2016

Marine Fire Detection Systems

Commercial   *Military*   *Passenger*   *Yachts*

On Board, On Guard

FIREBOY - XINTEX
safety systems

Fire Suppression . Fire Detection . Gas Detection

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Fireboy-Xintex

Fireboy-Xintex have been supplying the Marine Industry with Clean Agent Fire Suppression systems for more than 35 years, benefitting from many world class builders within our portfolio, this success is due an excellent design,engineering and customer service focus.

In recent years our move into Superyacht and Commercial Marine projects and the introduction of MED Approved Fire Suppression and Detection equipment has enabled the provision of a variety of reliable, trouble-free fire detection, fire suppression and gas detection systems for the marine & offshore industry.

Fireboy-Xintex systems are designed and supplied appropriate to the class of vessel/ project under the following guidelines, ISO 9094, RCD, CE, MCA and all IACS members regulations.

Specialising in total flooding clean agent extinguishing systems utilising either 3M™ Novec™ 1230 fire protection fluid or HFC-227ea fire extinguishant, both of which are approved by all IACS members.
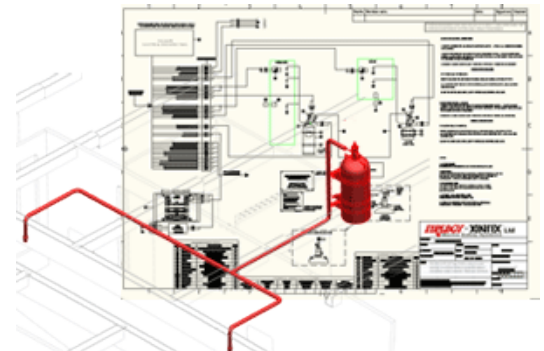
From your required design concepts Fireboy-Xintex can produce all the required documentation for Class Society Approval using the latest CAD software in both 2D and 3D.

Fireboy-Xintex were the first company to pioneer the Marine 'Electrical Release Panel' for clean agent systems fully conforming to Msc.Circ. 848/1267 and has proved very popular with Superyacht and ship builders alike. The Release panel is available for single or multiple cylinder systems.

For further information on the complete range of Fireboy-Xintex Clean agent Fire Suppression Systems please visit either of our website's depending on your location.

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Contents

CONVENTIONAL DETECTION SYSTEMS

SYNCRO ASM ANALOGUE ADDRESSABLE

MD ANALOGUE ADDRESSABLE SYSTEMS

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PLEASURE
SMALL COM

(for <24m vessels <u>not</u> requiring marine approvals)

Marine 1 & 2 Zone Conventional Detection Systems

Specifically designed to meet the requirements for small boat fire detection, this range is ideally suited for both new build and aftermarket retro-fit. Simply mounted through a 55mm hole and with a membrane front face giving excellent protection from the elements the units can be powered by either 12V or 24V.

Coupled to 'Orbis' Marine Approved Detection devices from Apollo, users can be confident that this low cost option will give many years of trouble free protection.

Measuring just 66mm x 66mm the detection panels can be mounted in the most convenient space available and with four different options available are suitable for many Pleasure Craft (ISO 9094, RCD) and Small Commercial Vessels (MGN 280) under 24M

Specifications

🔴 Minimum (alarm current)	10mA
🔴 Operating voltage	9 - 30vdc
🔴 Maximum current per zone	320mA (including EOL)
🔴 Siren/Buzzer output	12vdc @ 800mA
🔴 Extinguisher Output	Unit Supply vdc @ 500mA
🔴 Charged Input	10 to 30vdc
🔴 Supply voltage @ 12vdc	Maximum sensors = 14 per zone (2K2 EOL)
🔴 Supply voltage @ 24vdc	Maximum sensors = 8 per zone (5K6 EOL)

Dimensions:

🔴 Face	66mm x 66mm x 5mm
🔴 Depth Required	90mm
🔴 Hole Size	55mm
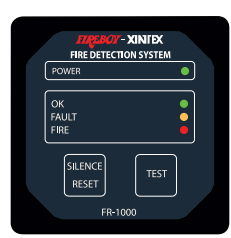
FR-1000
- 🔴 Single Zone
- 🔴 12/24V Supply
- 🔴 Max 14 Detection Devices 12V
- 🔴 Max 8 Detection Devices 24V

MAXIMUM 8 DEVICES PER ZONE ON 24V SYSTEM
MAXIMUM 16 DEVICES PER ZONE ON 12V SYSTEM
APOLLO TIME SAVER BASES
ZONE 1
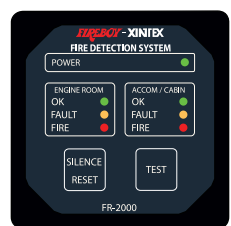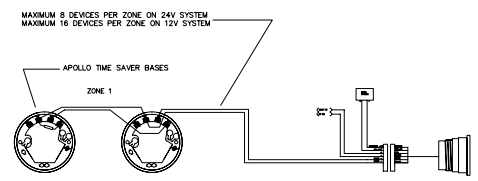
FR-2000
- 🔴 Dual Zone
- 🔴 Labelled 'Engine Room' & 'Accom'
- 🔴 12/24V Supply
- 🔴 Max 14 Detection Devices per Zone 12V
   Max 8 Detection Devices per Zone 24V
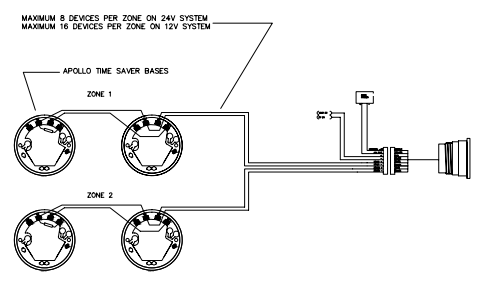
MAXIMUM 8 DEVICES PER ZONE ON 24V SYSTEM
MAXIMUM 16 DEVICES PER ZONE ON 12V SYSTEM
APOLLO TIME SAVER BASES
ZONE 1
ZONE 2

FRA-1000
- 🔴 Single Zone
- 🔴 12/24V Supply
- 🔴 Max 14 Detection Devices 12V
- 🔴 Max 8 Detection Devices 24V
- 🔴 Electrical Extinguisher Activation

Devices connected as above

Electrical Activation

Pressure monitor
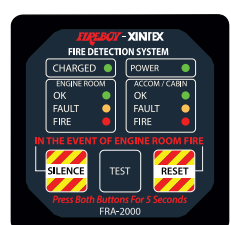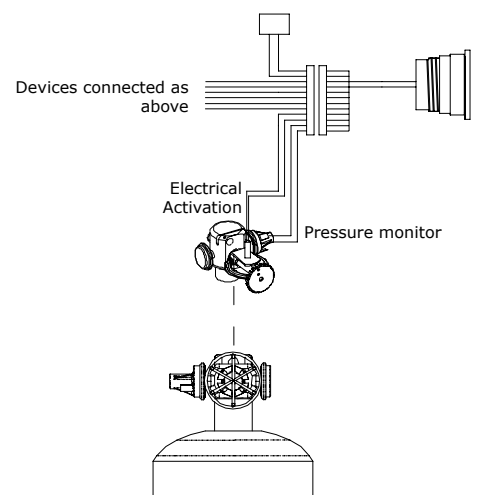
FRA-2000
- 🔴 Dual Zone
- 🔴 12/24V Supply
- 🔴 Labelled 'Engine Room' & 'Accom'
- 🔴 Max 14 Detection Devices 12V
- 🔴 Max 8 Detection Devices 24V
- 🔴 Electrical Extinguisher Activation

Marine 4,8 & 16 Zone Conventional Detection Systems

(for <24m vessels not requiring marine approvals)

For those applications requiring more than 2 Zones, the FR4000, 8000 or even the 16000 Fire Detection unit is the perfect choice, providing an intelligent networked solution, and utilising the same Apollo 'ORBIS" Marine approved detection devices. This 100mm x 100mm unit features an 8 line Blue backlit LCD display making for easy reading in most lighting conditions.
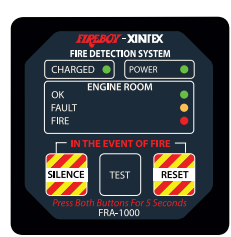
FR-4000/8000/16000

Master Control Unit

Features include:

- Full indication from one central location on your boat.
- Visual indication of Fire or Fault.
- Audible indication of Fire or Fault.
- Isolate any zone.
- All zone names programmable e.g. (Saloon) (Engine Room) (Upper Deck) (Master Cabin).
- Blue Backlight

FR-100

Input module:
Zone controller which manages the sensors.

Features include:

- 8 separate zone inputs.
- Output Relay's x 2.
- 10 A resistive @ 24VDC.
- Relay 1 & relay 2 close on Fire detection.
- Relay 1 opens when alarm is muted.
- Relay 2 opens when all zones are OK.

FEC-6

Engine room controller unit (optional).

Features include:

- 6 relays.
- Output relay 1 to 4 = 10 A resistive @ 24VDC.
- Output relay 5 & 6 = 1 A resistive @ 30VDC.
- Relay 4 activated on a programmable timer.
- Relay 5 opens when alarm is muted.
- 4 inputs (for extinguisher cylinder empty/fill switches).
- L=105mm x W=85mm x H=57mm
- DIN rail mount

The FR-4000/8000/16000 have been developed to allow monitoring of up to 4/8/16 zones. Each zone can have up to 18 sensors attached. It is a network system consisting of the FR-4000/8000/16000 Master Display Unit and one or two FR-100 Eight Zone Inputs.

All devices are interconnected by a 2 wire network cable. The Master Display Unit (MDU) controls communication with all attached Input and Output units. The network cable can be up to 1000 meters in length.

Typical system

FR-4000/8000/16000
Master Display Unit

4 core cable e.g. cat 5 (max length = 1000m)

+ VDC
GND
Coms +
Coms -

Sensor

Sensor Input Unit

Battery Neg -
Battery Pos +

FR-100
(IOU)

Aux Battery Neg -
Aux Battery Pos +

Total Zone
Inputs = 8

Relay 2

Relay 1

Optional FEC-6

Inputs   Relays

Engine Room Controller

Engine Shut Down
Fan Shut Down
Evacuate Light

Relays

Optional FEC-6

Inputs   Relays

Engine Room Controller

Engine Shut Down
Fan Shut Down
Evacuate Light

Relays

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MARINER II, IV & VIII

Marine 2,4 & 8 Zone Conventional Detection Systems
(for <24m vessels not requiring marine approvals)

Product Overview

The Mariner range consists of a series of conventional fire alarm control panels designed in accordance with European standards BS EN54-2 and BS EN54-4 Fire Detection and Fire Alarm systems - Control and Indicating Equipment.

The range consists of 2, 4 and 8 zone control panels.

Features

- Fully programmable using simple menu options
- Adjustable sounder delay time
- Sounder configuration options
- Zonal sounder delay detectors only
- Zonal sounder delay call points only
- Coincidence input selection
- I.S Barrier selection by zone
- Short circuit fire by zone

- Silent zones
- Zone input delay
- General panel configuration
- Simple, single board construction
- Installer friendly
- Compatible with wide range of detection devices
- Two monitored sounder outputs
- Auxiliary power output
- 32 Detection devices per zone

Panels

Product	Description	Standby	Alarm	Size(mm)
Mariner 2	2 zone control panel	0.065 Amps	0.1 Amps	352x225x60
Mariner 4	4 zone control panel	0.075 Amps	0.21 Amps	352x225x60
Mariner 8	8 zone control panel	0.093 Amps	0.55 Amps	352x225x60

Technical

Construction	-	1.2mm mild sheet steel
IP Rating Finish	-	IP30
Colour - lid & box	-	Epoxy powder coated
Colour - controls plate & labels	-	Black - fine texture
Weight	-	2.3kg
Power supply DC rating	-	24V 3 Amps
Fault contact rating	-	30V DC 1 Amp
Local fire contact rating	-	30V DC 1 Amp
Fire contact rating	-	30V DC 1 Amp
Sounder output rating	-	0.5A per output (max 1.6A over all outputs)
Detection zone current	-	1.6 milliamps
Detection zone EOL resistor	-	6k8 5%
Sounder output EOL resistor	-	10k 5%
Cable capacity	-	2.5mm² per terminal
Operating temperature	-	-5°C to +40°C
Operating humidity	-	<95% (non condensing)

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'Ocean' panels are fully approved to European standards EN54-2 & 4,
Fire Detection and Alarm Systems– Control & Indicating Equipment & the
Marine Equipment Directive.

