CR16/01/3B/N04 003 Keyed
IC0320	F4000 IC 28C64 8K EEPROM
IC0414	IC 28C010 EEPROM U2 PA0482
KT0178	F4000 Point Text Upgrade (IC0414(U2),IC0320(U4))
LM0041	Programming Cable DB9 to c.i.e.
LM0073	20W FRC Keybd to Main bd 1.45m
LM0083	20W FRC Keybd to Main bd 0.7m
ME0060	7U Display Door 1901-79
ME0351	F4k small cab inner door AS1603 - _no replacement avail_
ME0355	4U door, AS4428 keypad, PA0890 PCB
ME0356	4U door AS1603 keypad, PA0891 PCB
ME0444	4U door & AS4428 keypad (no PCB)
ME0476	MX4428 Power Supply 24Vdc 5A PSU - replaces FP0874
PA0449	F4000 Power Supply PCB 1901-2
PA0463	F4000 Loop Booster PCB 1901-35
PA0481	F4000 RZDU/RS232 I/F PCB 1901-100 incl LM0061
PA0482	F4000 Memory LCD I/F PCB 1901-102
PA0487	Banked EPROM Emulator PCB 1901-113
PA0711	RS485 comms CMOS PCB 1901-139-1
PA0713	MPR Responder PCB Only 1901-141
PA0717	PTM PCB 1931-2-3
PA0751	F4000 main PCB no software 1901-12 - OBSOLETE
PA0773	RS485 coms CMOS PCB FRC 1901-139-3
PA0799	PCB PTM no software 1931-84-3
PA0890	PCB AS4428 keyboard/LCD module
PA0891	PCB AS1603 keyboard/LCD module
PA0893	MXP Responder PCB only 1901-213
PA0906	68HC11 Micro PCB 1901-210
PA0951	MX4428 Main Bd, c/w PA0906, no s/w 1901-12
PA1040S	MX4428 Main board c/w Mem/LCD I/F, S/W
SF0238	MPR Software V3.00
SF0261	F4000 Master Software V2.39N
SF0262	MX4428 Master Software V3.15NA
SF0349	MX4428 Master Software V3.21N (U7 PA0951, U1 PA0482)
SF0350	MX4428SL Master Software V3.21S Single Loop
SM0031	FA1201 F4000 LCD keyboard overlay (AS1603.4)
SM0032	FA1159 F4000 non LCD keyboard overlay (AS1603.4)
SW0121	PSU Mains Switch DPST 6A 250VAC

