

**MINERVA
MARINE**

T1000 INTELLIGENT CONTROL PANELS



Fire systems

Benefits

- Developed for Vessels with less than 300 Detectors
- Approved by all Major Marine Authorities
- Customer friendly, multi language information on LCD display
- Comprehensive fault diagnostics
- Executive actions for Fire Doors, Local Extinguishant Release, Fans/Blowers
- Interface to other shipboard Control/Graphic Systems
- One man installation

Features

- 8 and 16 zone Panels
- Wide range of Minerva Marine approved Detectors
- 4 monitored Sounder outputs up to 4A
- 4 monitored Relay outputs
- 3 programmable auxiliary inputs
- 3 levels of alarm discriminations per zone
- Programmable cause and effect

Introduction

The range of T1000 panels are state-of-the-art intelligent fire panels, which provide many of the features normally only found on more expensive analogue addressable panels. The panels are supplied in 8 and 16 zone versions. Each detection zone can support up to 32 conventional detectors or 24 if detector removal monitoring is used. Alternatively an unlimited number of manual callpoints can be used on each zone.

Overview Of Operation

The panel provides detection zone monitoring and sounder output monitoring. Detection zones are monitored for detector removal as well as open and short circuit fault conditions. The panel also provides common fault and four programmable changeover relay outputs rated 1A @ 24V dc.

The common fault relay is normally energised and de-energises to signal any zone fault, processor fault, mains failure, battery fault, earth fault and supervised output fault. The four programmable relays can be set to be normally de-energised or energised to signal any zone fire, evacuation alarm, fault, technical alarm or disable condition.

Detection Options

MR601M Optical	An excellent all-round Detector suited to all applications.
MF601M ION Chamber	Ion Chamber Detectors suitable for use where there is invisible smoke so are used for early detection of wood or other carbon based fires.
MD601 Rate of Rise Heat	Used where Smoke Detectors cannot be used e.g. Galleys, Laundries, Drying Rooms
MS302Ex Flame	Used where there is a risk of large flaming fires e.g. Machinery Spaces.
MU601M Carbon Monoxide	The best Detector for early warning without false alarms. Used in life hazard applications e.g. Cabins, Public Spaces.

The T1000 panels' default configuration is set for use with the companies own highly acclaimed internationally approved Lo-pro detector range..

The T1000 panel is also fully compatible with the companies unique MU601 Carbon Monoxide fire detector.

For hazardous applications the panels have been tested with the companies intrinsically safe BASEEFA certified System 601 which includes the M300Ex intrinsically safe range of smoke, temperature and flame detectors (See Note 1).

Plant Alarm Monitoring

Zones on the Panel can also be programmed to monitor Machinery Spaces Fans/Blowers, Fire Doors and Engine Room Fire Dampers.

Auxiliary Inputs

Three additional programmable inputs on the panel can be used for Muster signals, initiation of sounder circuits for indicating class change in educational establishments and providing Remote Reset or Remote Accept signals.

Sounder and Auxiliary Outputs

The panels each have four separately fused and monitored alarm output circuits, suitable for sounder circuits installed as continuous pairs. Each circuit is capable of driving 1A with a total sounder current of 4A.

Four additional non-monitored relay outputs are provided on each panel to provide auxiliary command signals to equipment such as signalling devices. A common fault relay output is also provided.

An optional I/O expansion board can be fitted to the panel. This board has 4 ports. Two of these ports are used for other special application variants of the panel. The two remaining ports can support a 16 digital output and a 16 relay output card. These can be used to drive LED mimics or provide zonal outputs. The outputs can be programmed to respond to one or more alarm type on each respective zone.

The panel also has two 24V DC auxiliary supply outputs which are monitored for fuse failure and both rated at 1A.

Ease of Installation

The panels are designed for one man installation. 20mm cable gland entries are provided from the top, bottom and rear and a removable and reversible hinged lid provides easy access during installation.

The panels have sufficient space internally for two 12V 12Ah batteries which can provide up to 72 hours standby power depending upon the loading of the panel.

