

# MINERVA® Marine

## MX T2000 Panel Range

### Features:

- Enhances fire detection and eliminates unwanted alarms using "fuzzy logic"
- Assists fire fighting and training by providing on-screen risk management information
- Helps fire crews by giving smoke density and temperature readings in the affected areas
- Simplifies maintenance by pin-pointing faults
- Enables remote fault finding to be carried out
- Flexible interfacing with graphic management systems

### MINERVA® Marine Panel Range

MINERVA® MX is a comprehensive range of fire controllers designed and built to BSEN ISO9001/2 and EN54. An advanced proven microprocessor based system, MINERVA® MX provides conventional and digital addressable detection for new, refurbished and refitted detection systems.

A wide range of detectors and ancillaries makes MINERVA® MX suitable for applications from general cargo vessels to large passenger vessels and offshore installation.

### What should you expect of your fire detection system?

In broad terms: cost effective reliability and flexibility. In today's vessels under today's conditions you should also be looking for ease of operation, flexible programming, precise fire source pin-pointing and the kind of circuitry and sensitivity which ensures rapid activation in the event of a fire.

### MINERVA® MX meets all these expectations as a matter of course

T2000 is a comprehensive range of fire controllers designed and built to BSEN ISO9001/2 by the world's leading fire and security company. The T2000 has been approved by all the major marine authorities.

An advanced proven micro-processor based system MINERVA® MX provides conventional as well as addressable detection at the price of today's conventional systems.



The decision to sound the alarm is made at the controller allowing adjustments and compensations to be made for changes in environmental conditions. In short, maximum security whilst minimising the risk of false alarms.

Modular in design MINERVA® MX provides economical fire detection for small vessels but is also flexible enough to implement the complex event procedures required in larger ones. Detectors are controlled in groups of up to 240 zones all software configurable, so avoiding the expensive need to hardwire each zone back to the control panel. Further savings are made possible by harnessing the power of the latest micro-processing technology to enable a single loop of two-core cabling to carry both detection and command signals.

Backwards compatibility is also achieved by using an ancillary module which allows existing fire systems to be updated and extended cost effectively, utilising existing wiring where possible and with minimal disruption. Other ancillary modules offer even greater system flexibility: short circuit sensing isolation ensures the T2000 continues in operation, even if a wiring fault occurs. Local sounder activation further reduces wiring costs and switch monitoring allows easy interface to a vessels machinery control system.

Further flexibility and installation savings can be made using the loop power T2000 options. Loop powered T2000 panels allow sounders to be powered from the same loop wires that carry communications and power to the detectors and other ancillaries.

## MINERVA® MX Key Functions

Thanks to powerful software each zone can be given a tailor-made response text message to help locate the source of a fire. Software configuration and reconfiguration can be carried out on site, with minimum disruption and the avoidance of system down time. Correct execution of the software is ensured by twin micro-processors that perform watchdog functions on each other.

MINERVA® MX sounders can be set for either continuous, pulse, or a combination of two tones via the system software.

To aid the rapid location of fire, remote repeater panels or geographical mimics can be connected to the controllers for greater monitoring convenience, as can visual display units.

The displayed temperature and smoke density reading allows the operator to quickly visualise the situation and select the appropriate procedures to be implemented.

For management information, a printer can also be connected to the T2000 providing a hard copy of events. The T2000 has the capacity to store up to 3000 events in its memory. Finally a weekly test reminder facility can be built in, while a walk-test facility allows truly cost-effective systems checking by a single operative.



### T2000

The T2000 panels are intelligent EN54 approved and marine approved sub-panels, which can be networked.

A test report detailing compliance to naval test requirements for Shock, Vibration & EMC (NES814, NES 1004 Iss 2 & DefStan 59-41) is available. The panel can also be ordered with a factory test certificate and label which references this test report.

The T2000 panel is supplied with 2 loops and is expandable to eight loops using additional loop expansion cards. The panel will support up to 1000 addressable devices.

The PSB800MK power expansion kit can provide additional power for the extra loops.

The panel consists of a strong stainless steel or mild steel enclosure containing:

- PSB800 5A 24Vd.c. battery backed power supply and loop booster to EN54:pt.4
- FIM800 field interface PCB incorporating two MX DIGITAL loops

- CPU800 32 bit processor and memory card
- Optional network card, additional loop card(s) and remote diagnostic modem
- Optional IOB800 input/output expansion card mounted on the PSB800

The panel has a strong cast aluminium front door, which incorporates a modular user interface that fully complies with EN54:pt.2. The user interface incorporates the ODM800 operator display module with a 16 x 40-character backlit LCD display, simple alphanumeric keypad and 5 softkeys. The OCM800 module provides all mandatory operator control keys and LED functions including Manned/Unmanned switching. Two control keys and 2 indication LEDs are provided for vessel-specific functions.