Spare Parts List

QE90 Comprehensive Spares List

DD0084	QE90 FIP EOL Diode Zener 10V 1W 5%
FA1852	QE90 6U Amp Rack Cover Smoked Perspex
FA1995	ECP Door only 16U All-in-One Panel E/8/3WIP/Zone
FA2027	FAB,699-237,QE90 ECP+2Z Keypad,3WIP/ZONE - Keypad only
FA2029	FAB,699-238,QE90 8Z EXTENDER Keypad,3WIP/ZONE
FP0539	QE90 PAGING CONSOLE
FP0546	FP,F4000 THERMAL PRINTER
FP0752	FP,QE90,PRINTER OPTION KIT,699-244
FP1067	QE90 4U MODULE BLANK UPGRADE KIT
FP1068	QE90 FIP/BGA MASTER UPGRADE KIT
FP1069	QE90 FIP/BGA EXTENDER UPGRADE KIT
FP1070	QE90 STROBE MASTER UPGRADE KIT
FP1071	QE90 SPIF MODULE UPGRADE KIT
FP1072	QE90 ECM MODULE + LOOMS (NO S/W) UPGRADE KIT
FP1073	QE90 WIP SLAVE + TERM BOARD UPGRADE KIT
FP1074	QE90 100W AMP + TRANSFORMER UPGRADE KIT
FP1075	QE90 2x50W AMP + TRANSFORMER UPGRADE KIT
FP1076	QE90 2x25W AMP + TRANSFORMER UPGRADE KIT
FP1077	QE90 4x10W AMP + TRANSFORMER UPGRADE KIT
FP1078	QE90 4x25W AMP + TRANSFORMER UPGRADE KIT
FP1079	QE90 200W AMP + TRANSFORMER UPGRADE KIT
FP1080	QE90 5 MODULE HINGE UPGRADE KIT
FP1081	QE90 6 MODULE HINGE UPGRADE KIT
FP1082	QE90 7 MODULE HINGE UPGRADE KIT
FP1083	QE90 8Z DISPLAY EXTENDER + LOOMS UPGRADE KIT
FZ9026	4U Module Blank
HW0040	003 Lock Tumbler & Keys
KT0102	Hinge Kit - 3 Modules 12U
KT0103	Hinge Kit - 4 Modules 16U
KT0104	Hinge Kit - 5 Modules 20U
KT0120	Hinge Kit - 6 Modules 24U
KT0105	Hinge Kit - 7 Modules 28U
KT0546	Kit, PSU2412 Additional Circuit Breaker incl. Loom & Mounting
KT0169	KIT,QE90 ECP,ICs FOR RS232/PRINTER
LM0043	LOOM,699-090-1,FRC,20W,0.07m,QE90 FIP EXTENDER
LM0047	LOOM,699-089,FRC,26W,1.3m,TWISTED,QE90 TRAN
LM0048	LOOM,699-090-2,FRC,20W,0.25m,QE90 DISPLAY EXTDR
LM0060	LOOM,699-087,FRC,34W,1.2m,QE90
LM0063	LOOM,699-228,QE90 ECP POWER LOOM,UP TO 21U
LM0065	LOOM,1901-174,RS485 Comms BD(also ECM),10 W FRC - DB9
LM0076	LOOM,1922-25,ECM PROG,DB9F to DB9F,NULL MODEM
LM0077	LOOM,1922-26,RZDU RS232-ECP HIGH LEVEL LINK,2.9M
LM0078	LOOM,1922-27,RZDU RS232-ECM HIGH LEVEL LINK,3M
LM0098	LOOM,699-087,FRC,34W,0.8m,QE90
LM0100	LOOM,699-087,FRC,34W,1.5m,QE90
LM0101	LOOM,699-241,FRC,26W,0.45m + 0.9m,QE90
LM0131	LOOM,SERIAL PRINTER CABLE,DB9M to(x)DB9M+DB9F
ME0200	QE90 CARDFRAME INCLUDING BPLN2000 PCB
ME0205	QE90 DISPLAY ASSY 3 WIP PER ZONE, 8 ZONE incl. PCB
ME0207	QE90 ECP ASSEMBLY 3 WIP PER ZONE incl. PCB
ME0208	QE90 FLUORESCENT LIGHT
ME0211	QE90 24V 12A PSU, PSU308 superseded by ME0333
ME0212	QE90 24V 3A PSU, PSU2403 superseded by ME0331
ME0213	QE90 NOISE CANCELLING MIC. INCLUDING DIN PLUG
ME0273	QE90 21U Outer Door, Full Window
ME0297	QE90 AUTO/MAN/ISOL Keysw. (incl loom, connector, SW0018)
ME0330	MECH ASSY,1966-6,PSU2406,BRICK
ME0331	MECH ASSY,1966-21,PSU2406,2U RACK MTG
ME0333	MECH ASSY,1966-22,PSU2412,2U RACK MTG
ME0381	MECH ASSY,QE90 ECP + 2Z KEYBOARD REPLACE,3WIP/Z - (Inner Door with Keypad (for >21U panel) no PCB)
ME0382	MECH ASSY,QE90 ECP 8 ZONE KEYBOARD REPLACE,3WIP/Z (Inner Door with Keypad (for >21U panel) no PCB)
PA0484	QE90 PCB 1929-1 PAGING CONSOLE
PA0623	PCB ASSY,QE90 ECP9702-2 EVAC CNTL PANEL 3WIP/ZONE with socket for site-specific WIP s/w
PA0642	PCB ASSY,QE90 WIPS2000 WIP SLAVE,0V REF Replaces PA0622
PA0643	PCB ASSY,QE90 ECP9702-2 EVAC CNTL PANEL 3WIP/ZONE incl. WIDGET - see also PA0623
PA0646	PCB ASSY,QE90 ALIM9706,AUDIO LINE ISOLATOR MODULE
PA0647	PCB ASSY,QE90 AMP200 200W AMPLIFIER MODULE
PA0648	PCB ASSY,QE90 TRAN200 200W TRANSFORMER MODULE
PA0649	PCB ASSY,QE90 SPIF9709 SECONDARY PANEL INTERFACE
PA0650	PCB ASSY,QE90 EAMP9001 4 ZONE POWER AMP
PA0651	PCB ASSY,QE90 FIB8910 FIP/BGA MASTER (DIN RAIL)
PA0652	PCB ASSY,QE90 FIPE9004 FIP/BGA EXTENSION (DIN RAIL)
PA0653	PCB ASSY,QE90 EMSP8911-2 DISPLAY KBD 3WIP/ZN supers. by ME0205 exc. for pre-July 2009 QE90 in 21U cab.
PA0654	PCB ASSY,QE90 EMUX9002 MULTIPLEXER supers. by PA0758
PA0656	PCB ASSY,QE90 RING9006 MASTER PHONE RING
PA0657	PCB ASSY,QE90 SE9004 SIGNAL INTERFACE (DIN RAIL)
PA0660	PCB ASSY,QE90 BPLN2000 BACKPLANE
PA0662	PCB ASSY,QE90 WIPS9004 WIP SLAVE use PA0642 with PA0916
PA0679	PCB Assy QE90 24V 3A PSU 699-160
PA0684	PCB ASSY,TRAN9304-1,4 X 10W MODULE WITHOUT RELAYS superseded by PA0795 or PA0796
PA0687	PCB ASSY,TRAN9304-4,2 X 25W MODULE WITH RELAYS superseded by PA0794
PA0689	PCB ASSY,QE90,WLED9307,WIP FLASHING LED
PA0690	PCB ASSY,QE90 HAMP9308 2 X 50W AMPLIFIER MODULE
PA0691	PCB ASSY,QE90 HTRN9308-1 2X50W TRANSFORMER MODULE
PA0692	PCB ASSY,QE90 HTRN9308-2 1X100W TRANSFORMER MODULE
PA0695	PCB ASSY,QE90 HTMS9408-1,2*50W XFMR MOD MUSIC SWCH
PA0696	PCB ASSY,QE90 HTMS9408-2,100W XFRMR MOD MUSIC SWCH
PA0697	PCB ASSY,QE90 STRM9502 STROBE/RELAY MODULE (DIN RAIL)
PA0698	PCB ASSY,QE90 ECM9603 EVAC COMMUNICATION MODULE
PA0730	PCB ASSY,1922-11-2,24V GENERAL PURPOSE RELAY BD
PA0758	PCB ASSY,QE90,EMUX9601,MULTIPLEXER 16SEC SPEECH
PA0759	PCB ASSY,QE90,EMUX9601,MULTIPLEXER 60SEC SPEECH
PA0792	PCB ASSY,TRAN9705-2,4x25W MODULE C/W RELAYS
PA0794	PCB ASSY,TRAN9705-4,2x25W MODULE C/W RELAYS
PA0795	PCB ASSY,TRAN9706-1,4x10W MODULE WITHOUT RELAYS (can also use PA0796)
PA0796	PCB ASSY,TRAN9706-2,4x10W MODULE C/W RELAYS
PA0916	PCB ASSY,QE90 WTRM2000,WIP TERMINATION (DIN)
SF0132	SOFTWARE,QE90,EMUX9601,ALERT/EVAC 60SEC SPEECH
SU0168	SUNDRY,MICROPHONE,GOOSENECK DM521B
SU0169	SUNDRY,MICROPHONE,DESK PM600D
SW0018	Keyswitch only-no loom (incl 003 keys)

