Addressable Fire Indicator Panels

MX1 Fire Alarm System

The VIGILANT MX1 is an innovative, networkable multiple loop analogue addressable fire indicator panel incorporating the latest technology. It complies with AS 7240.2:2004, AS 7240.4:2004, AS 4428.3:2010 and the functional requirements of AS 4428.10:1998 and AS 4428.7:1999. Its support for Tyco MX TECHNOLOGY fuzzy-logic detection algorithms and powerful control functions make it suitable for a wide range of fire protection applications, including those in hazardous areas.

MX1 15U

Note: Optional 3U ASE bracket, 3U T-GEN 50 Mic & switch bracket, and 3U AS1668 Fan Control bracket shown fitted

- Single *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 over fibre, copper or ethernet
- *MX DIGITAL* multi-sensor analogue addressable detector technology
- Field-proven fire detection algorithms
- Bi-directional IR communication with 850 Series Gen6 detectors
- Clear alarm messages on 4-line LCD
- Compact zone LED display
- High level EWIS interface
- Up to 126 AS 1668 Fan Controls
- "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
- 19" Rack Cabinet
- Earth fault supervision
- Fuse supervision
- Windows-based programming tools

MX1 8U

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.

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 or heat detection only.

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 100 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.

MX1 Remote Fire Brigade Panel

(surface mount)

Specifications

	15U Cabinet	8U Cabinet
Material	Mild Steel	
Finish	Powdercoated Titania Ripple	
Dims (HWD)	750x550x211	440x550x211 mm
Weight	25kg	17kg
IP Rating	IP30	IP30

Remote Fire Brigade Panel (FP0991)

Material	Mild Steel
Finish	Powdercoated cream wrinkle finish
Dims (HWD)	220x380x56 mm Surface mnt 220x380x21 mm Flush mnt
Weight	3.8kg
IP Rating	IP30

