



## 8 - 12 zone marine approved conventional fire alarm control panels

The Esento Marine 8-12 panel is available from 8 to 12 conventional zones. All inputs and outputs are fully programmable and there are options to have delays to the outputs. The programming features also include a muster alarm feature and 3 different modes to help reduce false alarms.

As standard, all Esento Marine 8-12 panels provide four monitored sounder circuits, Fire & Fault VFCO relays, Fire & Fault switched negative outputs and inputs to ring and pulse the sounder circuits.

A fully functional repeater panel is available via a plug in comms PCB.

A separate interface card is also available to connect the panel to a ships voyage data recorder system.

The panels are supplied with a 3.0 amp internal power supply module. This module complies with the requirements of EN54-4 : 1988 and provides temperature compensated battery management charging.

Esento Marine panels are approved to European standards EN54-2 & 4, Fire Detection and Alarm Systems – Control & Indicating Equipment.



## Features

### Main Features

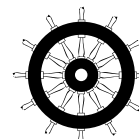
- 8 - 12 zones
- Activate controls via keyswitch or code entry
- Compatible with Apollo Orbis Marine detectors
- Integral detector removal monitoring
- Earth fault monitoring
- 3 Amp switch mode power supply Nom 27V DC
- 4 monitored sounder outputs
- 2 Aux C/O relays (1 x Fire) (1 x Fault). voltage free
- Class change I/P
- Alert (pulsing) I/P
- Fire & fault switched -ve outputs
- Program delays to outputs
- False alarm modes A, B & C
- Muster alarm
- Test mode, with or without sounders
- Disable zones, sounder O/Ps, aux O/Ps & delays
- Alarm load, 2.4A shared between all sounder outputs
- All sounder circuits are fused @ 500mA with resettable fuses.

### Technical specifications

Enclosure	1.2mm Mild Steel IP30. Colour ref: MW334E Interpon powder coat
Cable Entry	Via 20mm knockouts located in the top and rear of the cabinet
Dimensions	Back box: 450mm W x 300mm H x 85mm D, Lid: 460mm W x 310mm H x 25mm D
Mains Supply	3A internal switch mode power supply, Nom 27v DC
Battery Capacity	2 x 7.0Ah 12v VRSLA
Detection Zones	8 or 12. EOL = 4K7R
Sounder Circuits	4 x monitored, fused @500mA. EOL = 4K7R
On Board Relays	2 x programmable, 3A, 30v volt free changeover, additional relay provided on high spec zone card
Outputs	2 x programmable, 40mA switch -ve, 2 additional outputs provided on high spec zone card
Switch Inputs	Class change & alert (pulsing)
Event Log	40 event history
Intrinsically Safe Mode	Selectable per zone
False Alarm Management	Type A, B & C dependancy modes, approved by LPCB
Delay Timer	On board programmable delay timer 1-10 mins
Muster Alarm	Selectable per zone

### Models

ESEN-8MAR	8 zones
ESEN-12MAR	12 zones



# Specifications

## Electrical Specification Inputs & Outputs - MAIN PCB

PSU @ output	Power supply voltage control line.	For temperature compensation control.
PSU Input + -	28vdc supply input. Diode protected for reversal and independent short circuit. Max current 3 amps.	Max input current 3 amps. Input voltage 22vdc to 32vdc.
28v+, Ov- power output	28vdc supply output for fire alarm accessory relays etc. Max continuous use = 400mA.	Fused @ 500mA. Fuse = 500mA resettable fuse.
Common fire relay	Fire relay contact. Clean C/O. Max 3A @ 30vdc.	Unfused
Common fault relay	Maintained fault relay contact. Clean C/O Max 3A @ 30vdc.	Unfused
Outputs; FR, FLT	Switched -ve voltage outputs for relay control.	Overload voltage protected to 52vdc. Current limited 680R. Max load = 40mA
Inputs; CC, PUL	Switched -ve inputs, connect to Ov to trigger. Max input voltage = 28vdc. Non latching, max resistance 100R.	Protected via 10K Ohm impedance, 3v6 zener diode.
SNDR 1 - 2	28vdc polarity reversal monitored sounder outputs to fire alarm devices. 4K7 Ohm 5% 0.25W EOL resistor.	Monitoring current limit 28mA, fused @ 500mA. Typical max load 22 devices @ 18mA each per circuit. Ensure 2.4A is not exceeded.
Zone 1 - 4	Fire alarm zone circuits. Conventionally wired detection circuit. 4K7 Ohm 5% 0.25W EOL resistor. Max 32 detectors per zone.	Monitoring current limit 50mA, fused @ 500mA. Typical max load 22 alarm devices @ 18mA each per circuit. Ensure 2.4A is not exceeded.

## Electrical Specification Inputs & Outputs - ZONE CARD

Zone A - D	Fire alarm zone circuits. Conventionally wired detection circuit. 4K7 Ohm 5% 0.25W EOL resistor. Max 32 detectors per zone.	Monitoring current limit 50mA, fused @ 500mA. Typical max load 22 alarm devices @ 18mA each per circuit. Ensure 2.4A is not exceeded.
Programmable outputs OP A & OP B	Switched -ve voltage outputs for relay control.	Overload voltage protected to 52vdc. Current limited 680R. Max load = 40mA
Programmable relay output	Fire relay contact. Clean C/O, C & N/O Max 3A @ 30vdc.	Unfused
SNDR A - B	28vdc polarity reversal monitored sounder outputs to fire alarm devices. 4K7 Ohm 5% 0.25W EOL resistor.	Monitoring current limit 28mA, fused @ 500mA. Typical max load 22 devices @ 18mA each per circuit. Ensure 2.4A is not exceeded.

## Power Supply Specification

Mains supply	230vac +10% / -15% 50Hz max current	
Mains supply fuse	1.2A 4 Amp (F4A 250V)	Not accessible for servicing. Internal to switch mode power
Internal power supply rating	3.0 Amps total including battery charging	unit Maximum load shared between outputs = 2.4A
Power supply output voltage	21.27 - 29.68vdc	Tolerance +/- 0.1%
Maximum continuous load for battery standby (ImaxA)	ImaxA = 610mA	ImaxB not specified
Minimum current drawn by panel (example)	4 Zone I min = 90mA	12 Zone I min = 188mA
Maximum ripple	120 mV p-p	Supply and charger fault monitored
Min/max battery size and type	2 x 7.0Ah 12volt VRLA Use Yuasa NP range batteries	Other equivalent batteries may be used but have not been tested for the purposes of EN54 approval.
Battery charging voltage	27.3 vdc nominal at 20 deg C	Temperature compensated
Battery charging output current	3.0A PSU 1.34A Current limited 4.7 Ohms	
Battery high impedance fault (Batt Hi Z)	Resistance = 1 Ohm or greater	1 hour reporting time
Max current drawn from batteries	3.15 Amps with main power source disconnected. Battery fuse 3.15A LBC 20mm.	

## Quiescent and Alarm Current Details for Standby Battery Calculations

Models	Standby Current	Alarm Current
ESEN-8MAR	139mA	220mA
ESEN-12MAR	182mA	267mA
TPCA04-S 4 zone ext card std	43mA	47mA
TPCA04-H 4 zone ext card, high spec	49mA	87mA
TPCA05 comms card	5.2mA	N/A