4 Zone Conventional Fire Detection Panel

Ocean 4 zone Conventional FACP with integral power supply & space
for standby batteries.

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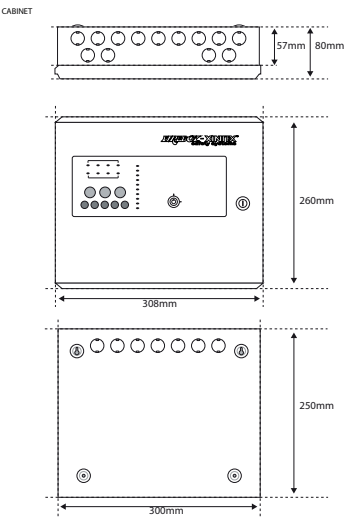– Control & Indicating Equipment & the Marine Equipment Directive.

Two or four fire zone circuits are provided plus two
monitored sounder circuits.

Fire & Fault VFCO relays, Fire & Fault switched negative outputs, class
change and an alert input are also included.

The fire zone Fire & Fault switched negative outputs, class change and
an alert input are also included.

*Available in
Grey or Black*

Technical

Construction	-	1.2mm sheet steel, IP30
Enclosure finish	-	Interpon Radon, Silver Grey, Epoxy Powder Coat
Mains voltage supply	-	230V AC 50Hz
Mains supply fuse	-	1.6A 250V
Power supply DC rating	-	28V 3A
Aux 24V supply	-	Fused at 500mA
Battery (24 hour standby)		3.2Ah 12V (2 per panel) (non-networked)
Teperature Range	-	-5C to +40C max RH 95%
Fault contact rating	-	30V DC 3 amp
Fire contact rating	-	30V DC 3A
Sounder output rating	-	Fused at 500mA each
Detection loop	-	400mA output
Detector protocol	-	Conventional

8 & 12 Zone Conventional Fire Detection Panel

Ocean 8 or 12 zone Conventional FACP with integral power supply &
space for standby batteries.

Simplicity is one of the most important aspects when considering the
end user of a fire alarm panel. Thecolour coded buttons and the 3 step
silence functionality gives non-technical users the confidence to
correctly manage their fire alarm system.

As standard the panels provide two monitored sounder circuits, Fire &
Fault VFCO relays, Fire &Fault switched negative outputs, class change
and an alert inputare also included.

The fire zone Fire & Fault switched negative outputs, class change and
an alert input are also included.

*Available in
Grey or Black*
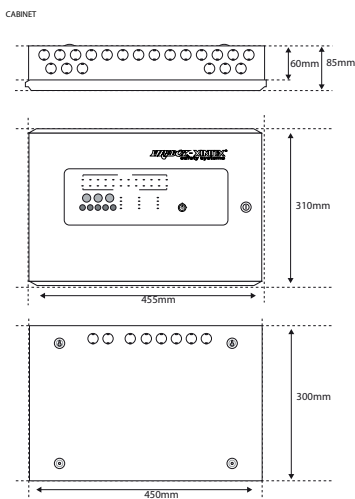
Technical

Construction	-	1.2mm sheet steel, IP30
Enclosure finish	-	Interpon Radon, Silver Grey, Epoxy Powder Coat
Mains voltage supply	-	230V AC 50Hz max current 1.2A
Mains supply fuse	-	4A 250V
Power supply DC rating	-	28V 3A
Aux 24V supply	-	Fused at 500mA
Battery (24 hour standby)		9.0Ah 12V (2 per panel) (non-networked)
Teperature Range	-	-5C to +40C max RH 95%
Fault contact rating	-	30V DC 3A
Fire contact rating	-	30V DC 3A
Sounder output rating	-	Fused at 500mA each
Detection loop	-	400mA output
Detector protocol	-	Conventional

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Conventional Marine Devices

Heat Detector

The Orbis Marine Heat Detector uses a single thermistor to sense the air temperature around the detector. There are twelve heat detectors in the Orbis Marine range designed to suit a wide variety of operating conditions

- OMHD-01   HEAT A1R
- OMHD-02   HEAT A2S
- OMHD-03   HEAT BR
- OMHD-04   HEAT BS
- OMHD-05   HEAT CR
- OMHD-06   HEAT CS

refer to table for product codes

with flashing LED

- OMHD-13   HEAT A1R
- OMHD-14   HEAT A2S
- OMHD-15   HEAT BR
- OMHD-16   HEAT BS
- OMHD-17   HEAT CR
- OMHD-18   HEAT CS

Smoke Detector

The Orbis Marine Optical Smoke Detector operates on the well established light scatter principle. However, the sensing technology is radically different in design from previous optical detectors and significantly reduces false alarms.

- Responds to stationary flames with no flicker
- Sensitive to UV radiation emitted by flames during combustion
- Compact flame detector which fits into Series 65 bases
- Zone-powered

OMSD-01   Optical Smoke
OMSD-11   Optical Smoke with flashing LED

I.S Heat Detector

The Orbis IS Heat Detector monitors temperature by using a single thermistor network which provides a voltage output proportional to the external air temperature. The Orbis IS range incorporates seven heat detector classes to suit a wide range of operating conditions

- OMHDIS-01   I.S HEAT A1R
- OMHDIS-02   I.S HEAT A2S
- OMHDIS-03   I.S HEAT BR
- OMHDIS-04   I.S HEAT BS
- OMHDIS-05   I.S HEAT CR
- OMHDIS-06   I.S HEAT CS

refer to table for product codes

with flashing LED

- OMHDIS-13   I.S HEAT A1R
- OMHDIS-14   I.S HEAT A2S
- OMHDIS-15   I.S HEAT BR
- OMHDIS-16   I.S HEAT BS
- OMHDIS-17   I.S HEAT CR
- OMHDIS-18   I.S HEAT CS

I.S Smoke Detector

The Orbis IS Optical Smoke Detector works using the light scatter principle and is ideal for applications where slow-burning or smouldering fires are likely

OMSDIS-01 - I.S Optical Smoke
OMSDIS-02 - I.S Optical Smoke with flashing LED

Multisensor Detector

The Orbis Marine Multisensor Detector benefits from the same false alarm reduction technology as the optical detector. It is a thermally enhanced smoke detector and so will not give an alarm from heat alone

OMSD-02   MultiSensor
OMSD-12   MultiSensor with flashing LED

TimeSaver Base

The Orbis Marine TimeSaver Base® is a completely new design that provides installers with an open working area with fixing holes shaped to allow a simple mounting procedure

Relay Base

The Orbis Marine Relay Base incorporates a single-pole voltage-free change over contact for switching ancillary equipment. When the detector changes to the alarm state, the relay is energised, causing the contact to change state. The contact will remain in this condition until the detector is reset

OMDB-01 - Timesaver Base
OMDB-04 - Relay Base
OMDBIS-01 - IS Base

I.S Timesaver Base

The Orbis IS TimeSaver Base is a completely new design that provides installers with an open working area with fixing holes shaped to allow simple mounting

I.S MultiSensor Detector

The Orbis IS Multisensor Smoke Detector benefits from the same false alarm technology as the Optical Smoke Detector. It is a thermally enhanced smoke detector so will not give an alarm from heat alone

OMMDIS-01 - I.S MultiSensor
OMMDIS-02 - I.S Multisensor (flashing LED)

UV Flame Detector

The Series 65 Mounted UV Flame Detector is designed to protect enclosed indoor areas where open flaming fires may be expected. The detector has a single UV sensor with a narrow spectral response in order to discriminate between flames and most spurious sources of radiation

OMFD-01 - UV Flame Detector
OMFB-01 - FD Mounting Base

Manual Call Points

The Conventional Marine Manual Call Point has been designed to operate on conventional marine fire detection systems. It is compliant with EN54-11 and Marine Equipment Directive 96/98/EC and is available in both indoor and outdoor variants

- Plug and play terminal connections for fast wiring
- Resettable element
- Indoor and outdoor variants available

92021 - Manual Call Point
92022 - Manual Call Point IP65
92023   - Manual Call Point -IS

Galvanic Barrier

The Glavanic barrier is available in the XP95 IS range and the Orbis IS range. It can be installed in safe areas and ensures system integrity.

92020 - Galvanic Barrier

Conventional
Sounders & Beacons

(No Marine Approvals, EN54-3)

Sounder
Available with Shallow or Deep Base.
- 9-28V DC
- 102dB(A)
- IP54 (S)
- IP65 (D)
- 16mA
- 93mm dia x 63mm (S)
- 93mm dia x 93mm (D)

92024 - Sounder - Shallow
92025 - Sounder - Deep

Sounder / Beacon
Available with Shallow or Deep Base.
- 18-28V DC
- 101dB(A)
- IP54 (S)
- IP65 (D)
- 68mA
- 93mm dia x 92mm (S)
- 93mm dia x 121mm (D)

92026 - Sounder Beacon - Shallow
92027 - Sounder Beacon - Deep

Sounder
Available in Red or White
- 9-28V DC
- 100dB(A)
- IP66
- 5mA
- 110mm x 110mm x 105mm

92028 - Sounder - Red
92029 - Sounder - White

Beacon - Deep Base
- 10-60V DC
- IP65
- 185-45mA 10Cd (10)
- 510-210mA 15Cd (15)
- 93mm dia x 94mm

(Current drops at higher voltage)

92033 - Beacon - 10Cd
92039 - Beacon - 15Cd

Beacon
- 10-30V DC
- IPC 21 (S)
- IPC 33 (D)   User selectable
- 3-5mA
- >0.5/1/3CD   User selectable
- 93mm dia x 83mm

92032 - Beacon - Shallow
92038 - Beacon - Deep

High Output Sounder / Beacon
- 18-30V DC
- 110dB(A)
- Sounder: 105mA (110)
              450mA (120)
- Beacon: 250mA / 3.6j (110/120)
- IP66
- 168mm x 212mm x 155mm

(Specification based on using product at 24Vdc)

92035 - Sounder Beacon 110
92041 - Sounder Beacon 120

High Output Sounder
- 18-30V DC
- 110dB(A) / 105mA (110)
- 120dB(A) / 450mA (120)
- IP66
- 168mm x 168mm x 155mm

92034 - Sounder 110
92040- Sounder 120

(Specification based on using product at 24Vdc)

High Output Sounder / Beacon - Midi
- 9-60V DC
- 108dB(A)
- Sounder: 24mA
- Beacon: 200mA / 2.5j
- IP66
- 165mm x 173mm x 132mm

(Specification based on using product at 24Vdc)

92037 - Sounder Beacon - Midi

High Output Sounder - Midi
- 9-60V DC
- 108dB(A) / 24mA
- IP66
- 165mm x 136mm x 132mm

92036 - Sounder - Midi

(Specification based on using product at 24Vdc)

24V low Profile Evacuation Outdoor Horn/Strobe

Strobe Flash Rate	1 flash per second
Nominal Voltage Regulated	24 DC/FWR1
Operating Voltage Range 2	16 to 33 V (24 V nominal)
Max Candela	75cd
Max Strobe Current	180mA
Max volume	100dB(A)
Max Horn Current	56mA

VF4007-1M - Horn/Strobe
VF4028-10 - Horn/Strobe
                   with Outdoor Enclosure

The Outdoor Fireboy-Xintex VF Series offers dependable visible and/or audible alarms for all outdoor needs.- Included with the Fireboy-Xintex Series is the VF4008-10 outdoor enclosure. The enclosure is made of high quality Lexan material, providing protection from weather related conditions and allowing the necessary full candela output. This highly constructed enclosure meets various installation requirements including deterring moisture from entering the enclosures.