***MX1* Spares List**

FA2416	*MX1* Rear Service Index 1982-15 (1 supplied with Slimline panel)
FA2489	*MX1* AS4428.3 Membrane Keyboard
FP0913	Replacement *MX1* LCD Module Kit
FP0950	*MX1* Loop Card Kit
FP1002	*MX1* 16 Zone LED Display Extender
LB0600	Label,*MX1*,blank zone label,grey (sheet of 5 supplied with panel)
LM0169	*MX1* 2nd Loop to Cont. Loom FRC 10W Style C 400mm
LM0291	*MX1* Display Intercon. Loom FRC 26W Style B 230mm
LM0319	*MX1* Main Bd to T-GEN Loom
LM0323	*MX1* LCD to keyboard Loom 16way FRC Style D 125mm
LM0324	*MX1* Keybd to Main Brd Loom 10W FRC Style B 1m
LM0335	Loom MX1 LCD/Keyboard to 1st Zone Disp. NZ R/S
LM0339	Loom, FRC, *MX1* to 1st Display Board
LT0344	*MX1*, Operator Manual
LT0360	*MX1*, Installation Guide
ME0448	*MX1* PSU Assy
ME0450	*MX1* Door c/w Hinges (new Slimline style)
ME0457	*MX1* 4U, 80 Zone Display Door
ME0464	*MX1* 4U Door c/w Keypad (no PCB or LCD)
ME0465	*MX1* 4U LCD Door Tested
PA1081	PCB assy1982-2, *MX1* Controller
PA1057	PCB assy 1982-64 *MX1* LCD/Keyboard AS4428.3
SF0305	S/w, *MX1* CPLD V1.00
SF0392	S/w, *MX1* Loop Card Flash
SF0407	S/w, *MX1* FPB Keyboard Controller Flash
SF0412	S/w, *MX1* Mainboard V1.3x Flash

