PORTABLE FIRE EQUIPMENT | FIRE PROTECTION SYSTEMS | FIRE SYSTEM INSTALLATIONS | FIRE SYSTEM SERVICING | COMPLIANCE | FIRE SAFETY TRAINING | MAJOR PROJECTS

VIGILANT *MX 1* Fire Alarm System

VIGILANT *MX 1*
Fire Detection and Alarm System

In-built Intelligence

When protecting small to medium size facilities, the VIGILANT *MX 1* fire detection and alarm system is the panel of choice. It is simple to use, cost-effective, and offers a range of advanced features commonly found in only large and complex systems.

The VIGILANT *MX 1* supports a wide range of fire protection devices, in particular those from the patented *MX TECHNOLOGY* range.

The *MX 1* supports *MX VIRTUAL* analogue addressable detectors such as the 814PH (Smoke & Heat) and 814CH (CO & Heat).

Each of these detectors incorporate dual sensors which may operate independently, or be used in heat enhancement mode for faster response to a flaming fire, allowing optimum detection with the best nuisance alarm suppression.

The available detection modes include:

· CO plus Heat detection,
· Heat-enhanced CO detection
· Smoke plus Heat detection
· Heat-enhanced Smoke detection
· CO detection only
· Smoke detection only
· Heat detection only

The *MX 1* includes one *MX* loop and through the addition of *MX* loop cards, can be expanded to 8 loops in total.

Up to 250 *MX* devices may be connected per loop, with each device supporting several sub-points that may be mapped to different zones and/or control functions.

For specific applications, single-sensor *MX* analogue addressable ionisation and photoelectric smoke detectors, high sensitivity smoke detectors (VESDA), heat-only detectors, flame detectors and intrinsically safe devices are also available.

The *MX DIGITAL* communications protocol used on the addressable loops is designed to provide high reliability and fault tolerance, with operation possible over many cable types. This often permits system upgrades using existing cable.

Protecting People & Property

WORMALD
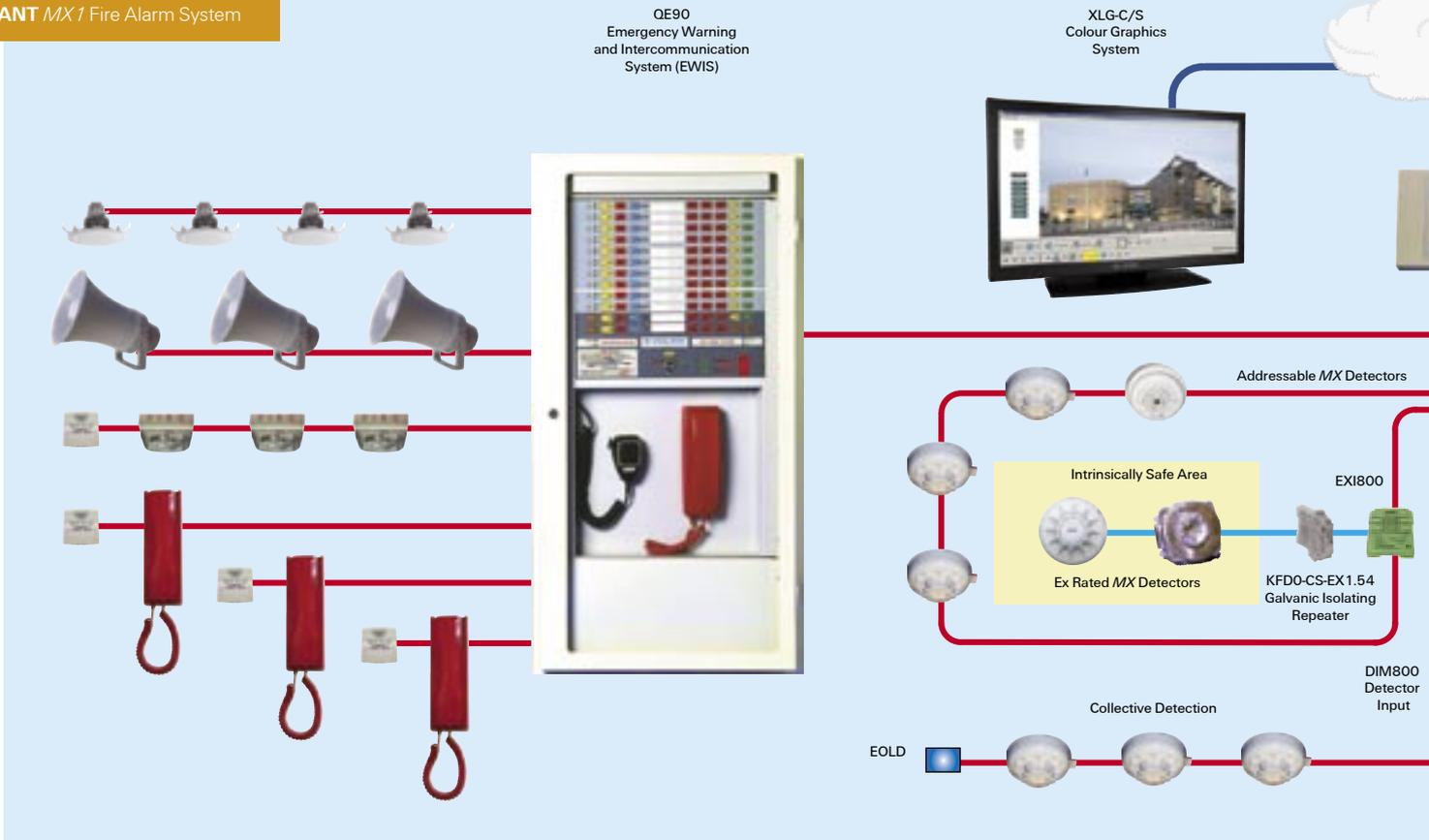
Typical Fire Detection System Diagram using MX1, QE90 and XLG-C/S Colour Graphics