ATEX area Sounder

The IS-mA1 is a compact, 100dB(A) alarm sounder. Approvals include ATEX, IECEx and GOST-R for Zone 0 applications and FM approval for Class I Division 1 and Class I Zone 0 applications.
- Input overload and reverse current protection
- End of line resistor certified
- Auto synchronised sound output
- Available with custom tone configurations and frequencies

90932 - ATEX Sounder

Marine Approved Sounder (100dBA) / Sounder-Beacon (100dBA / 5J)

Rated Voltage	10-57 VDC
Operating Voltage Range	10-57 VDC
Max volume	100dB(A)
Max Horn Current	56mA
Protection	IP66
Nominal Current	6-80mA
Approvals	GL, MED

PA1 - Sounder - RED
PA1-G - Sounder - Grey

Rated Voltage	18-30 VDC
Max volume	100dB(A)
Protection	IP66
Nominal Current	315-365 mA
Approvals	GL, MED
Lens Colours	Red (standard)
	Clear
	Yellow
	Amber

PAX 1 - Sounder-Beacon - RED
PAX1-G - Sounder-Beacon - Grey

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CLASSED

SYNCRO ASM

Marine & Offshore Two Loop Analogue Addressable Control Panel

Features

- 16 zonal LED indicators
- 2 programmable sounder circuits
- 5 programmable inputs
- 3 programmable relays
- 3A power supply
- Large graphic display
- Real time clock
- Powerful, network wide cause and effects
- Sensitivity adjustment and drift compensation
- Apollo protocol
- Same look and feel as Syncro range
- Stores 1000 last events in event log
- Compact, stylish enclosure
- Installer friendly, removable equipment chassis
- Different language and character set variants available
- Fully EN54-2 and EN54-4 compliant

Designed for use with

apollo
WORLD CLASS FIRE SOLUTIONS

Discovery Detection Devices

Config. Features

- Comprehensive day/night mode facility
- Programmable one touch test mode
- Powerful and versatile cause & effect programming
- Cause & effect wizard including:
  - Cause & effect action
  - Disablement configuration
  - Test mode configuration

Product Overview

- The Marine & Offshore Fireboy Syncro ASM is a versatile range of open protocol fire alarm control panels compatible with existing Syncro fire alarm panel technology.

- Hosting up to 126 Apollo fire detection devices and modules per loop, The Fireboy Syncro ASM uses leading edge microprocessor based electronics to provide a flexible control system with high reliability and integrity.

- Suitable for all small to medium sized vessels, Fireboy Syncro ASM control panels can be expanded and networked to become part of much larger systems if the need arises, therefore providing a future proof solution for any vessel.

- With its large graphical display and ergonomic button and indicator layout, the Fireboy Syncro ASM control panel is simple and straightforward to understand for installers, commissioning engineers and end users alike.

Fireboy Syncro ASM Panels

Protocol	Zones	Loops	Printer	Size (mm)
Apollo	16	2	No	385 x 310 x 90

Product Code	Language
90900-EN	**English**
90900-IT	**Italian**
90900-ES	**Spanish**

Product Code
90900

Product Code
90900-B

Other languages can be programmed upon completion of a simple conversion form.

available option:

Flush Mount Bezel Kit available product code: 90948

VESSELS

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Technical

Construction	-	1.2mm sheet steel
Enclosure finish	-	BS 00 A 05 light grey textured
Mains voltage supply	-	230V AC 50 or 60 Hz.(110V special request)
Display	-	8 lines of 40 characters graphic LCD
Mains supply fuse	-	1.6A 250V
Power supply DC rating	-	24V 3 amps
Aux 24V supply		Fused at 500 milliamps
Battery (24 hour standby)	-	7Ah 12V (2 per panel) (non-networked)
Fault contact rating	-	30V DC 1 amp
Fire contact rating	-	30V DC 1 amp
Alarm contact rating	-	30V DC 1 amp
Sounder output rating	-	Fused at 1 amp each
Detection loop	-	400 milliamp output
Detector protocol	-	Apollo Discovery
Printer port	-	Serial RS232
Serial expansion port	-	Serial RS485
		(Compatible with all Syncro I/O modules)
PC port	-	Serial RS232
Network connection	-	RS485 - Up to 64 panels via
		fully fault tolerant optional network card
Remote Silence input (SIL)	-	Switched -ve
Remote fault input (FLT)	-	Switched -ve
Remote reset input (RES)	-	Switched -ve
Remote alert input (INT)	-	Switched -ve
Remote evacuate input (CNT)	-	Switched -ve
Download lead	-	Product Code: 95016
Configuration	-	Via Loop Explorer PC utility

ASM Repeater Panels

Product Code
90931   Flush Mount

Size (mm)
310 x 240 x 40

Product Code
90925   (Std)

Size (mm)
330 x 255 x 90

The Fireboy Syncro VIEW fire alarm repeater panel provides a simple and convenient method of extending the controls and indications of the Fireboy Syncro fire alarm control panel to other locations.

The large, graphic liquid crystal display and high brightness LED indicators duplicate the indications on the Fireboy Syncro ASM fire alarm control panel at up to 15 additional locations via a simple, two-wire serial data connection.

The Fireboy Syncro VIEW is available in either a 24V DC powered option (which can be powered via an additional 2 cores from the Syncro control panel/local 24V DC supply) or a 230V powered option with local battery back up.

Up to 15 Fireboy Syncro VIEW repeaters can be connected to each control panel on the Syncro network making VIEW ideal where multiple points of indication and/or controls are required such as crew's quarters and engineers cabins.

System Integration

The system has two serial ports on the front panel board which are used for communication with external devices, such as a PC printer,modem or connection to an Alarm and Monitoring system.

United States Coast Guard

Fireboy-Xintex Elite RS Analog Addressable 2 Loop Marine Fire Control Panel Apollo Protocol.

USCG Type Approval
161.002/A53/0

VF0860-4M-FB - Elite RS

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Analogue Marine Devices

Ionisation Smoke Detector

The Analogue Marine Ionisation Detector uses a low activity radioactive foil to detect fires by irradiating the air in the smoke chamber and causing a current flow. If smoke enters the chamber, the current flow is reduced leading to an alarm.

- Responds well to fast-burning, flaming fires
- Designed to operate in a variety of environments
- Remote test feature

90902   - Standard
AP95-IOS   - Intrinsically Safe

Optical Smoke Detector

The Analogue Marine Optical Smoke Detector works using the light scatter principle and is ideal for applications where slow-burning or smouldering fires are likely.

- Responds well to slow-burning, smouldering fires
- Well suited for bedrooms and escape routes
- Unaffected by wind or atmospheric pressure
- Remote test feature

90903   - Standard
AP95-OP   - Intrinsically Safe

Heat Detector

The Analogue Marine Heat Detector,distinguishable by the low airflow resistant case,uses a single thermistor to sense the air temperature around the detector.

- Ideal in environments that are dirty or smoky
- Unaffected by wind or atmospheric pressure
- Remote test feature

90904 - Standard
90912   - Intrinsically Safe

Multisensor Detector

The Analogue Marine Multisensor detector comprises optical smoke and thermistor temperature sensors whose outputs are combined to give the final analogue value. As a result, the multisensor is useful over a wide range of applications and is highly immune to false alarms.

- Ideal for a wide range of applications
- Well suited for engine rooms & Galley's
- Unaffected by wind or atmospheric pressure
- Well suited for sensitive environments
- Remote test feature

90909 - MultiSensor

Intelligent Mounting Base

All detectors in the Analogue Marine range are for use with the Marine Mounting Base. The Mounting Base is a low insertion force base with stainless steel contacts for the detector terminals. XPERT cards are supplied with all bases.

- XPERT addressing
- One way fit
- Locking feature to prevent unauthorised removal

90901 - Standard
90913   - Intrinsically Safe

Intelligent Heater Base

The Intelligent Heater Base is designed to be used in cold climates where environmental conditions could result in either icing or condensation affecting the operation of detectors. It is recommended that the heater base be used in conjunction with either a Waterproof Base Cover or Deckhead Mounting Box to minimise moisture ingress.

- XPERT addressing
- One way fit
- Locking feature to prevent unauthorised removal

94041 - Intelligent Heater Base

Isolating Base

The Isolating base senses and detects short-circuit faults on loops & spurs.

- XPERT addressing
- One way fit
- Locking feature to prevent unauthorised removal

94034 - Isolating Base

Sounder Beacon Base

The Discovery Sounder Beacon Base makes full use of the Discovery protocol. For ease of commissioning a 'magnetic wand' can be used to test and adjust each sounder locally.

- Individual control of the sounder and beacon
- Volume and tone settings can be selected from the control panel
- SOLAS Tone 1a can be selected and will sound when General Alarm is activated.
- Electronic bell tone

90908 - Sounder Beacon

Integrated Base Sounder

The Integrated Base Sounder comprises a base sounder with integral mounting base and is for use with Discovery range. It is designed for use in enclosed areas.

- Two tone ranges
- Synchronisation of 'alert' and 'evacuate' tones
- Individual and group addressing
- Unique acoustic self-test
- Integrated base
- Isolator option

90930 - Base sounder

Loop-Powered Beacon Base

The Beacon Base is a loop-powered beacon combined with a standard Intelligent Mounting Base. It is used to signal a fire alarm in enclosed areas. The beacon base can be used with either a detector fitted or with a cap as a stand-alone alarm device.

- Beacon flash rate of once per second
- Synchronisation of beacon flash
- Individual and group addressing
- Unique beacon self-test
- Loop powered
- Isolator option

92016 - Beacon Base

Isolator

The Analogue Marine Isolator is placed at intervals on the loop and ensures that, in the case of a short circuit, only the section between the isolators will be affected. When the short circuit is removed, the isolators automatically restore power in the isolated section.

- Detects wiring short circuits using patented technology
- Minimises disruption from short-circuits
- Automatic de-isolation on short-circuit removal
- The equivalent of up to 20 smoke detectors may be installed between isolators

90936 - Isolator

Isolator Base

The Analogue Marine Isolator Base is unique and designed to only accept the marine isolator.

- Only accepts Isolators 90936

90935 - Isolator Base

IR2 / IR3 Flame Detector

The Intelligent Base Mounted IR^3 Flame Detector is designed to protect areas where open flaming fires may be expected. The detector has two / three IR sensors that respond to different IR wavelengths in order to discriminate between flames and spurious sources of radiation.

- Responds to stationary flames with no flicker
- Sensitive to low-frequency flickering IR radiation emitted by flames during combustion.
- Compact flame detector which fits into Discovery bases Loop-powered
- False alarms due to factors such as flickering sunlight are avoided by a combination of filters and signal processing techniques.

90964 - UV   Flame Detector
90965 - IR2 Flame Detector
90966 - IR3 Flame Detector

Deckhead Mounting Box

The Deckhead Mounting Box gives extra protection to devices to be fitted in areas where there is the possibility of moisture or condensation ingressing through the rear of the base. This new version is suitable for a wider range of detector bases as well as Apollo's AV bases.

- Protects against water ingress
- Improved performance
- Available in Polycarbonate
- Polycarbonate Deckhead Mounting Box also fits Apollo Audio Visual bases

90945 - Mounting Box
90946 - Accessory Kit

Please contact Fireboy-Xintex for Intrinsically safe Flame Detectors part numbers and pricing.

Analogue Marine Devices

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A unique key shape that has been ergonomically designed for convenient resetting and removal of front cover.

The back box can be universally mounted allowing the symmetrically placed drilling guides to be at the top or bottom for cable entry.

Combined LED indicator and front reset mechanism

Minimal space required to detach the front plate for easy removal.

Addressable models are supplied with E-Z fit connectors for quick and practical installation of cables.

NEW PRODUCT

These latest Manual Call Points have been designed and engineered to be easily installed and commissioned.