Reference Tables

Conventional Detector Selection Chart

	Environment	Very Clean and Dry	Benign Moderately Clean Regulated Temperature	Dirty - Smoky	Dusty and/or Humid	Hot and Smoky	Open Areas
Fire Loading	For Example Probable Risk	- Clean Room - Data Processing	- Office - Light Industrial - Hospital - Residential - Passenger Accomodation	- Loading Bay/ Warehouse with diesel forklifts etc - Heavy Industrial - Ferry (car deck)	- Livestock Pen - Mill - Laundry - Changing Room	- Kitchen - Engine Room - Test Beds	- Atrium - Theatre - Hanger - Oil Rig - Turbine Hall
Electronic Equipment, Electrical Switchgear, Electric Motors, Cable, Conduit	Cable pyrolysis (toxic fumes), Electrical Arcs (ignition source), Associated electrical fire	**Aspirated** Photo Ionisation	Aspirated Photo	Photo	–	–	**Aspirated** **Flame** Beam
Fabrics, Clothes, Soft Furnishings, Animal Bedding, Wood Shavings	Smouldering (difficult to locate-toxic fumes), Likelihood of flashover	–	**Aspirated** **CO/Heat** Photo	**CO/Heat** Photo	**CO/Heat** Photo	CO/Heat Heat	**CO/Heat** Flame Beam
Flammable Liquids, Paints, Solvents, Flammable Gas, Unstable Chemicals, Foodstuffs	Flaming fire, Rapid build-up of dense smoke, High temperature, Associated explosion danger	**Flame** **Ionisation** Photo CO/Heat Heat	**Flame** **Ionisation** Photo CO/Heat Heat	**Flame** Ionisation CO/Heat	**Flame** CO/Heat	**Flame** Heat	**Flame** Beam
General, Organic Waste, Animal Fodder, Wooden Structures, Solid Fuels	Smoke and Flame, Initially fairly slow but high temps. once established	–	**CO/Heat** **Photo** Ionisation	**CO/Heat** Heat	**CO/Heat** Heat	**Heat** CO/Heat	**CO/Heat** **Flame** Beam
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 CO/Heat Photo Ionisation Flame Heat	**CO/Heat** Photo Ionisation Heat Flame	**CO/Heat** **Photo** Ionisation Flame Heat	**CO/Heat** Flame Heat	**Heat** CO/Heat Flame	**Flame** **CO/Heat** Beam

This table is for general guidance only and should not be used as a substitute for expert advice.
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.

MX Detector Selection Chart

Fire Loading / Environment	Probable Risk / For Example	Very Clean and Dry - Clean Room - Data Processing	Benign Moderately Clean Regulated Temp. - Office - Light Industrial - Hospital - Residential - Passenger Accommodation	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 pyrolysis (toxic fumes). Electrical Arcs (ignition source). Associated electrical fire.	**Aspirated** 814P/814PH 814I	Aspirated 814P/814PH	814P/814PH	–	–	**Aspirated** **Flame** Beam
Fabrics, Clothes, Soft Furnishings, Animal Bedding, Wood Shavings	Smouldering (difficult to locate-toxic fumes). Likelihood of flashover.	Aspirated 814P	**814CH** 814P/814PH	**814CH** 814P/814PH	**814CH** 814P/814PH	814CH 814H	**814CH** Flame Beam
Flammable Liquids, Paint, Solvent, Flammable Gas, Unstable Chemicals, Foodstuffs	Flaming fire Rapid build-up of dense smoke. High temperature Associated explosion danger.	**Flame** **814P/814PH** 814I 814CH 814H	**Flame** **814P/814PH** 814I 814CH 814H	**Flame** 814CH 814H	**Flame** 814CH 814H	**Flame** 814H	**Flame** Beam
General Organic Waste, Animal Fodder, Wooden Structures, Solid Fuels	Smoke and Flame. Initially fairly slow but high temps. once established.	–	**814CH** **814P/814PH** 814I	**814CH** 814H	**814CH** 814H	**814H** 814CH	**814CH** **Flame** Beam
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 814CH 814P 814I Flame 814H	**814CH** **814P/814PH** 814I 814H Flame	**814CH** **814P/814PH** 814I Flame 814H	**814CH** 814P/814PH Flame	**814H** 814CH Flame	**Flame** **814CH** Beam

This table is for general guidance only and should not be used as a substitute for expert advice.
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.

Sounder Base Selection Guide

Product Code	**577.001.035**	**516.800.910**	**516.800.911**
Description	601SB Conventional	802SB *MX* Low Power	901SB Universal
CIE	Conventional only	*MX* Only	Minerva Addressable/ *MX*
Powered From	24Vdc	*MX* Addressable Loop	24Vdc
Detector required to Operate?	No	Yes	Yes
Park Clip Colour	Green	White	Blue
Current @ 68dBA (min. volume)	1.2mA	1.2mA	1.2mA
Current @ 90dBA (max. volume)	6.8mA	6.8mA	6.8mA
Dutch Slow Sweep(7)	Yes	Yes	Yes
Temporal 4	Yes	Yes	Yes
Slow Sweep(3)	Yes	Yes	Yes
March Time Beep(25)	Yes	Yes	Yes
Fast Sweep(2)	Yes	Yes	Yes
Temporal 3 (ISO)	Yes	Yes	Yes
Alternating 2(11)	Yes	Yes	Yes
Continuous(14)	Yes	Yes	Yes