Easy to Operate

Operation is straightforward as the VIGILANT *MX1* 4-line x 40 character alphanumeric display provides clear alarm information including zone and point numbers, type of alarm, and a description of the alarm location. The display allows easy scrolling through the 99 event alarm buffer. Current faults, disabled zones/points, and tests in progress can also be separately recalled. A non-volatile history log stores the previous 999 events, which can be recalled to the LCD.
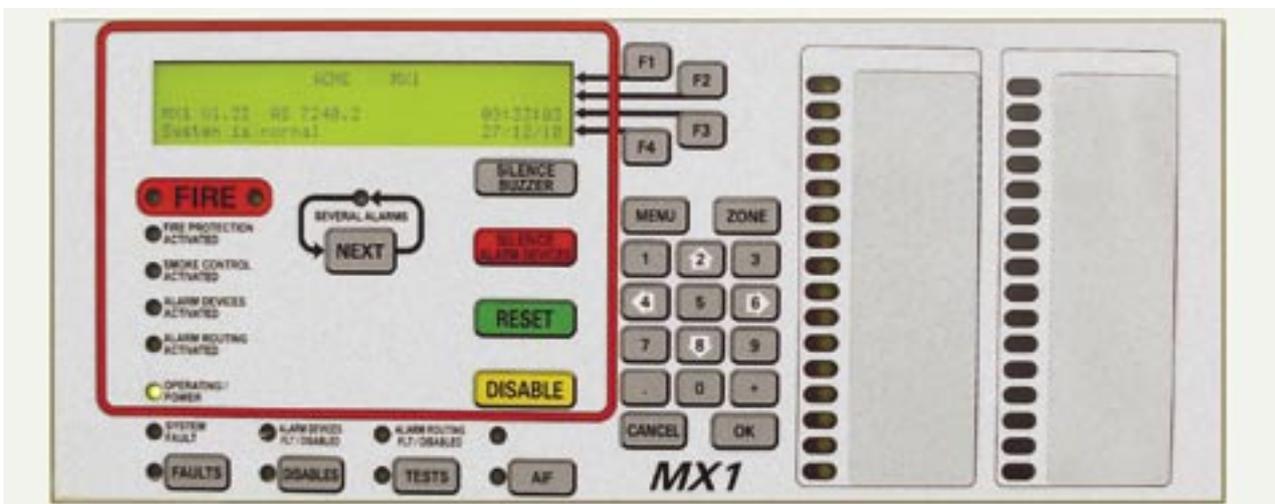
AS 7240.2 'Fire Detection and Alarm Systems - Control and Indicating Equipment' specifies three levels of access for the operator:
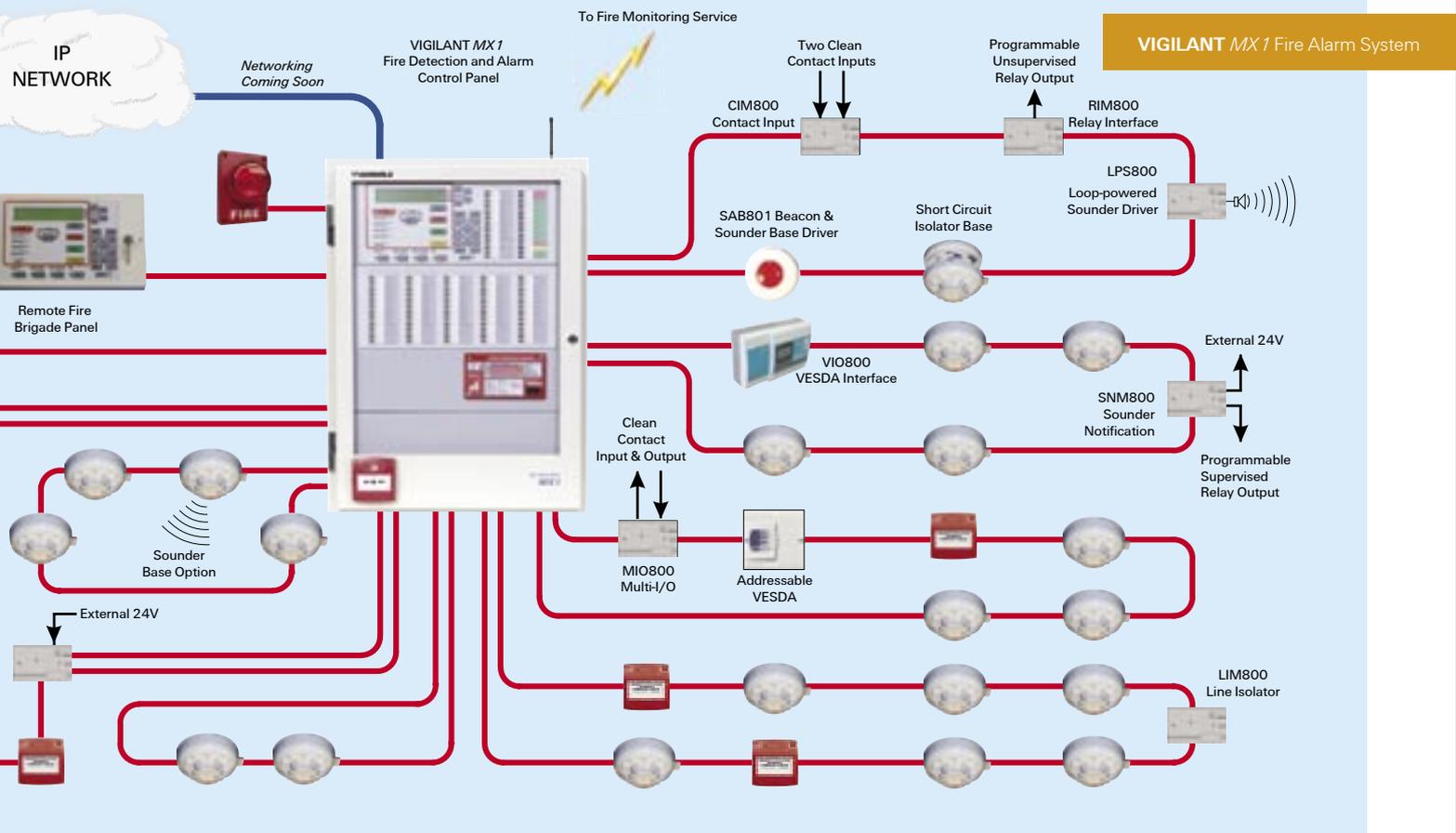
Level 1 is limited to viewing alarms and faults displayed on the LCD. Keyboard access is not available.