94042   - Standard MCP
90962   - Standard MCP with isolator

94043   -Waterproof MCP
94037   -Waterproof MCP with isolator
90974   - Intrinsically Safe

Area Isolator Unit

Area Isolator units are used to isolate an area for a specific amount of time, selectable from 15 -75 minutes at 15 minute intervals. The AIU can be wired directly to an ASM panel input or connected to the Loop via a mini-switch monitor.

Specific area(s) isolation determined by 'Cause and Effect' programming of Syncro ASM FACP.

- Operating Voltage - 18 to 32Vdc
- Current Consumption - 25mA (with LED operating)
  Size - 97mm x 97mm x 58mm
- Momentary Pushbutton operation

94033 - Area Isolator

Door Hold/Release

Various Door Hold & Release options are available to suit different applications and will specified upon request.

GAS Detection

High quality and competitively priced fixed gas detectors for the detection of gases in a variety of applications. Typical gases include: *Refrigerants, Toxic gases, Combustible gases & VOC gases.* **Available to be connected to Syncro ASM Loops via Mini-Switch monior or DIN-Rail Switch Monitor Plus.**

Please ensure that your Class society (Approval body) will accept the fitting of Gas Detectopn to your Fire Alarm system.

The IP66 version is recommended for applications where high levels of dust, moisture or condensation is present. It is available for IR CO2 sensors.

The gas sensor is fitted with an ABS head with sintered steel face disc which projects outside an IP66 enclosure.

This ensures fast sensor response and prevents condensation reaching the electronics.

It is rated –40 °C to +50 °C. (+40 °C with electrochemical sensors). This is also available with a remote ABS head.

In heavy spray or wash down areas extra protection can be provided by fitting a splashguard.

90927 - Gas/Fume Sensor IP66

Data sheets on all Gas/Fume sensors available on request.

The ATEX standard Exd enclosure is typically used in hazardous areas, where flammable gases, vapour fumes or dust are present.

EXD Gas Sensor is available in two versions including a digital display model.

Typical applications include hazardous areas such as machinery rooms, boiler rooms, storage facilities, and refrigeration.

The enclosures are approved for Zone 1 and Zone 2. It is flameproof, explosion proof, and weatherproof (ATEX Ex d IIB+H2).

Standard Entries: 3/4" NPT.

90926 - Gas/Fume Sensor Exd

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Loop Powered Sounders & Beacons

Intelligent Open-Area Sounder

The Intelligent Open-Area Sounder has been designed for use in open areas and can be connected to any Discovery system.

- Self-test fault monitoring
- Choice of tones
- Group addressing and synchronisation of alarm
- Weatherproof IP65
- Comes with Isolating Base as standard
- Loop powered
- Output is 100 dB(A) at 90°
- Ceiling Mounted

92000 - Sounder - Red
92001 - Sounder - White

Intelligent Open-Area Beacon

The Intelligent Open-Area Beacon has been developed for use in situations where there is a risk that sounders will not be heard. It is weatherproof and can be used outside.

- Self-test fault monitoring
- Weatherproof IP65
- Group addressing
- Synchronisation of alarm
- Comes with Isolating Base as standard
- Loop powered

92002 - Red
92003 - Clear

Intelligent Open-Area Sounder Beacon

The Intelligent Open-Area Sounder Beacon is designed for use in open areas and can be connected to an Apollo intelligent system.

- IP65 weatherproof
- Gives two functions at one point
- Self-test fault monitoring
- Choice of tones
- Group addressing and synchronisation of alarm
- Comes with Isolating Base as standard
- Loop powered

92004 - Red
92005 - Clear

Discovery Open-Area Sounder Beacon

The Discovery Open-Area Sounder Beacon makes full use of the Discovery protocol and has been designed for use in indoor, open-areas and outdoors. When the fire system is being commissioned a Magnetic Wand can be used to adjust and test each sounder locally.

- 15 evacuation tones + 15 secondary or alert tones
- 7 volume levels
- Software-defined group addressing with up to 16 group addresses
- Alarm switching by individual device, by group or of all devices on loop
- Independent control of sounder and beacon
- Set-up and testing of devices at point of installation
- Isolator status information

92006 - Red
92007 - White

Intelligent 100dB(A) Open-Area Sounder

The 100dB(A) Loop-Powered Sounder is designed for use in open areas and can be connected to any Discovery or XP95 system.

- Output is 100dB(A) at 90°
- Current consumption of 5.0mA
- Can be synchronised
- Group address facility
- Loop powered
- Wall mounted

92008 - Red
92009 - White

Multi-Tone Open-Area Sounder Beacon

The Multi-Tone Open-Area Sounder Beacon is designed for use in indoor open areas and can be connected to any Discovery or XP95 system. The sounder beacon complements Apollo's intelligent and integrated base sounders as well as the loop powered 100dB(A) sounder.

- Powerful LED combined with 100dB(A) sound output
- Two volume settings
- Synchronisation of 'alert' and 'evacuate' tones
- Individual and group addressing
- Three tone choices
- Enables DDA compliance
- Isolator option

92010 - Red
92011 - White

Weatherproof Multi-Tone Open Area Sounder Beacon

The Weatherproof Multi-Tone Open Area Sounder Beacon is designed for use in outdoor open areas and can be connected to any Discovery system. The sounder beacon complements Apollo's intelligent and integrated base sounders as well as the loop powered 100dB(A) sounder.

- IP66 (immune to the affects of wind and precipitation)
- Powerful LEDs combined with 100dB(A) sound output
- Two volume settings
- Synchronisation of 'alert' and 'evacuate' tones
- Individual and group addressing
- Three tone choices
- Enables DDA compliance
- Isolator option

92012 - Red
92013 - White

Intelligent Weatherproof 100dB(A) Open-Area Sounder

The 100dB(A) Weatherproof Sounder is designed for use in open areas and can be connected to any Discovery system. The sounder comprises a back box and sounder unit supplied together.

- IP 66 (immune to the affects of wind and precipitation)
- Output is 100dB(A) at 90°
- Current consumption of 5.0mA
- Can be synchronised
- Group address facility
- Loop powered
- Wall mounted
- Ceiling Mounted

92014 - Red
92015 - White

Loop-Powered Beacon

The Loop-Powered Beacon is a local-area beacon designed for indoor use. The beacon has been developed as a supplement to sounders for use in situations where there is a risk that sounders will not be heard.

- High intensity LEDs
- More reliable than xenon beacons
- Automatic LED check
- Lockable
- Wide angle of visibility
- Enables DDA compliance
- Synchronised flash

90910 - Red
92017 - White
92018 - Amber

Beacon Enclosure

The Beacon Enclosure is weatherproof and allows Apollo's loop-powered beacon to be used in high moisture environments such as swimming pools and food processing areas where wash-down occurs. The enclosure is supplied with a mounting bracket to accept a Discovery base.

- Protects against water ingress
- Allows beacon to be used outdoors
- Accepts MiniDisc Remote Indicator
- IP67

92019

DIN-Rail Components & Accessories

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DIN-rail Sounder Controller (8 Amperes)

The Marine DIN-rail Sounder Controller (8 Amperes) is used to control the operation of a zone of externally powered sounders and report their status to the control panel.

- Allows sounders to be operated continuously or be pulsed, 1 second on, 1 second off
- May be synchronised when in pulsed operation
- An opto-coupled input is provided to monitor the state of the external power supply
- Sounders can be operated individually or in groups

90968 - Sounder Controller

DIN-Rail Switch Monitor Plus

The Marine DIN-rail Switch Monior Plus is designed to monitor the state of one or more single pole, volt free contacts connected on a single pair of cables and to report the status to Apollo compatible analogue control equipment.

- Output for resetting a remote detector
- Four input states - 'normal', 'fault', 'pre-alarm' and 'alarm'
- Two visible LEDs
- Loop powered
- Selectable alarm delay for monitoring flow switches

90969 - Switch Monitor Plus

DIN-Rail Zone Monitor

The Marine DIN-rail Zone Monitor with Isolator controls the operation of a zone of up to 20 Apollo Orbis marine fire detectors from a Discovery loop.

- Loop powered
- Visible short circuit LED
- Built in Isolator

90970 - Zone monitor

Protocol Translator-Single
Product Code 90914

Protocol Translator-Dual
Product Code 90971

Galvanic Barrier
Product Code 90915

DIN-Rail Input/Output Unit

The DIN-Rail Input Output Unit provides a volatge free, single pole, change-over relay output, a single monitored switch input and an unmonitored, non-polarised opto-coupled input.

- It can report fault, switch open and switch closed levels
- Three visable LEDs
- Loop-powered
- Capable of switching up to 30V at 1A

94077 - Input/Output Unit

DIN-Rail Output Unit

The DIN-Rail Output Unit provides a voltage-free single-pole, change-over relay output. It is a simplified version of the Input/Output unit without circuitry for monitoring inputs.

- Capable of switching up to 30V to 1A
- Loop-powered
- Capable of switching up to 30V at 1A

90967 - Output Unit

Mini Switch Monitor

The Mini Monitor Module is an interface within an entirely new housing. This allows the unit to be fitted onto a standard 35mm DIN-rail (using a twist-click motion) or mounted within an enclosure, for example a manual call point.

It is designed to monitor the state of one or more single pole, volt free contacts connected on a single pair of cables and to report the status to the ASM Panel.

AP95-LSM - Switch Monitor

Zener Barrier for ATEX area Sounder

- Removable terminals - for easy cabling - UNIQUE
- Bussed power - reduces cabling - UNIQUE
- Barrier protection module
- Proximity detector inputs - UNIQUE
- Dual channel modules
- Relay and solid state switch modules - UNIQUE

90934 - Zener Barrier

DIN-Rail Interface Enclosures

DIN-Rail Interface Enclosures are available in two sizes and can be used for housing Intrinsically Safe (IS) barriers or DIN-Rail mounted Interfaces.

A multi-purpose label that features a section for use with IS systems is supplied. For non-IS systems, the part referring to IS can simply be removed.

- Allows multiple interfaces to be housed together.
- IP 67 rated

90978 - DIN-Rail Interface Enclosure (4 Units)
94078 - DIN-Rail Interface Enclosure (10 Units)

Timer Relay

The Din Rail mounted Timer Relay is used in conjunction with the Area Isolator Unit to provide isolation of an area from activating the FACP for a predetermined time during maintainance or other activities likely to generate an alarm.

After the preset time has elapsed the isolated are will once again become active.

Syncro ASM 'Cause & Effect' programming will be required to set this operation.

95051 - Timer Relay

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Network card

- Up to 64 nodes

- High integrity protocol

- Fully secure against short or open circuit faults

- Simple 2-wire loop connection

- Supports open ended networks for retro-fit applications.

- Network wide test and disablement functions

- Network wide cause and effect logic

- Flexible configuration options

- Panels configurable to act on network events or not as required

Product Code
90984

Product Overview

- The flexibility of the Syncro system can be further enhanced by connecting control panels and repeaters together using a high integrity network.

- A simple 2-wire connection between each panel allows events to be transmitted to other parts of the system to provideindication or control on a system wide basis.

- Using the Loop Explorer configuration programme, up to 64 nodes can be programmed to respond in a variety of ways to any system events as required.

- This flexibility extends the comprehensive cause and effect programming capability of Syncro control panels to the entire network allowing actions, test modes or disablements to be started from any point.

- The fault tolerance of the network is such that any single open or short circuit fault will not result in any loss of information. Multiple faults are isolated and the network breaks into smaller networks which continue to work autonomously.