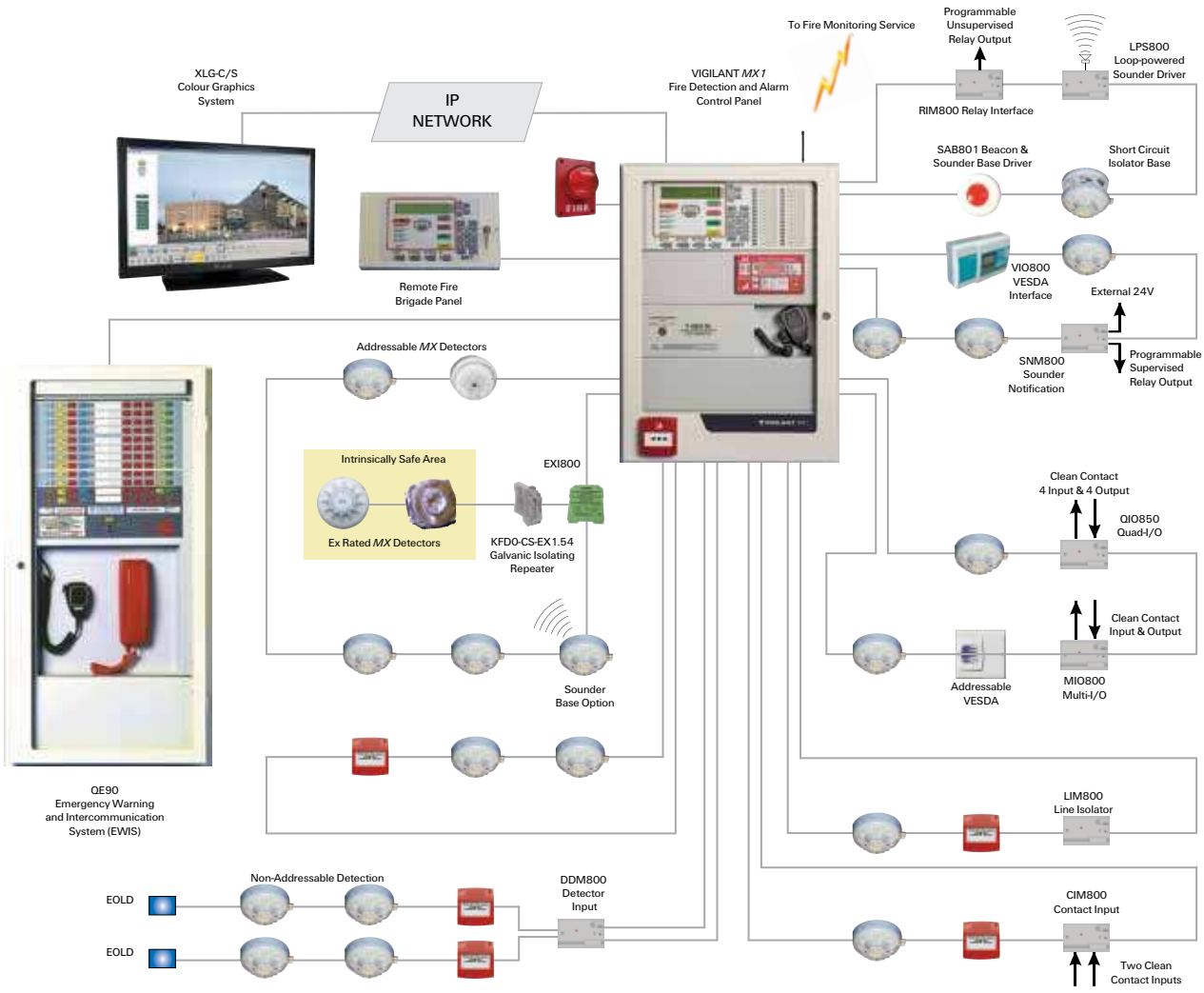
Part Numbers

FP0927	*MX1* 15U 3U ASE bracket
FP0928	*MX1* 15U 3U WA/Cube ASE bkt
FP0948	*MX1* 15U 3U Blank
FP1040	*MX1* 8U 3U Blank
FP1030	*MX1* 15U Empty Cab c/w Window
FP0950	*MX1* Loop Card Kit
FP1002	LED Disp Ext kit (incl. LM0291,LM0339)
FP0991	*MX1* Remote Fire Brigade Panel
FP0996	*MX1* 4U 19in Rack Mounting Remote Fire Brigade Panel
FP1031	*MX1* 15U, Empty Cabinet, Blank Door, Titania
FP0698	T-GEN 50, 3U Brkt incl. PA0766
FP1056	*MX1* 3U 12-way AS 1668 Fan Control Module
FP1057	*MX1* 2-way AS 1668 Cntrl Bd Exp
LM0076	Programming Cable DB9F-DB9F Null Modem
ME0457	4U Door for 5xFP1002 LED Disp Brd
FA2515	Door Lock Catch/Switch Bracket

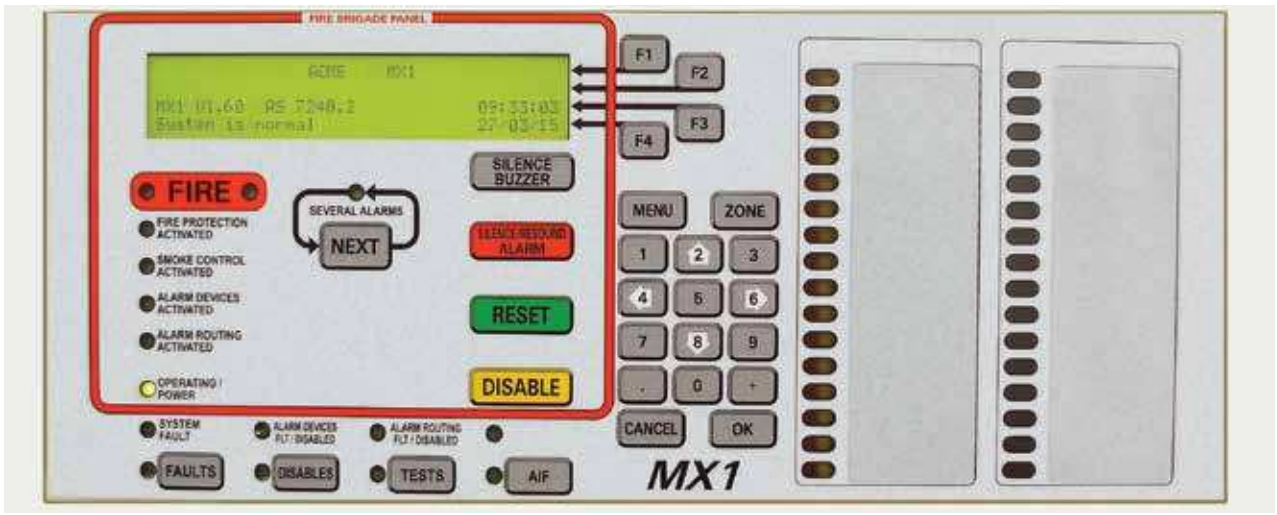
LED Displays - Refer to Page 61
Spares - Refer to Page 121

Approvals

MX1 is certified to AS 7240.2:2004,
AS 7240.4:2004: "Fire detection and alarm systems", AS 4428.3:2010: "Fire detection, warning, control and intercom systems - Control and indicating equipment - Fire brigade panel"
AS 4428.10:1998: "Fire detection, warning, Control and intercom systems - Alarm investigation"
ActivFire Listing Number afp-2320



MX1 System Diagram



MX1 Control Panel Layout

Addressable Fire Indicator Panels

MX4428 Fire Alarm System

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.