User Interface

The user interface is provided through a combination of LEDs and a 2 x 40 character LCD display. The LEDs provide clear indication that a fire, fault, isolate or technical alarm condition is present.

The display also shows the first and last zone in Alarm and Fault.

The user interface provides two rows of user selectable buttons. The first row is used to deal with emergency and alarm situations whilst the second row is used for information enquiries. The first row includes the ability to view alarms, silence, accept, reset and evacuate. The second row provides the ability to view historical alarms, fault conditions, technical alarms and disable conditions.

The LCD display provides a full customer definable text display of the alarm or fault condition whilst also displaying zones in alarm, fault or isolate status. The display also indicates the outputs that have been activated.

Programmable Cause and Effect

The LCD display and keypad allow site configuring of the cause and effect between inputs and outputs and adjusting of other settings. This includes the following functions:

- Selecting zones to detect manual callpoint alarms and/or fire alarms and/or technical alarms
- Selecting which zonal alarm thresholds will trigger which programmable sounder and auxiliary outputs as well as the output pulse timings and fail safe status.
- Determining which types of alarm will trigger zonal outputs or LED mimic outputs
- Selecting the functionality of the auxiliary inputs and outputs and configuration of expansion I/O
- Configuration of the period a mains failure situation must exceed before a mains fault is initiated.
- Configuration of the battery test facility and zone detector removal monitoring
- Configuration of zonal alarm delay timers

Zone Isolate & Sounder Disable

The T1000 allows zones and sounder circuits to be individually isolated. Isolated zones and disabled outputs are indicated on the LCD display.

One Man Walk Test

The user interface also allows a One Man Walk Test to be carried out during weekly visits. This facility leaves the panel fully functional on all but the zone being walk tested. This function allows each zone to be walk tested, one at a time. Once in Walk Test mode, an alarm condition on the zone is indicated by the sounders for one second.

Manned and Unmanned Mode

A user key is provided to toggle the system between manned and unmanned mode. This could be used to change the response to alarm conditions when the machinery space is unmanned.

Language Variants

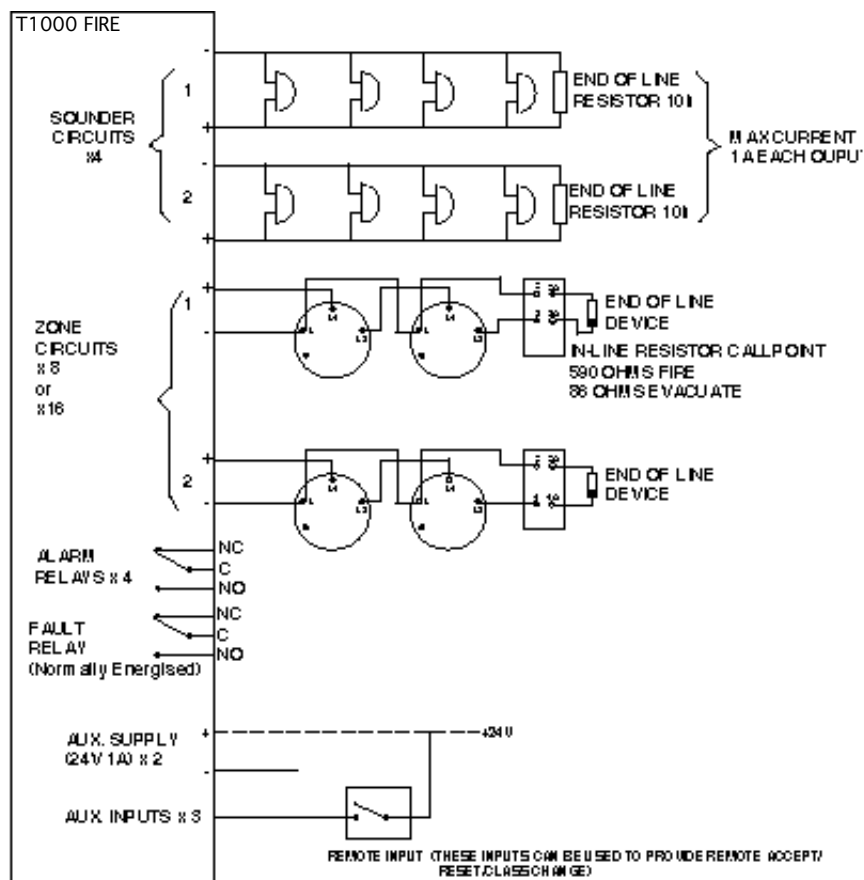
The panels are available with a variety of language overlays for the front panel. Each variant supports 6 languages on the LCD display which can be swapped during operation via a key on the user interface. The standard version offers English, Spanish, Italian, French, Portuguese and Dutch.