Technical

Product code	90984
Protocol	RS485
Connection	Two Wire Loop
Current Consumption	40mA
Integrity	Full isolation of faulty nodes or wiring segments
Indicators	Data In and Data Out communication status
Cable length	1.2Km to adjacent nodes

Flexible network configuration options using simple to follow PC configuration programme
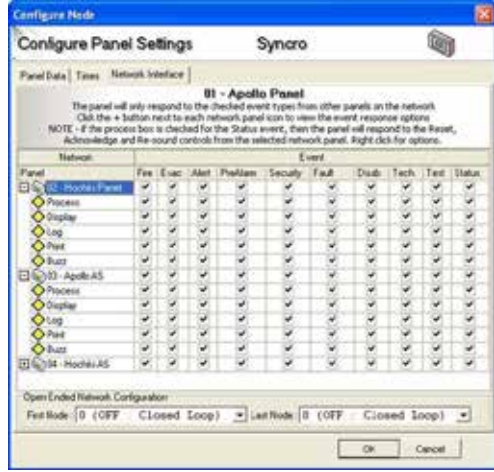
Two core loop wiring ensures network integrity by providing full isolation of faulty wiring segments

Control Panel

2 Core

Control Panel

2 Core

2 Core

Control Panel
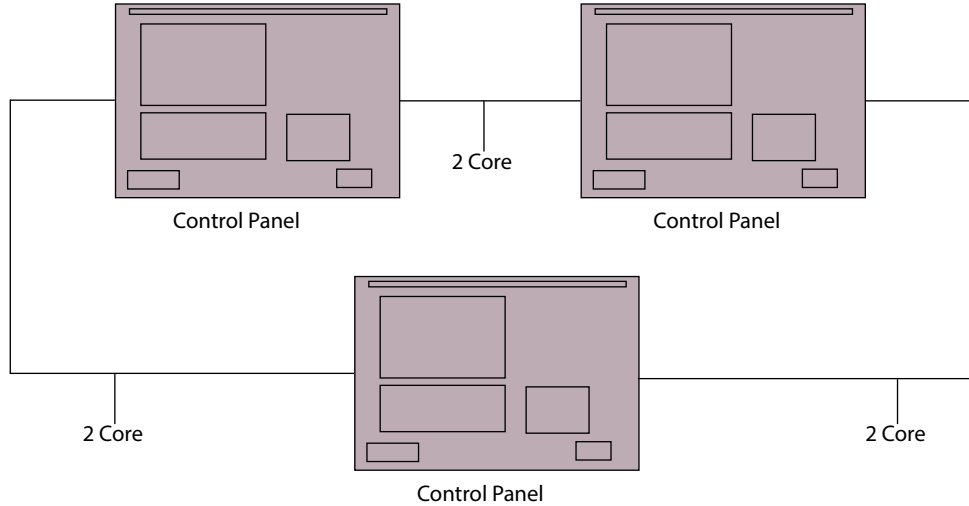
8 Way Relay Extender Board

Features

- 8 volt free changeover relay contacts (1Amp 30V DC)

- Relay operated indications

- Remote connection to panel via RS485 serial bus

- Common footprint to other Syncro I/O board types

- All outputs programmable for cause and effects

- Can be used with other Syncro I/O modules on the same panel

- Compatible with Syncro AS panels

Product Overview

- To further enhance the versatility of the Fireboy Syncro fire alarm system, additional relay output capability can be added using Syncro relay boards.

- These boards have 8 voltage free changeover relay contacts, each of which can be individually programmed.

- Up to 32 of these boards can be connected to the dedicated RS485 communications bus in the control panel giving the capability of up to 256 additional relay outputs.

- The relay boards may be mixed on the RS485 bus with 16 channel I/O boards, 6 way sounder boards or 4 way conventional detection zone boards to provide a very flexible system of I/O to satisfy any requirement.

- All outputs are configurable in the same way as devices connected to the loops and all may be acted upon by cause and effect logic.

- These boards are typically used in applications which require more than the four standard relay outputs such as signalling to other systems or plant control.

- Standard Syncro control panels contain fixings for one sounder, relay, conventional detection or I/O board, which can easily be connected using four small signal wires to the power and comms bus within the panel.

- Consideration must be taken as to the loading on the main panel.

Product Code
90947

Technical

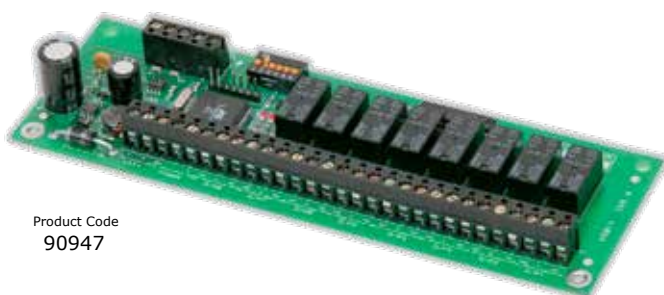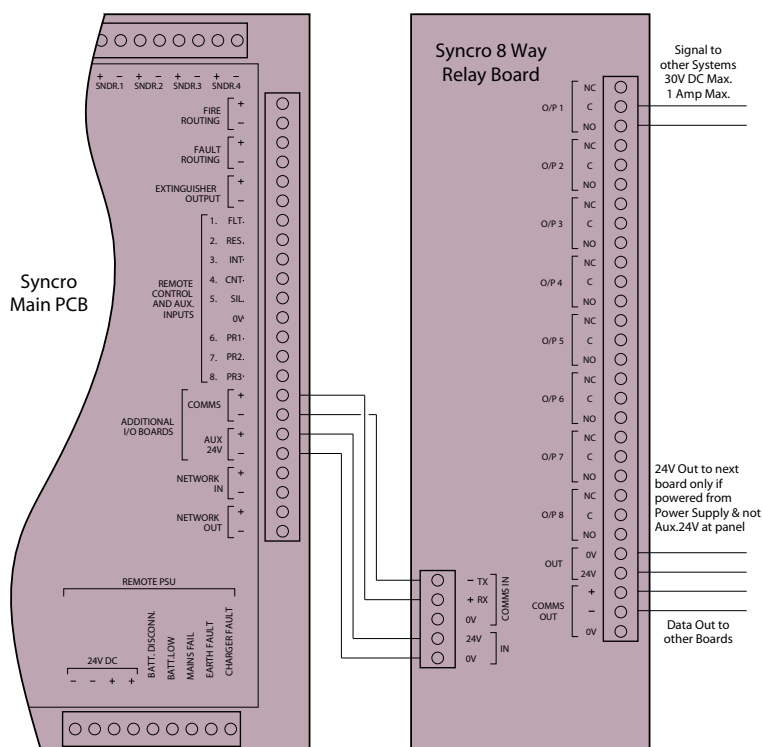|		
Product code	–	90947
Supply voltage range	–	21 to 30 volts DC
Quiescent current consumption	–	10mA
Operating current (all outputs on)	–	250mA
Output contact rating	–	30V DC 1 Amp
Communications	–	RS485 two wire
Max. distance from panel	–	1.2Km (using RS485 data cable)
PCB size	–	190mm x 61mm
Fixing centres	–	51.5mm x 180mm
Cable capacity	–	2.5mm per terminal
Operating temperature	–	-5℃ to +50℃
Operating humidity	–	To 95% (non condensing)

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Syncro Main PCB

SNDR.1 SNDR.2 SNDR.3 SNDR.4

FIRE ROUTING
FAULT ROUTING
EXTINGUISHER OUTPUT

1. FLT.
2. RES.
3. INT·
4. CNT·
5. SIL.
0V
6. PR1·
7. PR2.
8. PR3·

REMOTE CONTROL AND AUX. INPUTS

COMMS
AUX 24V
NETWORK IN
NETWORK OUT

ADDITIONAL I/O BOARDS

REMOTE PSU

24V DC

BATT. DISCONN.
BATT. LOW
MAINS FAIL
EARTH FAULT
CHARGER FAULT

Syncro 8 Way Relay Board

Signal to other Systems 30V DC Max. 1 Amp Max.

O/P 1 NC C NO
O/P 2 NC C NO
O/P 3 NC C NO
O/P 4 NC C NO
O/P 5 NC C NO
O/P 6 NC C NO
O/P 7 NC C NO
O/P 8 NC C NO
OUT 0V
24V
COMMS OUT + – 0V

24V Out to next board only if powered from Power Supply & not Aux.24V at panel

Data Out to other Boards

– TX
+ RX
0V
24V
0V

COMMS IN

IN

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6 way Sounder Extender Board

Features

- 6 individually fused and monitored sounder outputs
- Fault and operated indications
- 2 opto-isolated general purpose inputs
- 2 volt free contact general purpose outputs
- Remote connection to panel via RS485 serial bus
- Common footprint to other Syncro I/O board types
- All outputs and inputs programmable for cause and effects
- Can be used with other Syncro I/O modules on the same panel
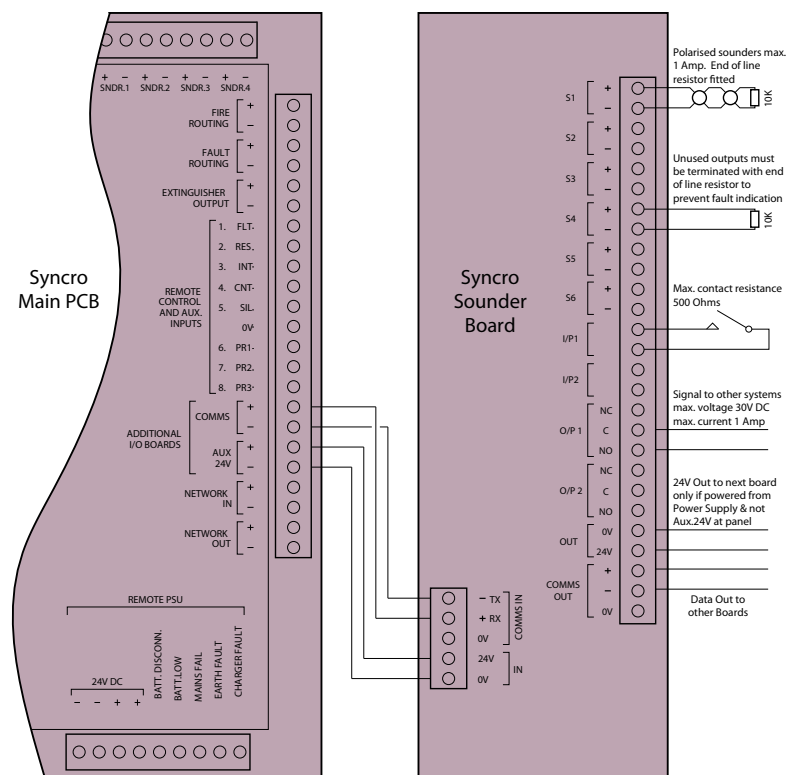- Compatible with Syncro AS panels

Product Code
90951

Product Overview

- To further enhance the versatility of the Syncro fire alarm system, additional sounder output capability can be added using Syncro sounder boards.

- These boards have 6 monitored sounder outputs, each of which can be individually programmed.

- In addition to the sounder outputs each board has two general purpose, opto-isolated inputs and two volt-free changeover contact outputs.

- Up to 32 of these boards can be connected to the dedicated RS485 communications bus in the control panel giving the capability of 192 additional sounder outputs with 64 general purpose inputs and 64 general purpose outputs.

- The sounder boards may be mixed on the RS485 bus with 16 channel I/O boards, 8 way relay boards or 4 way conventional detection zone boards to provide a very flexible system of I/O to satisfy any requirement.

- All inputs and outputs are configurable in the same way as devices connected to the loops and all may contribute to, or be acted upon by cause and effect logic.

- These boards are typically used in applications that require more than the four standard sounder outputs such as replacement of existing conventional systems.

- Standard Syncro control panels contain fixings for one sounder, relay, conventional detection or I/O board, which can easily be connected using four small signal wires to the power and comms bus within the panel.

- Consideration must be taken as to the loading on the main panel.