ActivFire Listed afp-1446
FPANZ Listed VF/117

The VIGILANT MX4428 is an intelligent distributed multi-processor fire alarm and fire protection control system, which combines both analogue addressable and conventional (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.

Dimensions
Cabinet Dimensions (HWD)
MX4428

FP0821	15U - 750 x 550 x 211 mm - 21kg
FP0487	680 x 470 x 167 mm

Part Numbers
Panel

FP0821	MX4428 master, LCD, 5A,15U, no LEDs, no responders
FP0487	Loop Booster Unit 1901-36

Options

FP0475	Display Ext. Kit incl 0.5m FRC (not 1st disp.)
FP0545	Printer option kit 1901-112 (comprises PA0749, LM0102, LT0176)
FP0546	Printer DPU414 (also require FP0545)
FP1002	*MX1* style Disp.Ext.Kit (FP1002/LM0291/LM0339)
SU0175	Single Paper Roll for FP0546
FP0586	Protocol Translation Module 1942-1
FP0771	I-HUB networking kit
FP0827	Standard Network Kit (comprises hardware, LT0143, PA0773, LM0172)
FZ3031	FP0475 Kit incl 1.2m FRC (for 1st display)
ME0258	1U Document Tray (135 deep)
ME0259	1U Document Tray (310 deep)
ME0457	4U Door for 5 FP1002 Display Boards
KT0199	3U Centaur ASE Bracket
FZ9028	3U WA/Cube ASE Bracket & Loom
KT0419	3U Self-Adhesive A4 Document Holder
KT0469	3U Self-Adhesive A5 Document Holder
LM0041	Programming Cable DB9 to CIE

LED Displays - Refer to Page 61
Spares - refer to page 120

Responders

FP0507-5	EOL002B Pulsing EOL (pkt 5)
FP0529	Empty ADR/MPR box
FP0575	Multi Prot. Resp (MPR)1901-141
FP0755	ADR 4mA det. current 1901-116
PA0453	RRM PCB assy 1901-15
PA0473	IOR PCB 32 in/32 out 1901-72
PA0713	MPR PCB assy 1901-141
PA0815	ADR-M 4mA 15V MCP 1901-116
FP0824	MXP Responder in box
PA0893	MXP PCB only 1901-213

Blank Panels (include 19" rack mounting hardware)

FZ9007	1U Blank Panel (45mm)
FZ9006	2U Blank Panel (89mm)
FZ9005	3U Blank Panel (134mm)
FZ9004	4U Blank Panel (178mm)
FZ9015	5U Blank Panel (223mm)
FA2017	5.5U Blank Panel Acrylic (244mm)
FZ9003	6U Blank Panel Acrylic (267mm)
FZ9016	6U Blank Panel (267mm)
FZ9002	7U Blank Hinged Inner Door (312mm)

Cabinets - Refer to Page 64

MX4428SL Single Loop Addressable Panel with T-GEN 50 Fitted

Note: Optional 3U T-GEN 50 Mic & switch bracket and ASE shown

The VIGILANT MX4428 Single Loop panel is a competitively-priced fire detection and alarm system that targets small to medium sized applications.
It combines the latest *MX DIGITAL* analogue addressable technology, pioneered by Tyco, with intelligent fire detection algorithms, powerful control programmability, and 50W tone generator occupancy warning system. As standard, the MX4428 Single Loop panel comes with an *MX* Protocol Responder fitted that 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. It also includes a prewired brigade interface complete with mounting bracket for Centaur ASE (FP0871) / WA/Cube ASE (FP0872). An optional kit which includes public address, microphone and switch bracket to add PA facility to the pre-installed tone generator is also available. ActivFire Listed afp-1446