Level 2 requires a 003 key to open the cabinet door, which also enables the user interface. At this access level, the operator can silence the buzzer; silence or re-sound the alarm devices; reset, disable and test zones; view low level system status; disable and test points; carry out battery, display, and power supply tests; change the address of loop devices; and perform all other functions not otherwise restricted to level 3. When the cabinet door is closed, operator access returns to level 1.

Level 3 requires a user code and PIN, and allows the operator to re-start the system, switch between the two installed site-specific configuration databases, place the system into Commissioning Mode, and disable the buzzer.

Protecting People & Property

IP NETWORK

Networking Coming Soon

VIGILANT *MX1* Fire Detection and Alarm Control Panel

To Fire Monitoring Service

Two Clean Contact Inputs

CIM800 Contact Input

Programmable Unsupervised Relay Output

RIM800 Relay Interface

LPS800 Loop-powered Sounder Driver

SAB801 Beacon & Sounder Base Driver

Short Circuit Isolator Base

Remote Fire Brigade Panel

VIO800 VESDA Interface

External 24V

SNM800 Sounder Notification

Programmable Supervised Relay Output

Clean Contact Input & Output

MIO800 Multi-I/O

Addressable VESDA

Sounder Base Option

External 24V

LIM800 Line Isolator

Easy to Program

The task of programming the *MX1* is made straightforward by SmartConfig, a Windows-based* programming tool with templates that preset most of the settings to the correct values. Using commands via the front panel keypad, the *MX1* lists all the devices found on a specific *MX* loop, and will detect and help identify the location of a break or short in that loop. The list of *MX* points can be captured and imported directly into SmartConfig, further streamlining the programming and pre-commissioning process.

Selectable profiles such as Residential, Day/Night, Flow Switch, etc., simplify the programming of complex functions and further enhance the *MX1*'s programmability.

Powerful user-programmable Boolean logic with special functions and timers; programmable outputs for warning devices; and ancillary controls makes the *MX1* configurable to almost any fire detection requirement.

The panel's site-specific database is duplicated, reducing downtime and increasing reliability.

Detection algorithms can be programmed for each detector to allow the detection capabilities of the system to be further optimised.

MX FASTLOGIC is a fuzzy-logic expert rule-based algorithm applied to the photoelectric smoke signal with optional heat enhancement. It is designed to discriminate between the smoke and temperature patterns of real fires and typical causes of nuisance alarms.

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

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 highlight the need for maintenance to be carried out
- Heat sensor able to be programmed to act independently as a heat detector.

Easy to Maintain

Whilst the *MX1* requires minimum maintenance, it has been designed to allow the requirements in AS 1851 'Maintenance of Fire Protection Systems & Equipment' to be carried out efficiently. The in-built battery testing and power supply monitoring will identify any battery problems, should they occur.

The sensitivity and condition of smoke and CO detectors can be displayed or downloaded to a PC. Outputs can be operated from the keypad to test interfaces to other systems.

To simplify replacement of dirty or faulty detectors, an un-addressed replacement is automatically addressed when it replaces a disabled detector on the *MX* loop.

An Auxiliary *MX* Loop connection is provided on the *MX1* Controller to check and re-address detectors.

The Auto Reset mode allows detectors to be tested by one person. Commissioning mode speeds up system testing by bypassing filtering delays and algorithms. Individual detectors can be easily located in the field by forcing the LED indicator on.