Technical

Product code	–	90951
Supply voltage range	–	21 to 30 volts DC
Quiescent current consumption	–	30mA
Full alarm current consumption	–	260mA
Sounder current monitoring resistor	–	10k
Current per input	–	3mA maximum
Current per sounder output	–	1 Amp maximum
Output contact rating	–	30V DC 1 Amp
Communications	–	RS485 two wire
Max. distance from panel	–	1.2Km (using RS485 data cable)
PCB size	–	
Fixing centres	–	190mm x 74mm
Cable capacity	–	51.5mm x 180mm
Operating temperature	–	2.5mm per terminal
Operating humidity	–	-5°C to +50°C To 95% (non condensing)

Syncro Main PCB

SNDR.1 SNDR.2 SNDR.3 SNDR.4
FIRE ROUTING
FAULT ROUTING
EXTINGUISHER OUTPUT

REMOTE CONTROL AND AUX. INPUTS
1. FLT-
2. RES-
3. INT-
4. CNT-
5. SIL-
0V
6. PR1-
7. PR2-
8. PR3-

ADDITIONAL I/O BOARDS
COMMS
AUX 24V
NETWORK IN
NETWORK OUT

REMOTE PSU
BATT. DISCONN.
BATT. LOW
MAINS FAIL
EARTH FAULT
CHARGER FAULT
24V DC

Syncro Sounder Board

S1
S2
S3
S4
S5
S6
I/P1
I/P2
O/P 1 — NC / C / NO
O/P 2 — NC / C / NO
OUT — 0V / 24V
COMMS OUT — + / - / 0V

Polarised sounders max. 1 Amp. End of line resistor fitted — 10K

Unused outputs must be terminated with end of line resistor to prevent fault indication — 10K

Max. contact resistance 500 Ohms

Signal to other systems max. voltage 30V DC max. current 1 Amp

24V Out to next board only if powered from Power Supply & not Aux.24V at panel

Data Out to other Boards

COMMS IN
— TX
+ RX
0V
24V
0V
IN

4 Way Conventional Detection Zone Module

Features

- 4 monitored detection zone inputs
- 2 monitored sounder outputs
- Volt free fire contact
- Volt free fault contact
- Local power supply fault input
- RS485 comms connection to Syncro Fire Alarm Panel
- Individual fault and operated indications for inputs and outputs
- Directly replaces a conventional control panel when integrating into an analogue addressable system
- Can be used with other Syncro I/O modules on the same panel
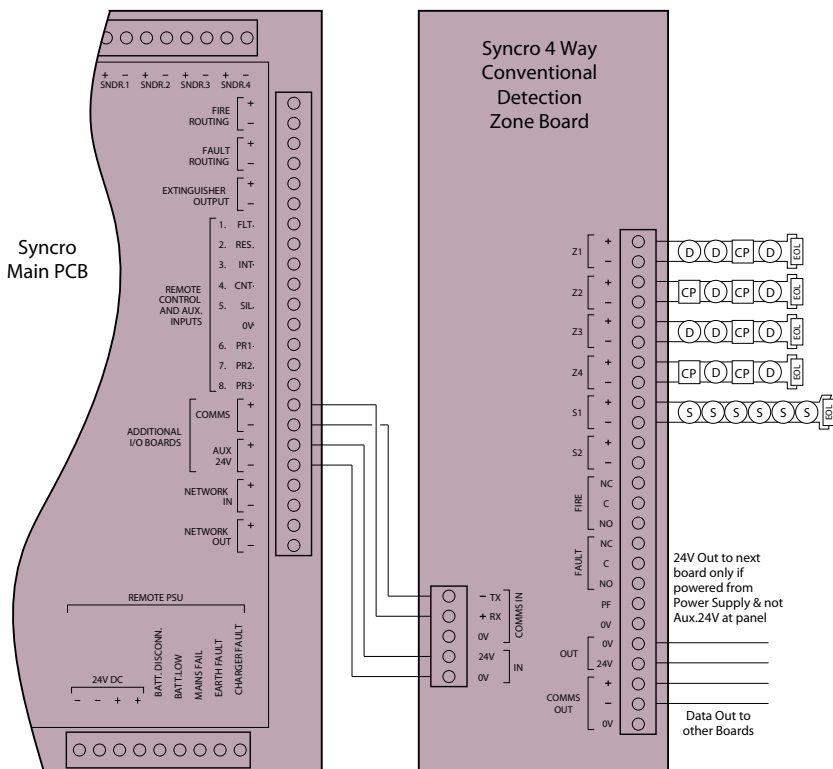- Compatible with Syncro AS panels

Product Code
90950

Product Overview

- To further enhance the versatility of the Syncro fire alarm system, four conventional detection circuits can be connected with up to 30 detectors per circuit.

- Conventional control panels can be replaced with this simple module and existing conventional systems can be interfaced directly to modern analogue addressable control systems and networks.

- A fail safe mode ensures that the detection inputs will still operate the sounder outputs and fire contact if communication to the Syncro panel is lost.

- Up to 32 of these boards can be connected to the dedicated RS485 communications bus in the control panel giving the capability of up to 128 conventional zones with 64 sounder outputs.

- The detection zone boards may be mixed on the RS485 bus with 16 channel I/O Boards, 6 way sounder boards or 8 way relay boards to provide a very flexible system of I/O to satisfy any requirement.

- All inputs and outputs are configurable in the same way as devices connected to the loops and all may be acted upon by cause and effect logic.

- Standard Syncro control panels contain fixings for one (four way) Detection Zone board, Sounder board, Relay board or I/O board, all of which can easily be connected using four signal wires to the power and comms bus within the panel.

- Consideration must be taken as to the loading on the main panel.

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Technical

Product code	–	90950
Supply voltage range	–	21 to 30 volts DC
Quiescent current consumption	–	70mA
Operating current (all outputs on)	–	250mA
Output contact rating	–	30V DC 1 Amp
Detection zone monitoring resistor	–	6k8
Sounder circuit monitoring resistor	–	10k
Communications	–	RS485 two wire
Max. distance from panel	–	1.2Km (using RS485 data cable)
PCB size	–	
Fixing centres	–	190mm x 74mm
Cable capacity	–	51.5mm x 180mm
Operating temperature	–	2.5mm per terminal
Operating humidity	–	-5°C to +50°C To 95% (non condensing)

Syncro Main PCB

SNDR.1 SNDR.2 SNDR.3 SNDR.4
FIRE ROUTING
FAULT ROUTING
EXTINGUISHER OUTPUT

REMOTE CONTROL AND AUX. INPUTS
1. FLT·
2. RES·
3. INT·
4. CNT·
5. SIL·
   0V
6. PR1·
7. PR2·
8. PR3·

ADDITIONAL I/O BOARDS
COMMS
AUX 24V
NETWORK IN
NETWORK OUT

REMOTE PSU
BATT. DISCONN.
BATT. LOW
MAINS FAIL
EARTH FAULT
CHARGER FAULT
24V DC

Syncro 4 Way Conventional Detection Zone Board

Z1
Z2
Z3
Z4
S1
S2
FIRE — NC C NO
FAULT — NC C NO PF
OUT — 0V 0V 24V
COMMS OUT — + – 0V

– TX
+ RX
0V
24V
0V
COMMS IN

24V Out to next board only if powered from Power Supply & not Aux.24V at panel

Data Out to other Boards

page 19

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16 Channel Input/Output Board

Features

- 16 channels
- Each channel configurable as input or output
- Inputs opto-isolated
- Outputs open collector transistor
- Simple 2 wire connection to control panel
- Up to 32 boards supported per panel (512 Input/Output Channels)
- Inputs and outputs configurable as per field devices
- Full cause and effects on all inputs and outputs
- Multi drop RS485 communications
- Can be used with other Syncro I/O modules on the same panel
- Compatible with Syncro AS panels
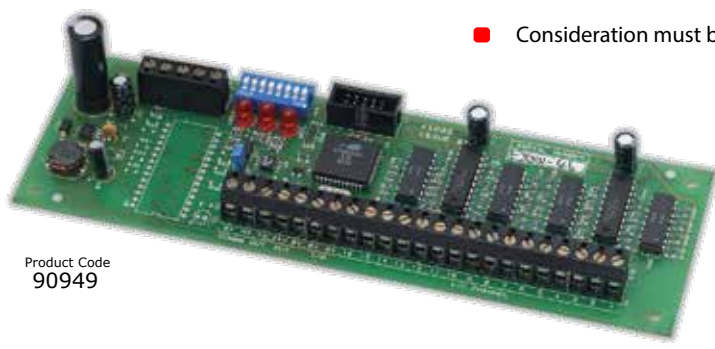
Product Overview

- To add more I/O capability to the extensive options already offered by the Syncro control panel, up to thirty two, sixteen channel I/O boards may be connected.

- The 16 channel boards may be mixed on the RS485 bus with 8 way sounder boards, 6 way sounder boards or 4 way conventional detection zone boards to provide a very flexible system of I/O to satisfy any requirement.

- When using a simple two wire RS485 communications protocol, these boards may be mounted locally to the control panel or distributed on a bus up to 1200 metres long by using a suitable cable.

- The flexibility of these boards is further enhanced by the fact that each of the channels is configurable as either an input or and output.

- Each channel may also be configured to produce a variety of input actions or respond to a variety of output types.

- All channels can contribute to, or respond to, system wide cause and effects logic.

- Typical uses for I/O boards include geographical LED mimic displays and plant alarm inputs.

- Standard Syncro control panels contain fixings for one sounder, relay, conventional detection or I/O board, which can easily be connected using four small signal wires to the power and comms bus within the panel.

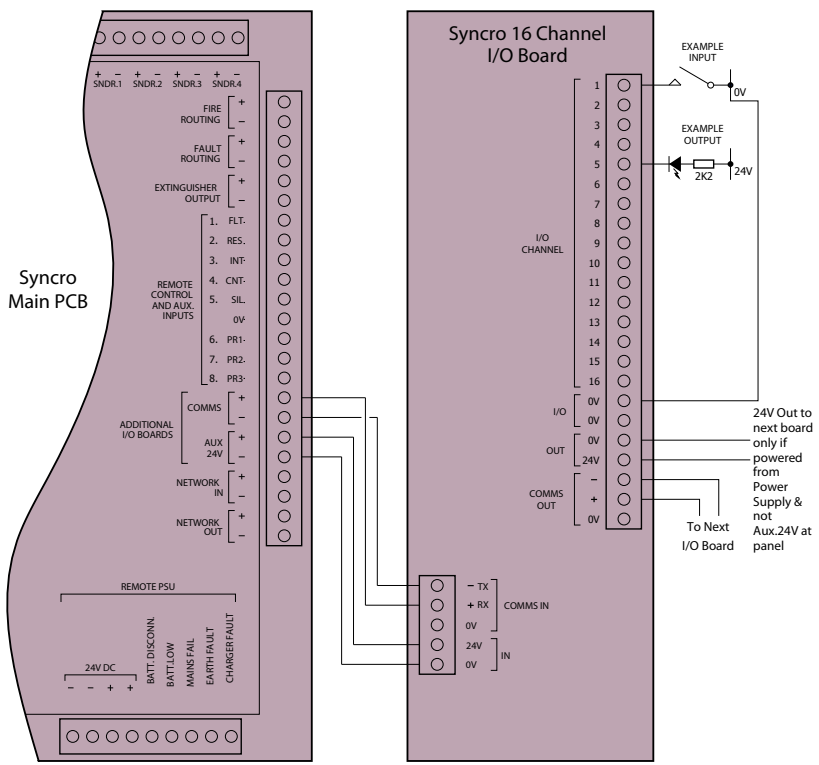- Consideration must be taken as to the loading on the main panel.

Product Code
90949

Technical

Product code	–	90949
Supply voltage	–	21 - 30V DC
Quiescent current consumption	–	20mA
Current per input	–	3mA (maximum)
Current per output	–	100mA (maximum)
Communications	–	RS485 two wire
Maximum distance from panel	–	1.2Km (using correct type of cable)
PCB size	–	190mm x 61mm
Cable capacity	–	2.5mm per terminal
Operating temperature	–	-10°C to +50°C
Operating humidity	–	To 95% (non condensing)

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I/O Board Enclosure

Features

- Matching design & colour scheme for Fireboy new style control panel range
- Easy to install
- Incorporates Fireboy's "Quick Fit" lid & equipment chassis
- Front panel mounted status led indication
- Space for 3.2Ah batteries
- Choice of power supplies

2x I/O boards with PSU

3x I/O boards without PSU

Voyage Data Recorder Hardware Interface

The Voyage Data Recorder interface allows NMEA 0183 standard messages to be transmitted to the RS485 serial input of a compatible Voyage Data Recorder.