Fireman's Interface

The panel has the ability for a fireman's panel to be integrated into the main panels' front fascia. Standard fireman's panels are available for Norway, Sweden, Finland and Denmark.

Optional Printer

An optional printer can be fitted within the NT1000 panel to provide an on-line printout of events as they occur. Alternatively the printer can be commanded to print out a selected list from the alarm and event history.



TOTAL MAXIMUM LOAD: SOUNDER OUTPUTS PLUS ALL AUXILIARY SUPPLY OUTPUTS = 4A

Technical Information

Mechanical

Dimensions (mm):	430 W x 320 H x 150 D
Enclosure Material:	Cast Aluminium Front Cover Steel Back Box
20mm Cable Entries:	26 Top and 2 Bottom , OR 2 Top and 26 Bottom 11 x rear (Mains entry)

Electrical

Mains Supply

Supply Voltage:	198 to 264V ac
Supply Frequency:	45 to 66Hz
Supply Current:	Quiescent: 50mA Active: 1A
Active Mains Fuse	3A 250V ac

Outputs

Sounder Outputs:	Monitored, separately fused, 1A rating
Relay Outputs:	Fault + 4 programmable outputs - SPDT 1A@24V dc

Total Power Supply Loading

Output Current:	4A Maximum
-----------------	------------

Total Supply Failure (optional third power supply)

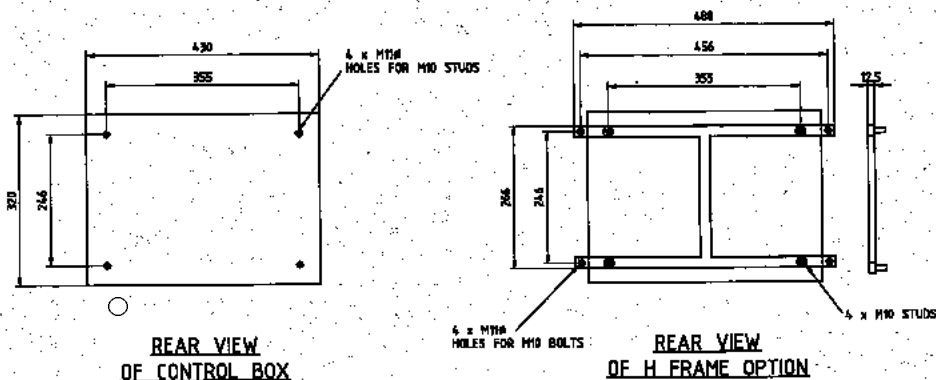
Supply Voltage:	9V dc battery (PP3)
-----------------	---------------------

Inputs

Detector Circuit:	2.2mA max with resistor 6k8 EoL (50R max line resistance) Alarm Level 1 (e.g. Alarm) - 550 to 1k Alarm Level 2 (e.g. evacuate)- 85 to 270 (Max. 32 x M300 or M600 detectors per zone or 24 with detector monitoring enabled - Note 1)
Aux Inputs:	24V dc line voltage

Note 1 - Refer to document number 26A for design details on system 601 BASEEFA certified Intrinsically Safe applications.

Mounting Arrangement



The right is reserved to modify or withdraw any product or service without notice