Protecting People & Property

Specifications

System Capacity

Analogue Loop	*MX DIGITAL*, 2-wire, 2km max., O/C tolerant, S/C isolators
Addressable points	Up to 250 per *MX* Addressable loop, 8 loops in total
Zone indications	Optional, up to 32 using control panel, 192 total with extra modules. Separate alarm LED, combined Fault/ Disable LED. Up to 999 zones in total.
Remote FBP	One

Physical

Cabinet Style	15U 19 inch Rack, Ingress Protection IP30
Cabinet Size (mm)	750H x 550W x 210D
Cabinet Material	1.6mm Mild steel, zinc coated
Finish	Baked epoxy powdercoat finish Cream Wrinkle BFF998CW
Style	Surface or inset wall mounting. Outer door & window covering keyboard & displays
Shipping Weight	24kg (20kg unpackaged)
Temperature	-5°C to +45°C operating (tested to +55°C, as per AS 7240.2)
Humidity	Up to 95% RH at 40°C (non-condensing)

Power Supply

Mains Supply	230Vac (192-253Vac), 1.2A rms, 50/60Hz
Internal Battery	2 x 12V SLA up to 40Ah
Internal p.s.e.	27.3V (nominal), 5A regulated, temperature compensated
Battery Monitoring	Battery low/ fail, supervision of battery connection and condition
Fused Outputs	3 x +VBF, +VRZDU, +VNBF, all fused 3A (slow-blow), supervised
Current Consumed	150mA (Base panel, system normal)

Inputs

MX Loop	Up to 250 *MX* detectors and input/ output modules per loop. Total of 2000 *MX* devices
MX Loop Card(s)	Optional card adds up to 250 *MX* detectors and I/O modules
Other Inputs	Two programmable supervised, transient protected inputs at control panel for sprinkler evacuation, etc. Unused relay supervision inputs may also be used for external wiring. Sixteen programmable unsupervised inputs available for internal (cabinet) use

Outputs

Monitoring Service	Alarm, Fault, Disable: clean-contact changeover relays. ASE port: 2-wire connection to Centaur™ ASE
MX Loop	Up to 1A loop power. The 5A p.s.e. will provide up to 3A total *MX* Loop power
Ancil. Relay 1	2A, 30Vdc resistive. Programmable operation; pre-configured for T-GEN 50
Ancil. Relay 2	2A, 30Vdc resistive. Voltage free changeover contacts or load-supervised switched 24V. Programmable operation
Ancil. Relay 3	5A, 30Vdc resistive. Voltage free changeover contacts or reverse polarity supervision of diode isolated loads. Up to 3 branches. Programmable operation. Suitable for Occupant Warning System (OWS) with Mini-Gens/Strobe Driver
GP Output1 & 2	500mA transistor pulldown (1.1V). Transient protected for field wiring. Programmable operation, load supervised. Can be used for supervised inputs
Other Outputs	16 x 50mA unsupervised unprotected transistor pulldown (1.1V). Programmable operation for panel indicators or relay outputs
RZDU Comms	Comms port for connection to repeater panels or HLI to QE90 and/or IO-NET
Printer/ Program	2x RS232, male DB9 configured as DTE

Device Compatibility

MX1 is compatible with the range of Tyco *MX* analogue addressable detectors and I/O modules including:

- 814PH Photo/Heat detector
- 814P Photoelectric detector
- 814CH CO/Heat detector
- 814H Heat detector
- 801F Flame detector
- S271i+ I.S. Triple IR Flame detector
- S271f+ Triple IR Flame detector
- 801Ex series I.S. detectors & MCP
- IF800Ex I.S. Single Input Device
- VLC-800MX VESDA Smoke detector
- CP820 Manual Call Point
- CIM800 Contact Input Module
- DIM800 Dual Detector Input Module
- LPS800 Loop Powered Sounder driver
- SAB801 Sounder/Relay base driver with LED Beacon
- SAM800 Sounder/Relay base driver
- MIM800 Mini Input Module
- MIM801 Mini Input Module (NC)
- MIO800 Multi-I/O Module (3 in, 2 out)
- RIM800 Relay Interface Module
- SNM800 Sounder Notification Module
- LIM800 Line Isolator Module (3 port)
- 5BI Isolator base
- 814RB Relay base
- 802SB Sounder base (Loop powered)
- 901SB Sounder base (external power)

Approved

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

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