Control keys and LEDs are labelled in English according to the default approved functionality. The slide in decals can be reversed and alternative text added.



### T2000 Repeaters

The MINERVA® MX full function repeater is an EN54 Marine approved repeater with optional addressable EN54:Pt.4 power supply. The repeater consists of a stainless steel or mild steel backbox and cast aluminium front door which incorporates the ODM800 operator display module with a 16 x 40-character backlit LCD display, simple alphanumeric keypad and 5 softkeys. The OCM800 operator control module provides all mandatory operator control keys and LED functions including Manned/Unmanned switching. Two control keys and 2 indication LEDs are provided for vessel-specific functions.

Control keys and LEDs are labelled in English according to the default approved functionality. The slide in decals can be reversed and alternative text added.

The back box contains the PSM800 power supply and space for 2 x 7 Ah batteries to provide 72 h backup.

The T2000 repeater with Power Supply is connected to the Panel via the remote bus (RS485, 1200 m distance). A maximum of 7 repeaters (including one MX REMOTE repeater) can be linked to each T2000 panel and can provide full repeater functions for all panels on the system.

The operator control module (OCM800) can support up to 80 inputs and outputs in the form of LED annunciators, IOB800 input/output modules, XIOM universal I/O modules or the XIOM 800 LED mimic module.



## T2000CV

The T2000 panels are intelligent EN54 approved and marine approved panels, designed for commercial vessels where a large networked system is not required.

The T2000CV panel provides three loops supporting up to 750 addressable devices

The panel consists of a mild steel enclosure, containing:

- PSB800 5A 24Vd.c. battery backed power supply and loop booster
- FIM801CV field interface PCB incorporating one MX DIGITAL loop
- CPU800 32 bit processor and memory Card
- XLM800 loop expansion card containing two MX Digital loops
- Optional remote diagnostic modem
- Optional IOB800 input/output expansion card mounted on the PSB800

The panel has a strong cast aluminium front door, which incorporates a modular user interface that fully complies with EN54:pt.2. The user interface incorporates the ODM800 operator display module with a 16 x 40-character backlit LCD display, simple alphanumeric keypad and 5 softkeys. The OCM800 operator control module provides all mandatory operator control keys and LED functions including Manned/Unmanned switching. Two control keys and 2 indication LEDs are provided for vessel-specific functions.

Control keys and LEDs are labelled in English according to the default approved functionality. The slide in decals can be reversed and alternative text added.



## T2000R CV indicating repeater

The T2000R CV indicating repeater is an EN54 Marine approved repeater (24Vdc Supply).

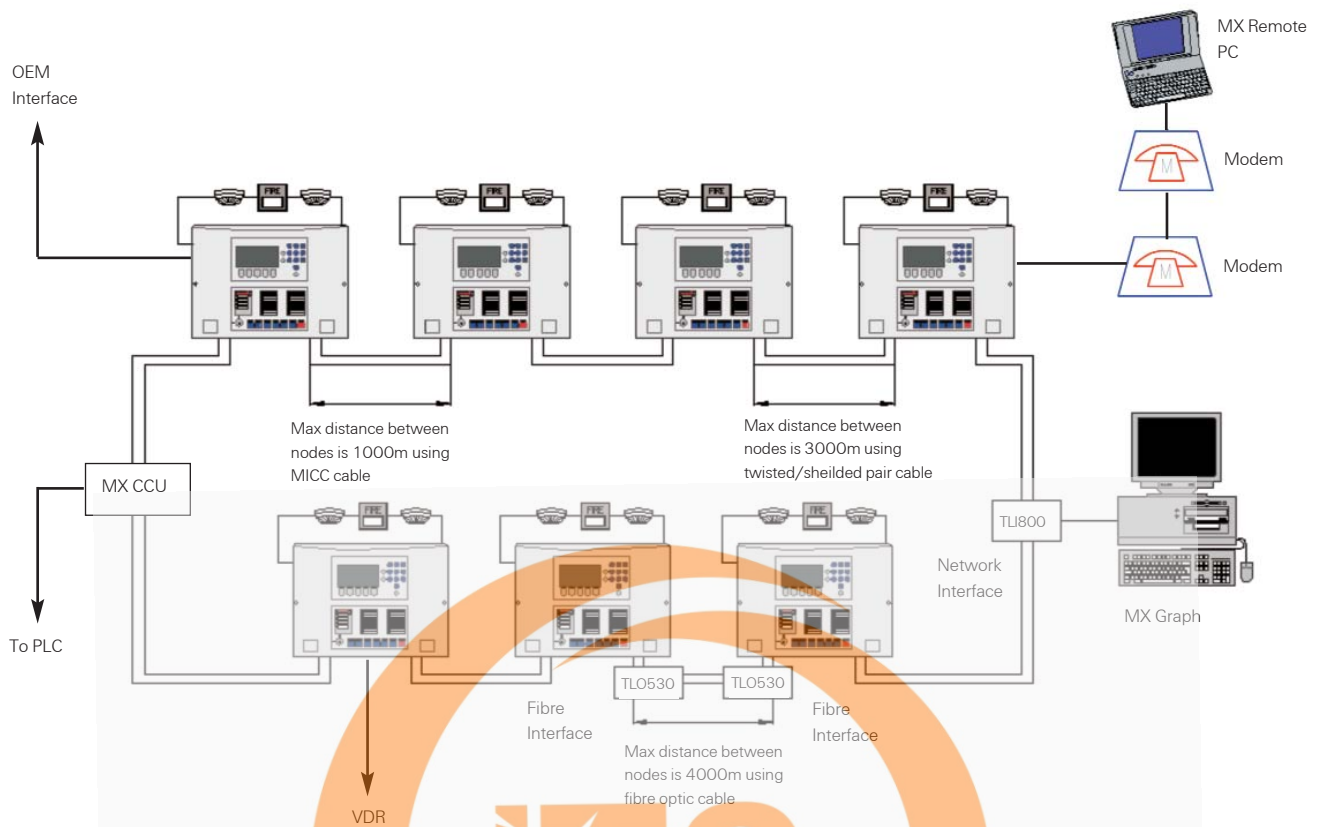
The repeater consists of a mild steel backbox and cast aluminium front door which incorporates the ODM800 operator display module with a 16 x 40-character backlit LCD display, simple alphanumeric keypad and 5 softkeys.