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

Goods Return Procedure

CUSTOMER GOODS RETURN PROCEDURE

There is now a new return procedure in place with Johnson Controls. The purpose of the new return procedure, known as a RAN (Return Authority Number) is to ensure prompt and consistent handling of product returns by Johnson Controls Product returns will not be accepted for credit unless a RAN has been issued by Customer Service or if a Product Manger has given approval. All returned goods must clearly show the RAN on the outside of box/es, packets etc., and be in its original boxes or packets for re-sell.

A RAN will need to be obtained if goods are;

1) No longer required by you or your customer
2) The wrong goods were ordered from Johnson Controls
3) Faulty product is being returned

This RAN can be obtained by contacting Johnson Controls Customer Service on 09 635 0617 or e-mail to fdp.customerservice.anz@jci.com.

PROCEDURE

When contacting Johnson Controls for a RAN please have the following information available:

- Your contact details
- Order number or Picking Slip the product was supplied on
- Product details / codes
- Quantity returning
- Serial Number (if applicable with a Non Conforming Product –NCP)
- Fax number or email address

Once Johnson Controls approves the request for return, a RAN # will be issued for the return of product/s and this will be faxed or emailed to you. On arrival back to Johnson Controls the RAN will be set aside for Johnson Controls to inspect and credit.

IMPORTANT - Please note:

- INDENT ITEMS CANNOT BE RETURNED. Only exception will be special approval by Product Managers (please note possible re-stock fee plus freight charges to return to supplier may apply if returned).
- Unwanted goods must be in condition as new or equivalent.
- If any printed circuit boards (PCBs) have had the anti static packet opened your credit will be declined (unless a faulty unit).
- Johnson Controls will not accept responsibility for returns that have been sent back without the correct paperwork – RAN – If this is not followed expect delays in credits being processed.

Warranty

Johnson Controls offers a product warranty of 24 months from the date of purchase for Johnson Controls Manufactured product. Other product is warranted for the length of time offered by its manufacturer, usually 12 months. Warranty returns will only be accepted for defective materials or faulty workmanship.

Warranty returns will be credited or repaired/replaced at Johnson Controls' sole discretion. Indent or special order items are extremely unlikely to be credited.

Johnson Controls will not under any circumstances accept responsibility for consequential or liquidated damages arising as a result of faulty products.

Note: certain products with shorter shelf life may be excluded from the 24 month warranty period. Refer to your Johnson Controls representative for details.

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Product Index

Terms and Conditions

1. GENERAL

Unless the context otherwise requires:

Agreement means the agreement between Supplier and Customer for the supply of Goods by Supplier to Customer and shall be constituted in its entirety by these Terms and Conditions of Sale and, if any, Supplier's quotation and the Confidential Credit Application and Agreement;

Credit Arrangement means the credit terms available to Customer pursuant to an application by Customer for the provision of Goods on credit submitted to Supplier using Supplier's standard credit application form and accepted in writing by Supplier (referred to as the Confidential Credit Application and Agreement);

Customer means the party to whom Supplier has agreed to supply Goods pursuant to the Agreement;

Goods means the goods and/or services agreed to be supplied by Supplier and purchased by Customer pursuant to the Agreement;

GST has the meaning given by the Goods and Services Tax Act 1985 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 New Zealand and any regulation made under that Act;

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;

Purchase Order means the written purchase order by Customer to Supplier for the supply of the Goods;

Supplier means the company named in the quotation for the Goods or, if there is no quotation, the entity named in the invoice.

Supplier Group means that group of companies comprising Supplier and each of its related bodies corporates and affiliates (wherever located) which have the same ultimate holding company.

Wilful Misconduct means any wilful or intentional breach, act or omission done by Supplier:

(a) with the intent to cause Customer material harm; or

(b) where Supplier was aware that material harm would result from such wilful or intentional breach, act or omission.

2. QUOTATIONS AND PURCHASE ORDERS

(a) Subject to the clause immediately below, quotations from Supplier are valid for a period of 30 days from the date of issue or as otherwise specified in the quotation. Prices given in any quotation by Supplier are applicable to that quotation only, and will not apply in any other instances. A quotation from Supplier is not an offer to sell.

(b) In order to purchase the Goods, Customer must place with Supplier a Purchase Order setting out an order number, Supplier's quotation number (if applicable), full description of the Goods to be purchased, the delivery date, delivery point and any other information required by Supplier. The Purchase Order may be accepted or rejected by Supplier at Supplier's sole discretion.