Product Overview

- A range of new enclosures designed to house Syncro I/O modules with or with a power supply. The Syncro I/O enclosure offers the installer the flexibility to create their own customised I/O panel. The standard Syncro I/O enclosure can hold up to 3 Syncro I/O modules or 2, if a power supply is incorporated.

Equipment

Product Code	Description
90972	Syncro I/O enclosure without Charger
90952	Syncro I/O enclosure c/w 750mA Charger
90953	Syncro I/O enclosure c/w 2.5A Charger
90954	Syncro I/O enclosure c/w 5.25A Charger
Plug-Ins	
90949	16 Channel Input/Output Board
90947	8 Way Relay Extender Board
90951	6 Way Sounder Extender Board
90950	4 Way Conventional Detection Zone Module

16 Channel Input/Output Board (90949)

8 Way Relay Extender Board (90947)

6 Way Sounder Extender Board (90951)
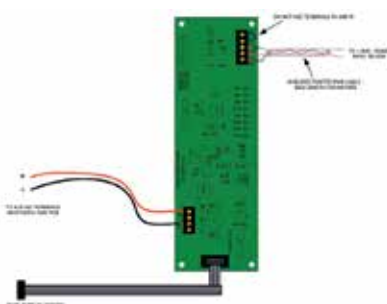
4 Way Conventional Detection Zone Module (90950)

Choose any combination of I/O boards

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MD9800-LC

Marine 1-4 Loop Addressable Control Panel

Approvals:
RINA
96/98/EC MED

- Up to 4 detection Loops through Loop Control Unit LCU cards.
- Upgradable to 8 additional loops adding external expansion modules MD9800-2L
- Communication bus between LCU cards and addressable units connected on the loops using specific MD2 protocol.
- Up to 127 devices connected on each loop.
- For each device connected on the loop the Central Unit, via the LCU cards, sends requests/commands and acquires data and status continuously.
- The Central Unit is able to detect any fault occurring on the detection system (loop break, detector failure, etc).

- Power Supply .... 28 Vdc
- MAX Current .... 1,2 A
- Operating temperature .... -5°C ÷ +50°C
- Protection Index............................ IP40/IP55
- Rack Weight .... 3.5 Kg
- W.B. Weight.................................... 13 Kg
- Size...

MD9800 Central Unit includes:
One monitor VGA TFT LCD 6.5" 640×480, Two separate sets of keys for Acknowledge and Reset, for alarms and faults.

Custom keyboard to access to function menu. The menu allows, through several levels of password to:

- Filter out displayed data
- Isolate and reconnect any addressable device
- Display events log
- Buzzer and Lamp Test
- Time, brightness and volume setting
- Scroll among displayed data
- Device addressing

The block diagram describes the Fire Detection System main modules: "Central Unit" (CU): the controller unit can be configured with or without display (Monitor Control Panel (MCP). It's interfaced to one or more of the following devices:

- Alarm Repeater (DPU)
- Martec Safety Management System (SMCS)
- Automation System and
- Public Address
- Printer
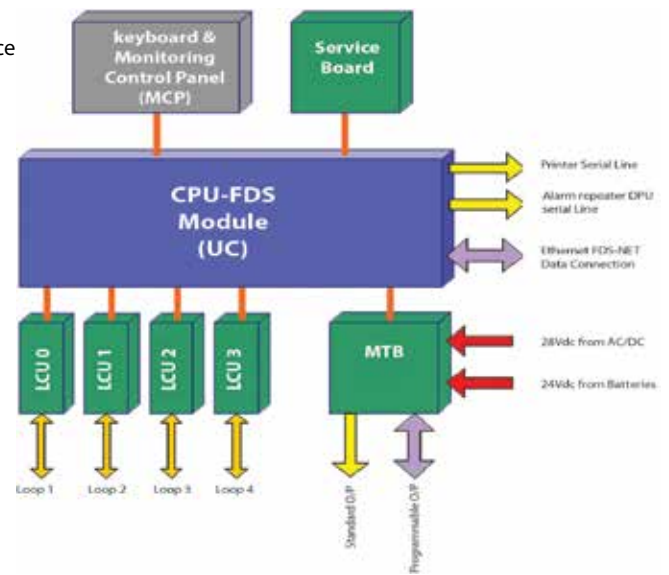
Addressable detectors connected on detection Loop. Redundant communication bus, based on Ethernet network, used to connect the Central Units together. Uninterruptible Power Supply (UPS) able to supply power to the Central Unit and the devices connected on the detection loops. in the event of main supply failure.

MD9860 Repeater Panel

MD9860 Repeater panel for MD9800 Fire Detection Central Unit.

Displays all alarm or fault conditions with Location, Device Type and Address on the LCD monitor. It also activates, for each new event, an acoustic signal which can be muted through a dedicated key.

MD9860 displays the last 16 messages that have occoured.

Front panel indicators:
- LCD display, 16 lines 40 characters
- Scrolling keys
- ACK alarm buzzer mute key
- Internal buzzer

MD9800-LC
Mounted in optional
Wall Cabinet

Loop Control Unit

Loop Control Unit (LCU) is installed inside of the following equipment:
- MD9800-LC Fire Detection Central Unit (Max 4 Loop)
- MD9800-EXP Expansion Rack (Max 8 Loop) and MD9800-2L (Max 2 Loop)

The LCU's are fitted within the Central Unit, 1-4 LCU's maximum.

The LCU interfaces between the Central Unit and the addressable devices connected on a 2 wire Loop.

Each LCU monitors a one Loop, to which 127 addressable devices can be connected.

The functional blocks shows the following:
- Microprocessor (μP) including all of the service circuits ie. oscillator and Watch-Dog.
- Interface for degraded condition.
- RS485 interface with two serial lines for the connection between the MTB mother board and the Central Unit.
- Loop interface.

This last block shows:
- DC/DC
- Two modulators circuits for the data transmission on the Loop.   ● Two Loop DC voltage/current control circuitsss

Data transmission run in serial mode (9600 Baud). The Unit test the elements by a 24÷29Vdc modulated voltage. Each Loop element, answers by a 22÷24Vdc modulated voltage. In normal conditions the LCU tests the loop twice, transmitting and receiving from the A side of the Loop and subsequently twice from the B side and so on. In case of a break in the loop the Unit is still able to monitor the whole Loop. The data exchange time require about 2 sec.

Galvanic isolation separates the Loop voltage from the LCU power supply and from all other loops.

Loop configuration is established by the Central Unit is stored in the LCU memory.

For greater safety each LCU has two RS485 serial lines on-board as interface to Central Unit: the data exchange runs alternatively on each other.

When the LCU detects that the Central Unit is not asking for the state of the loop for more than 4 seconds, it enters into "Degraded Condition": the LCU continues to wait for the data from the loop. If a device sends an alarm condition the LCU produces the DEG-ALARM signal that the Central uses to generate a generic state of "Loop in Alarm"
The LCU mounts via 16/26 pin connector named M1 onto the Central Unit mother board:

- the loop data-exchange and power
- the RS485 serial lines
- power supply (+5V and + 24V)
- DEG-ALARM signal

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MD2010
Marine 1-10 Loop
Addressable Control Panel

Approvals:
RINA
96/98/EC MED
Lloyds Register

Fire Alarm Central Unit for addressable detectors, developed according to standard EN54-2, which is able to work in two different configurations:

- Config 1, Working as a single or networked analogue Addressable loop based Fire Alarm system.

- Config 2, Working as a networked system with open electric lines called Branch's giving full "Safe Return to Port" compliance.

Main features:

Processor controlled.

- Up to 16 detection Loops through Loop Control Unit LCU cards.

- Up to 16 detection Branches by using Branch Control Unit (BCU) cards. A maximum of 20 branches can be fitted, using external expansion modules MD2010-BR.

- Communication bus between LCU/BCU cards and addressable units, based on MD2 protocol.
- Up to 127 devices connected to each Loop.
- Up to 180 devices connected to each Branch.
- The Central Unit is able to detect any fault occurring on the detection system (loop/branch break, detector failure, etc).
- The Central Unit is able to share the management of the Branch with another Station.

19" 6UR Rack, for installation in consolle or wall-mounting box.

Standard System Configuration

FZ1   FZ2

CZ1
MD2010-CU

Switch Hub 2

CZ2
MD2010-CU

UPS1
MD2010-PS

FDS NET
Fibre Optic

Switch Hub 1

LCU

LOOP 01

LCU

LOOP 33

UPS2
MD2010-PS
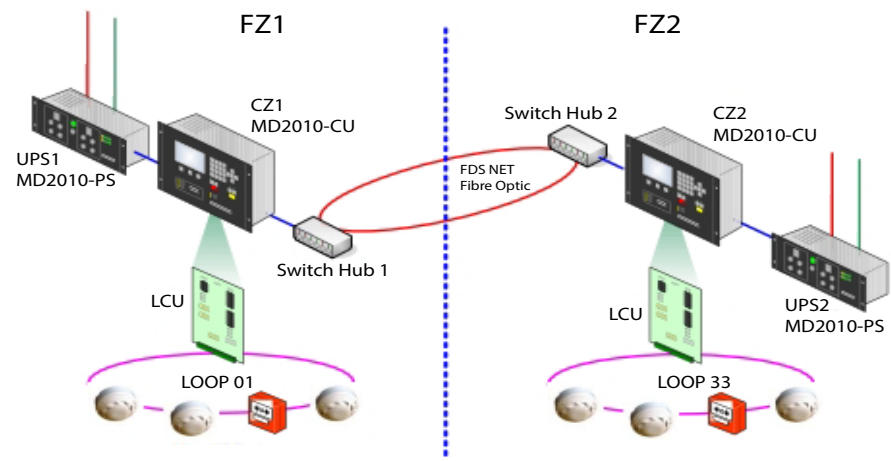
The monitors display area is split into three sections:

- Summary Section, to indicate all active alarms/faults and isolated devices.
- Message Section, to display the list of messages.
- The automatic filter is "Alarms & Faults".
- Detail Section, with indication of selected device.

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Safe Return to Port - Configuration

IMO SOLAS (MSC.1/Circ.1214)

- The fire detection system should remain operational in all spaces not directly affected by the casualty

- Fire and smoke detection of the same section, as defined by the FSS Code Ch. 9, para. 2.4.1 and not exceeding one deck in one main vertical zone, may be lost provided all other detectors and indication in the continuously manned central control station remain operational.
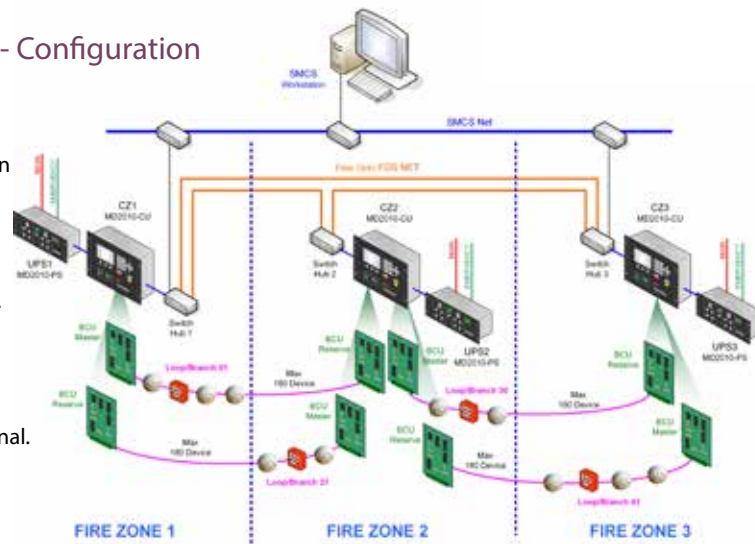
Branch Control Unit

The Branch Control Unit BCU is installed inside the following equipment:

MD2010-CU Fire Detection Central Unit (Max 16 BCU)

MD2010-BR Expansion Module (Max 2 BCU)