Operator controls comprise a panel buzzer silence button, status LED's are provided for fire, fault and power on indication.

The T2000R CV indicating repeater is connected to the Panel via the remote bus (RS485, 1200 m distance). A maximum of 7 repeaters (including one MX REMOTE repeater) can be linked to each control panel and can provide repeater functions for all panels on the system.

The repeater can support up to 80 inputs and outputs in the form of LED annunciators, IOB800 input/output modules, XIOM universal I/O modules or the XIOM 800 LED mimic module.

## Interfacing Options



Up to 99 MX/T2000 sub-panels can be linked together providing unrivalled design flexibility (T2000 Only).

### Interfacing to PLCs

An industrial standard protocol is available to allow the MX/T2000 to communicate with PLCs. This is especially useful in offshore type installations (T2000 Only).

### Remote Diagnostics

Reduces the cost of service and fault finding by using a trained engineer in an office to remotely identify faults and solutions via our unique MX Remote.

### Graphical Management Systems

Provides intuitive user friendly graphics for easier incident management on large passenger vessels (T2000 Only).

### Peer-to-Peer Interface to 3rd Party Systems

Unique protocol to allow development of peer-to-peer interface (T2000 Only).

### Voyage Data Recorder (VDR)

T2000 and T2000CV panels provide an output for interfacing to a VDR, the interface complies with the requirements of IEC 61162-102.



## Technical Specifications

### Mechanical

Dimensions (WxHxD)	Controller 440 x 320 x 135mm
Colour	Dawn Grey (Housing) Pantone - 431C (Modules)
Installation	Surface or Semi-flush Mounted

### Environmental

Operating Temp. Range	_ 8°C to + 55°C
Storage Temp. Range	_ 20°C to + 70°C
Humidity	Up to 95% RH (Non-condensing)
Housing Protection To	IP42

### Electrical

Mains Supply	120V-240Vac + 10% / -15% at 50/60Hz
Secondary Supply	24V d.c. Nominal

### T2000R CV Indicating Repeater

Input Voltage	24V d.c. Nominal
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### Input

T2000 Panel	
No. of Loops	2, expandable to 8
Addresses per panel	1000 Max

### T2000CV Panel

No. of Loops	3
Addresses per panel	750 Max

### Output

#### T2000 Panel & T2000CV

Display	240 Zone 16 x 40 Character
Sounder	There are two separate monitored sounder outputs each rated at 2A.
Alarm	Fire _ Relay output rated at 30V d.c. at 1.0A volt free c/o. Fault _ Relay output rated at 30V d.c. at 1.0A volt free c/o.

## Detector Bases

801IB	Isolator Base
801RB	Relay Base
802SB	Loop Powered Sounder Base
5B	5" Universal Base

## Command Modules

SNM800	Sounder Module
RIM800	Relay Module
CIM800	Contact Monitor Module
SB520	Sounder Booster Module
TM520	Timer Module
DIM800	Conventional Detector Module
APM800	Power Supply Monitor Module
MIM800	Mini Input Module
CP820M	Indoor Callpoint
CP830M	Outdoor Callpoint
MIO800	Multi-Input Output Module

## 8 Loop Support (T2000 Only)

SB800MK	8 Loop Power Expansion Kit
XLM800	Loop Expansion Card (Loops)
T2000	8 Loop Mounting Kit