(c) A contract shall be formed by and upon Supplier accepting from Customer a Purchase Order pursuant to the clause immediately above and each contract shall be governed by the Agreement.

(d) The Agreement shall take precedence over any other representations, agreements, arrangements or understandings relating to the Goods and any matters in connection with the Goods.

(e) Any conditions or terms of purchase submitted by Customer deviating from or inconsistent with the Agreement will not bind Supplier, notwithstanding any statement by Customer in its Purchase Order that its terms and conditions prevail over the Agreement.

(f) Where the Goods to be supplied contain raw materials, the price and availability of which is unpredictable (for example, PVC, copper, steel), and there is a lack of availability of such raw material either to enable Supplier to supply the Goods or to supply the Goods at the price stated in the Purchase Order, Supplier may, at its sole option:

(i) expend additional time to make reasonable efforts to attempt to locate raw material, and if raw material cannot be located, serve notice of immediate termination of the Purchase Order under the Agreement; or

(ii) endeavour to reach agreement with Customer on an increase in the purchase price for the Goods, and if agreement cannot be reached, serve notice of immediate termination of the Purchase Order under the Agreement; or

(iii) serve notice of immediate termination of the Purchase Order under the Agreement.

In no case shall Supplier have any liability to Customer as a result of termination, but Customer shall pay to Supplier the purchase price of Goods actually supplied under the Agreement.

3. PAYMENT OF PURCHASE PRICE

(a) Unless otherwise agreed in writing, Supplier accepts Purchase Orders subject to the condition that Customer agrees to pay the purchase price appearing on Supplier's price list for those Goods current as at the date that Supplier accepts the Purchase Order.

(b) If applicable, a copy of Supplier's publicly available price list for the Goods is available on request. All prices on Supplier's price list are subject to alteration without notice.

(c) The total purchase price, unless otherwise stated in the Purchase Order, includes GST but 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, or other taxes, duties or imposts, all of which may be added to the purchase price or otherwise will be paid by Customer or reimbursed by Customer to Supplier, as Supplier may elect.

(d) Payment of the purchase price must be made in full within 30 days after the date of the invoice or otherwise in accordance with Customer's Credit Arrangement.

(e) Customer must not set off any money owing or alleged to be owing by Supplier against money due by Customer to Supplier.

(f) Customer acknowledges that Supplier is a member of the Supplier Group. Customer agrees that Supplier and/or any other Supplier Group company is entitled to exercise a right of set off to the extent Customer is indebted to Supplier or to any Supplier Group company against any monies due by Supplier to Customer or any Supplier Group company on this or any other account.

(g) If Customer does not pay money by the due date for payment, without prejudice to any other rights which it may have against Customer, Supplier may require Customer to pay on 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.

4. CANCELLATION OF ORDERS

Customer may not alter or cancel a Purchase Order without Supplier's prior written consent. If Supplier agrees to alter or cancel the Purchase Order, Customer will indemnify Supplier against any loss, damage and expense incurred by Supplier in relation to the alteration or cancellation of that Purchase Order, including the cost of return freight, return shipping to factory of origin, items purchased from third parties for inclusion in the Goods and all labour and engineering costs incurred by Supplier in the execution or part execution of the Goods and including compensation payable to any of Supplier's suppliers and loss of profit except to the extent that such loss, damage or expense is caused by or contributed to by Supplier's Wilful Misconduct or fraud.

5. RETURN OF GOODS AND CREDITS

(a) Customer is deemed to have accepted the Goods unless it makes a claim in accordance with the clause immediately below.

(b) Customer may reject any Goods that are wrongly supplied or oversupplied by notifying Supplier of the claim and providing full particulars of the claim in writing within 5 days of receipt of those Goods. Supplier may dispute any such claim.

(c) Goods referred to in the clause immediately above may be returned to Supplier for credit if all of the following is complied with:

(i) the Goods are returned to Supplier's premises by prior arrangement and with Supplier's written approval within 7 days of delivery, at no cost to Supplier, unless delivered as the result of an administrative error by Supplier, in which case Supplier will bear the cost of return;

(ii) the Goods are accompanied by a dispatch note stating Supplier's original invoice number and reason for return; and

(iii) the Goods are returned in an unsoiled, undamaged and resalable condition in their original packing and unopened.

(d) Customer must not return any Goods to Supplier unless it has complied with the two clauses immediately above and has done all things necessary to permit Supplier to examine the Goods to Supplier's satisfaction within that period and paid any re-stocking fee specified by Supplier.

6. DELIVERY AND STORAGE

(a) All quoted delivery or consignment dates are estimates only. Supplier is not obliged to meet such dates and will not be liable to Customer by reason of delays caused by any reason whatsoever.