This Unit represents the interface between the Central Unit and the addressable devices that are connected on a dedicated line named Branch, made by a 2–wire cable

The functional blocks are the following:

- Microprocessor(µP) including all the auxiliary circuits like oscillator and Watch-Dog
- Dual RS485 interface for connecting the Central Unit through the MTB mother board Branch interface

The last block includes:
- DC/DC
- Modulator circuit for data transmission
- Circuit for data reception
- Voltage/current control circuit
- Opto-electronic circuits for galvanic insulation

BCU-Branch Control Unit
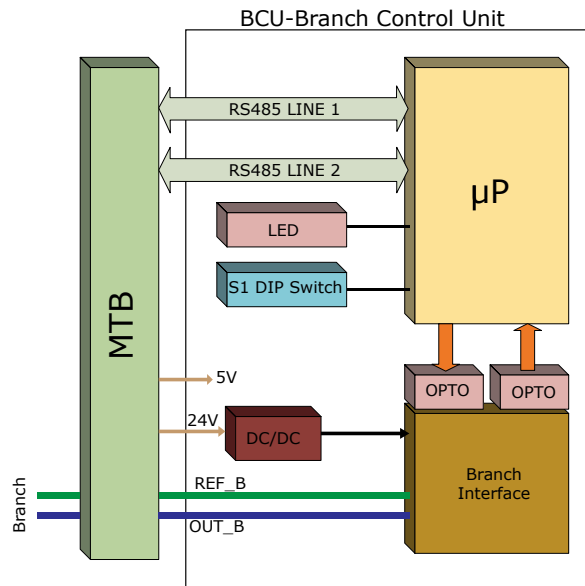
Data communication on the Branch is made by a proprietary serial protocol at 9600 Baud:

- The BCU queries the connected devices by modulating the voltage between 24 and 29Vdc
- Each device replies modulating the voltage between 22 and 24Vdc
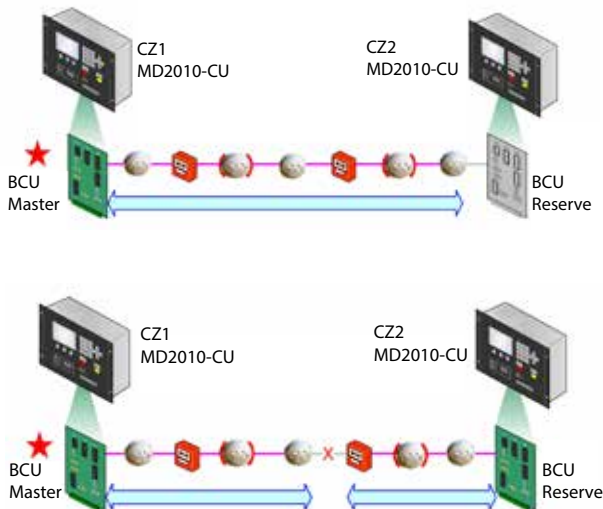
The BCU card can be configured from the System to be Master or Reserve. If Master, it polls all the devices connected on the branch, including the corresponding Slave BCU which is connected at the other end of the branch. The reply of the ending Slave BCU is the confirmation of the branch integrity.
Cyclically, the Master-Reserve function is reversed during a complete polling sequence, to check the complete functionality of the Reserve card

If an interruption of the branch occurs, both cards become Master and each of them takes control of the relative section of the branch. In this case the system signals the "Branch break" status

The DC/DC converter provides galvanically insulated power supply to the BCU. The insulation is monitored and an eventual "Ground Fault" is signaled. The branch configuration set by the Central Unit is stored inside the LCU memory
As a safety measure, the card is provided with two serial RS 485 lines interfaced with the CPU. The communication is done alternatively by both. The BCU mounts a 16/26 pin connector named M1 for the connection of the following signals to the Central Unit mother board:

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MD2010-PS
Power Supply

The UPS provides the power supply to the MD2010-CU Fire Detection Central Unit and to the devices connected on each Loop/Branch. It provides a stabilised 28 Vdc 120W. Main Power Supply and Emergency Power Supply, range 100÷240Vac - 50÷60Hz single-phase with internal "Change-Over". In case of temporary loss of the Main Power source, the unit switches automatically to the Emergency Power source allowing the continuity of operation of the MD2010-CU Central Unit.

The equipment can be supplied with internal battery which, in case of loss of both external supply sources, supplies a 24Vdc back-up power. It consists of two battery packs installed into the unit with 7,5Ah or 12Ah able to guarantee 30/60 min autonomy for the Central Unit. The batteries are automatically charged (Full charge) and keep charged (Trickle charged) by a dedicated electronic circuit which is included in the MD2010-CU Central Unit.
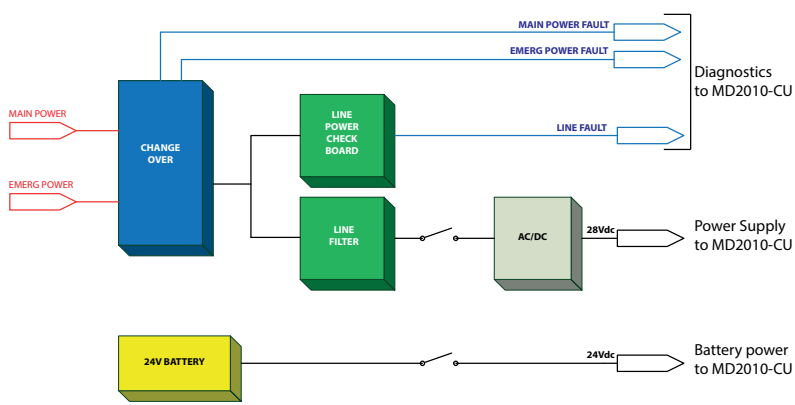
- EMC line filter.
- Line Power Check Board.
- AC/DC module.

Front Panel Indicators:
- Bar-led for battery voltage and
- current state.
- Line lamp.

Ethernet Switches

The EDS-405A/408A are entry-level 5 and 8-port managed Ethernet switches designed especially for industrial applications. The switches support a variety of useful management functions, such as Turbo Ring, Turbo Chain, ring coupling, IGMP snooping, IEEE 802.1Q VLAN, port-based VLAN, QoS, RMON, bandwidth management, port mirroring, and warning by email or relay. The ready-to-use Turbo Ring can be set up easily using the web-based management interface, or with the DIP switches located on the top panel of the EDS-405A/408A switches.

MD2010-BR
Expansion Module

Expansion Module MD2010-BR allows the MD2010-CU Central Units to upgrade the system control of two more Branches. Just one 9-way Sub-D cable is needed to connect the Module

The Expansion Module has the following functionality:
Allows the installation of 2 Branch Control Units (BCU). The data-sharing from/to Central Unit run on two RS485 serial lines.

Expansion Module box is in aluminium, suitable for wall mounting. Terminal boards and connectors for Branch and Central Unit interface are located on the small-size motherboard at top side.

Each Central Unit capability can be upgrade up to 20 Branch, connecting two MD2010-BR Expansion Module each other.

COB-I/O Control Board
The COB, when connected on the loop of the fire detection systems (FDS) of the series MD9800 or the Branch of the systems of the series MD2010, is able to acquire and provide commands from / to external systems.
This card, as standard, allows the acquisition, with line monitoring, of two potential-free contacts, from other devices, such as fire doors limit switches. The message about the change of switch status can be viewed on Central FDS using customisable messages and / or sent directly to the Integrated System for Monitoring Safety (SMCS) Martec

MRB Board-Multi Relay Board
The multi-relay board is connected to the detection loop and provides16 volt- free relay contacts, configurable either NO or N.C.
Each group of 4 relays is controlled by a dedicated microprocessor, which correspond to an FDS object address.

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MD9900 is an automatic addressable detector able to provide fire alarm in case of smoke presence and to monitor the temperature inside the protected room.

The base provides an IP32 protection, It is designed for installation on false ceiling; it has a cable input on the top without cable gland.

MD9901 is an automatic addressable "multi-sensor" detector able to:
■ alarm on smoke presence
■ alarm on high temperature
■ monitor the temperature inside the protected room.   57º C
                                                          80º C
                                                          90º C

The base supplied in IP65 version can be installed in wet area and is equipped with three cable entry holes suitable for PG16 cable gland.

MD9902 is an automatic addressable detector able to provide fire alarm in case of flame presence and to monitor the temperature inside the protected room.

In this version the base include a buzzer for signalling detector alarm condition. Buzzer may be actived directly by a pre-pro-grammed cause-effect matrix from FDS. This base is indicate for installation in cabin and in suite with bed-room and living-room to warn passenger about a fire alarm by acoustic signal.
Pulsing audible signal, about 4 KHz fre-quency and 77 dB(A) @ 1 mt sound output

MD9901-Ex is the intrinsically safe version of MD9901 detector; it is an automatic addressable
"multi-sensor" detector able to:
● alarm on smoke presence
● alarm on high temperature
● monitor the temperature inside the protected room.
● report the analogue values of temperature and smoke that it measures.
● installed in explosion-hazard areas of Zone 1 /2

In this version the base include a buzzer for signalling detector alarm condition. Buzzer may be actived directly by a pre-pro-grammed cause-effect matrix from FDS. This base is suitable for passageways, stairs, and other spaces without false-ceiling, to warning passengers about a fire alarm by acoustic signal.
Pulsing audible signal, about 4 KHz frequency and 77 dB(A) @ 1 mt sound output.

MD9820 is an automatic addressable manual call point with IP42 protection index, suitable to be installed in non-humid areas.

MD9831 is an automatic addressable manual call point with IP66 protection index, suitable to be installed in wet areas.

CS1461-EX Explosion-proof break glass manual call point UV-resistant fiberglass-reinforced polyester, red colour

This unit, once connected to the loop of the fire detection systems (FDS) series MD9800 or to the Branch series MD2010, can acquire signals and provide commands from/to external systems. The module can acquire the status of four potential-free contacts, coming from other sys-tems, such as fire doors and fire fighting system, limit switches. Line monitoring is performed. The state of the inputs can be viewed on Central Unit FDS with customizable message and/or sent directly to the Safety Management Control System (SMCS) by Martec.
The module can activate four voltage-free contacts with programmable function (range: 24Vdc@2A) to command external systems as, for example, fire doors and fire fighting systems, Output programming can be done directly both by FDS and by SMCS.

These units, expressly designed for the com-mand and control of fire doors, are connected on the fire detection systems (FDS) Loop of the the series MD9800 or on the Branch of the series MD2010.
The MD9842 I / O Control Box is composed of a cabinet where can be accommodated up to 8 cards COB each capable to manage two Fire Doors by with 2 relay output (2A @ 24Vdc) and with 4 inputs with line monitoring.
This means that the I/O box can manage 8 Fire Doors in the configuration with 8 COB MD9842-8 and 16 Fire Doors in the configu-ration MD9842-16.

These modules are designed to interface external systems and devices, to get status and to send command. These input/output modules are con-nected on the detector Loops.

MD9840 .... 4 digital in/ 4 digital out
MD9840B................................... 4 digital inputs

MD2203 Check Point incorporates electronics that allows to interface a handheld with "Cap" MD2204.
It is mounted inside a box with degree of protection IP65 suitable for bulkhead mount-ing. Once the handheld with "Cap" MD2204 is placed in front of the MD2203 Check Point:
● It transmits the identification data to the handheld (Loop and Address)
● Receives the data identifying the handheld
● Transmits confirmation of the correct data acquisition to the handheld Data transmission and reception run by coupling IR.
This is the PCB mount special IR transmitters and receivers positioned on the front.

MD9870 Timer Unit allows isolating fire detector installed in working areas where performed operation may active fire alarm. (I.e. welding activities in engine workshop) Operator has to set the detector isolation time from 30 to 120 minutes by the timer dial before to start such making.

Marine Fire Detection Systems

Commercial   **Military**   **Passenger**   **Yachts**

On Board, On Guard

FIREBOY - XINTEX
safety systems

Fire Suppression . Fire Detection . Gas Detection