Part Numbers
Panel

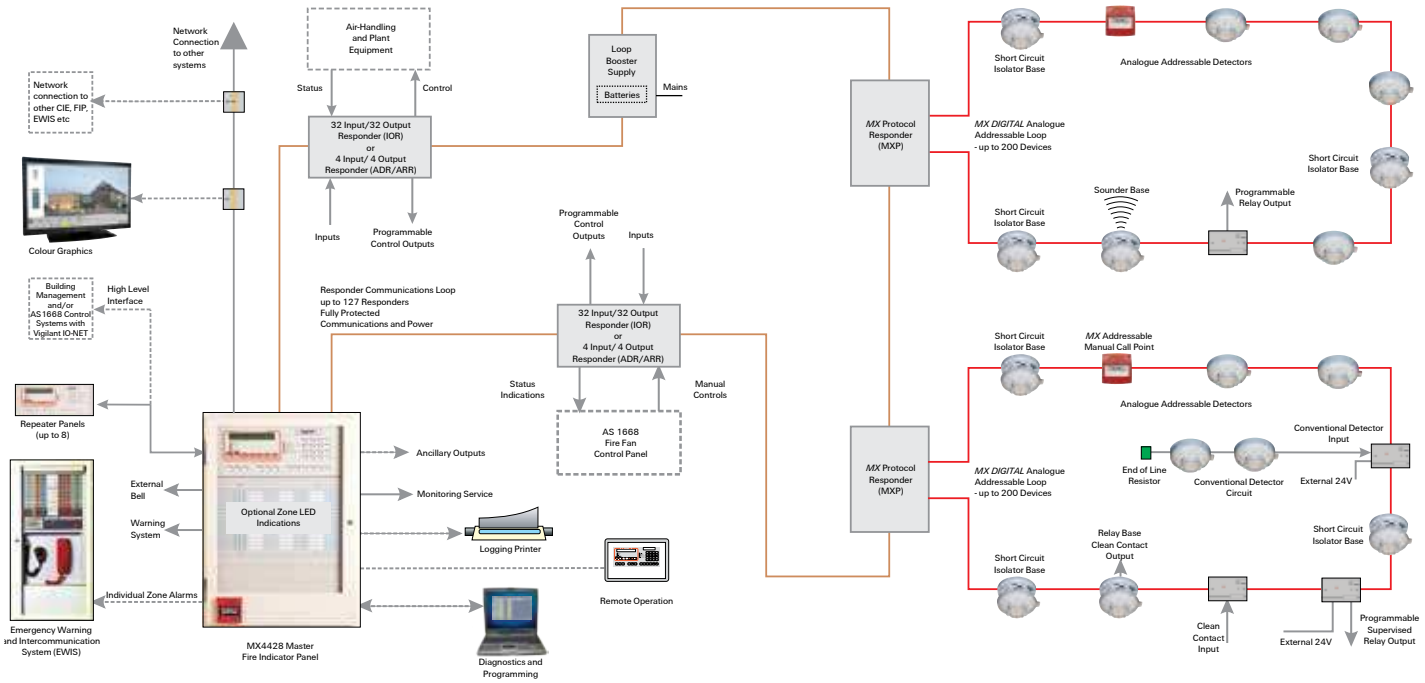
FP0871	MX4428, single loop panel c/w ASE brkt
FP0872	MX4428, single loop panel c/w WA/Cube ASE bracket

Options

FP0827	Standard Network Kit (incl. hardware, LT0143, PA0773, LM0172)
FP0771	I-HUB networking kit
ME0437	1955-41 T-GEN 50 3U mic & switch brkt
KT0469	3U Self-Adhesive A5 Document Holder
SF0273	Factory default database

Dimensions
Cabinet Dimensions (HWD)

FP0871	15U - 750 x 550 x 211 mm - 21kg
FP0872	15U - 750 x 550 x 211 mm - 21kg



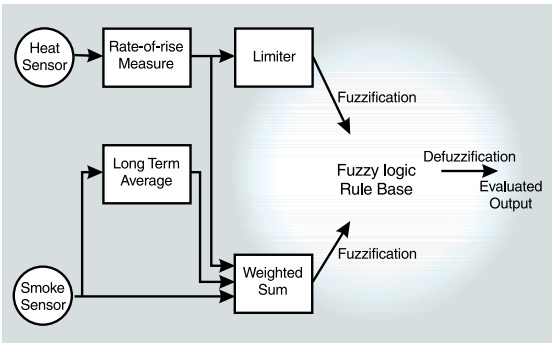
MX4428 System Diagram

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 gear plates (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 M.S.
Cabinet Finish:	Baked epoxy powdercoat, Cream Wrinkle BFF998CW					