(b) Supplier is deemed to have delivered the Goods when the Goods are made available to Customer for physical collection by or on behalf of Customer at Customer's nominated delivery point (Delivery). Any unloading or loading shall be Customer's responsibility, unless Supplier otherwise agrees in writing.

(c) Supplier may deliver the Goods by instalments (where, in Supplier's opinion, this is reasonable) and issue interim invoices to Customer.

(d) Without limiting any other provision of the Agreement, failure by Customer to pay any instalment, or any other amount when due, will entitle Supplier to withhold or delay delivery of any remaining Goods ordered.

(e) If Customer is unable to collect the Goods at Customer's nominated delivery point on the delivery day, Supplier 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 Customer must pay or reimburse all costs and expenses of storage, insurance, demurrage, handling and other charges associated with such storage. Notwithstanding Customer's inability to collect the Goods, Delivery is deemed to have occurred.

(f) Customer must not install, store or in any way incorporate the Goods in any aircraft or in any vessel intended to fly or move in or through the atmosphere or space.

(g) Customer acknowledges that it has the sole responsibility to confirm the suitability of the Goods for their intended purpose and that Supplier makes no representation or warranty in this regard.

7. TITLE AND RISK

(a) Title to the Goods shall remain with Supplier until all monies owing by Customer to Supplier for the Goods have been paid in full.

(b) Without limiting paragraph (a) above, Customer acknowledges and agrees to the following:

(i) This Agreement creates and/or provides for an interest or interests in favour of Supplier in the Goods supplied by Supplier under this Agreement which will constitute a security interest in the Goods and the proceeds of sale of such Goods under the Personal Property Securities Act 1999 **(PPSA)**.

(ii) Customer will, upon request by Supplier, enter into a security agreement, in a form provided by Supplier, pursuant to which Supplier will maintain a first priority (or such other priority as Supplier agrees in writing) security interest in the Goods and the proceeds of such Goods. Customer shall act immediately in this regard when requested by Supplier and at Customer's own cost.

(iii) To the fullest extent permitted by law, Customer waives any rights it may have now or in the future to receive a copy of any verification statement or other confirmation related to the interests created or provided for by, or perfected in the manner contemplated by, this Agreement

(c) Until such time as Customer has paid Supplier in full for the Goods, Customer shall:

(i) store the Goods separately and mark them so that they are clearly and easily identifiable as Supplier's property and, if Supplier requests, inform Supplier of the location of the Goods;

(ii) hold the Goods as bailee for Supplier, subject to Customer's right to deal with the Goods in the ordinary course of Customer's business (Bailment);

(iii) indemnify Supplier against any claim arising out of the possession, use or disposal of the Goods by Customer or repossession or attempted repossession by Supplier.

(d) If:

(i) a payment is not made in accordance with the Agreement;

(ii) Customer commits any other breach of the Agreement;

(iii) Customer becomes bankrupt, has an administrator, a receiver or a receiver and manager appointed, goes into liquidation (whether voluntarily or otherwise), or is wound up, dissolved or declared insolvent,

then Supplier may at any time, without notice to Customer and without prejudice to any other rights that it may have against Customer:

(i) terminate the Agreement and the Bailment;

(ii) suspend some or all its obligations to Customer under the Agreement; and/or

(iii) enter upon any premises owned or occupied by Customer where Supplier reasonably believes the Goods may be stored and repossess the Goods (including uninstalling the Goods) without being liable for any damages caused.

(e) If Customer sells the Goods before payment in full to Supplier, or uses the Goods in a manufacturing or construction process of its own or some third party, Customer holds the proceeds on trust for Supplier in respect of those Goods, and must keep such proceeds in a separate account until the liability to Supplier is discharged and must immediately pay that amount to Supplier.

(f) The risk in the Goods passes to Customer at the time of Delivery

Terms and Conditions

8. INSURANCE

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

9. LIMITATION OF LIABILITY FOR GOODS

(a) Other than is provided for in this clause 9, Supplier makes no warranties or representations to Customer.

(b) Supplier warrants the Goods to be free from defects in workmanship and materials under normal use and service for the following periods:
(i) for water and mechanical products, a period of 12 calendar months from the Delivery;
(ii) for detection products, a period of 24 calendar months from the Delivery;
(iii) for suppression products, a period of 12 calendar months from the Delivery,
(each referred to as the **Warranty Period**). This warranty does not cover costs of recovery of the Goods from the site 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.

(c) During the Warranty Period, to the extent permitted by law, Customer's sole remedy with respect to breach of warranties set out in the clause immediately above will be to repair or replace (as Supplier may elect) any such defective Goods at Supplier'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.

(d) For equipment forming part of the Goods, which equipment is not manufactured by Supplier, the original manufacturer's warranty will apply. Supplier's liability for such equipment shall not exceed the liability of the manufacturer.

(e) Supplier makes no and specifically disclaims all representations or warranties that the Goods will be secure from cyber threats, hacking or other similar malicious activity.

(f) In respect of Goods that are not ordinarily acquired for personal, domestic or household use or consumption, the liability of Supplier for a breach of any condition or warranty implied by law is limited at Supplier's option to the repair the Goods, or supply replacement Goods.

(g) Supplier's liability under the Agreement will be reduced by the amount of any contributory loss or damage to the extent caused by Customer's act or omission.

(h) Any warranty claim must detail the basis of the alleged warranty breach in writing and must be emailed to Supplier as follows:
(i) for water and mechanical products: **FSP.CustomerService.ANZ@jci.com**;
(ii) for detection products: **fdp.customerservice.anz@jci.com**;
(iii) for suppression products: **FSP.CustomerService.ANZ@jci.com**.
Supplier will assess the claim and if relevant, issue Customer with a returns authorisation number **(RAN)**. Customer must deliver the goods that are the subject of the warranty claim to Supplier's nominated address as follows:
(i) for water and mechanical products: within 90 days;
(ii) for detection products: within 90 days;
(iii) for suppression products: within 60 days,
of Customer submitting its written warranty claim to Supplier.

(i) Customer acknowledges and agrees that, to the extent permitted by law, Supplier 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, financing costs, production, contracts, business or anticipated savings, business interruption, corruption or destruction of data or other losses arising from viruses, ransomware, cyber-attacks or failures or interruptions to network systems, or for any indirect, incidental, special or consequential loss or damage whatsoever.

(j) Supplier's total liability under any contract and the Agreement shall not exceed the total dollar amount of the Goods purchased by Customer under each contract

10. PROPRIETARY INFORMATION

(a) Customer acknowledges that all Proprietary Information and all right, title and interest therein are the sole property of or licensed by Supplier and Customer shall gain no right, title or interest in the Proprietary Information whatsoever. Customer specifically acknowledges Supplier'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 Customer or any buyer of Customer or otherwise.

(b) Customer must not and must not permit any person reasonably within its control nor procure any person to modify, copy, clone or reverse engineer the Goods, or copy, modify or decompile any of Supplier's documentation relating to the Goods.

(c) To the extent the Goods include any software, any licence to or right to access the software is provided on the terms and conditions for the applicable software product. Customer must not and must not permit any person reasonably within its control nor procure any person to copy, decompile, disassemble, reverse engineer or otherwise derive the source code for any software.

11. EXPORT/RE-EXPORT/RESALE

(a) The Goods supplied are intended for use only in New Zealand, unless Supplier otherwise agrees. If Customer exports or re-exports the Goods, it is Customer's responsibility to ensure that the Goods and the use to which they are put comply with the laws of the destination.

(b) Customer acknowledges that the Goods purchased by Customer may not be sold, leased or otherwise transferred to or utilised by a terrorist organisation, a party listed on any US denied persons or entities list or 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 missile projects, or chemical or biological weapons.

(c) If Customer resells the Goods, it shall not, in connection with their resale, pay or offer to pay, money or any thing of value to any government official, entity or organization, any political party, any candidate for public office, or their employees or relatives, or any other person or entity for the purpose of influencing purchasing decisions or for any other improper purpose.

12. MISCELLANEOUS

(a) The fact that Supplier 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. Supplier must agree in writing to any waiver.

(b) 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 the Agreement, but the rest of the Agreement is not affected.

(c) Supplier shall not be liable for any failure to fulfil or any delay in fulfilling any obligation arising under 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, cyber-attacks, viruses, ransomware, failures or interruptions to network systems, data breaches, fire or explosion, any government action or any other cause beyond Supplier's reasonable control and not as a consequence of Supplier's negligence.

(d) Customer is solely responsible for the establishment, operation, maintenance, access, security and other aspects of its computer network ("Network") and shall supply Supplier secure Network access for providing its Goods. Goods networked, connected to the internet, or otherwise connected to computers or other devices must be appropriately protected by Customer and/or end user against unauthorized access. Customer is responsible to take appropriate measures, including performing back-ups, to protect information, including without limit data, software, or files (collectively "Data") prior to receiving the Goods.

(e) 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.

(f) The Agreement is governed by and must be interpreted in accordance with the laws of New Zealand. Customer unconditionally submits to the non-exclusive jurisdiction of the courts of New Zealand.

(g) Where there is more than one Customer then the liability of each shall be joint and several.

(h) The rights and remedies provided in the Agreement will not affect any other rights or remedies available to Supplier.

(i) Customer shall not assign this Agreement without Supplier's prior written consent.

(j) If Customer is a trustee, then Customer is bound by the Agreement both personally and in its capacity as a trustee.

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